Promoting Sustainable Development in Africa through Higher Education

Prof Goolam Mohamedbhai  
Ex-Vice Chancellor  
University of Mauritius

Chaired by: Ms Florence Nakayiwa-Mayega, Director of Planning, Makerere University, Uganda

ABSTRACT

Achieving sustainable development, in particular the Millennium Development Goals, is crucial for Africa, and higher education institutions, through their teaching, research and community engagement activities, can become key agents for achieving sustainability. By incorporating elements of sustainability in the training of teachers, professionals and future leaders, higher education institutions can significantly influence their thinking and attitude towards sustainable development; many of the development challenges faced by Africa can be addressed through research carried out by higher education institutions, especially by adopting a multi- and inter-disciplinary approach; through community engagement higher education institutions can reach out to vulnerable sectors of society; and by creating an informed and engaged citizenry and promoting understanding, tolerance and peace, higher education institutions can equally play a vital role in achieving sustainability.

In order to determine whether higher education in Africa was contributing towards sustainable development, an online survey of African higher education institutions was undertaken jointly by the Global University Network for Innovation (GUNI), the International Association of Universities (IAU) and the Association of African Universities (AAU) in 2010, the objective being to determine the extent of their current sustainability practices.

The paper reports on some of the findings of that survey, which showed that although some institutions have integrated sustainability in their curricula and are involved in sustainability research and outreach projects, these initiatives are relatively small and there is need for a more institutional approach to promoting sustainable development through higher education.

Keywords: Sub-Saharan Africa; Higher Education; Universities; Sustainable Development.
1 INTRODUCTION
Sustainable development (SD) is a concept that is not new, and yet it is complex and not easy to define. A quarter of a century ago, the 1987 Commission on Environment and Development defined it as “meeting the needs of the present without compromising the ability of future generations to meet their own needs”. This remains the most quoted definition although there is continuous evolution in the way SD is operationalised (UNESCO, 2006).

All the economic, social and human indicators show that Africa, in particular Sub-Saharan Africa, is the worst developed region of the world. The latest figures indicate that the bulk of the Millennium Development Goals, almost all of which are directly related to SD, will not be achieved in Sub-Saharan Africa by the due date of 2015\(^1\). This explains why achieving sustainable development is so important for Africa.

That education can be a powerful tool in promoting SD was realised in the 1990s. The concept of Education for Sustainable Development evolved and, in 2002, led to the United Nations’ launch of the Decade for Education for Sustainable Development (2005-2014), with UNESCO as the lead agency for promoting the decade’s activities.

It also became increasingly clear that, within the education sector, higher education institutions have a key role to play in promoting SD (Mohamedbhai, 2008). They train teachers, professionals and future leaders and can help to create an informed and engaged citizenry, thus promoting a democratic culture. Through their research they help to find solutions to social and technical problems related to SD, and through community engagement they can reach out to vulnerable sections of society and help to promote understanding, tolerance and peace.

The recent UN Conference on Sustainable Development held in Rio de Janeiro in June 2012 endorsed a Declaration supported by leaders of over 250 higher education institutions and organisations committing themselves to teaching SD concepts, encouraging research on SD

issues, ‘greening’ their campuses and supporting sustainability efforts in their communities. A few years earlier, in May 2009, leaders of African higher education institutions meeting at the 12th General Conference of the Association of African Universities in Abuja, Nigeria, crafted a Declaration in which African universities, national governments, and regional organisations, as well as development partners, are called upon to take necessary steps to enable African higher education institutions to play a meaningful role in promoting SD in Africa.

This paper first looks at how higher education institutions can promote SD through their various activities, and then reports on the results of a survey undertaken to determine the current sustainability practices of African universities.

2 PROMOTING SD THROUGH HIGHER EDUCATION

2.1 TEACHING AND LEARNING

There are two different approaches that can be used for introducing SD in teaching and learning at undergraduate level in universities. First, because of the complexity of SD, it would be desirable to introduce a separate, compulsory module on SD for all students in order to facilitate understanding the basic concepts of SD and help create awareness of regional and global SD challenges. The module should equally incorporate the concepts of ethics and social responsibility. Second, SD should be mainstreamed in all professional curricula, especially in programmes of engineering, architecture, agriculture, economics, etc. to enable students to become conscious of the environmental, social and economic impact of their respective profession.

Running of postgraduate programmes is another effective way of promoting SD. Again, two approaches could be used. A generic programme, preferably at Master’s level, can be very useful for graduates working in any field but who need to be conversant with SD principles in their work. Critical areas for SD such as deforestation, water resources, energy conservation and urban planning require more specialised postgraduate Master’s courses. Universities can also run continuing education programmes to update practising professionals in, for example, engineering, architecture and agriculture, on the latest findings on the effect of their work on SD.

---

3 See http://www.aau.org/sites/default/files/esb/abuja_declaration_on_sustainable_development.pdf
But a curricular approach alone is not sufficient. A new pedagogical approach that re-orients learning to address SD challenges is necessary. Teaching should not be done through memorising facts and figures but through understanding and analysis. Project work that encourages multi-disciplinarity and is undertaken by groups of students should form part of every course. All programmes should develop generic skills such as team work, critical thinking and creativity. Students should be encouraged to ‘think outside the box’ and to adopt a systems thinking and holistic approach. They should be made to appreciate that the concept of ‘think globally, act locally’ is vital for SD.

A major responsibility of higher education is to train teachers for the lower education sectors. There is little doubt that the best approach to promoting sustainable development is by introducing it to pupils in primary and secondary schools. The curricula of all teacher training programmes must now incorporate SD concepts. However, most existing teachers have not been trained to adopt such an approach, and would need to be re-trained. Because of the large numbers involved, open and distance learning may have to be resorted to.

2.2 RESEARCH

Although a lot of research in pure, applied and social sciences carried out in universities is indirectly related to SD, generally limited research is specifically and intentionally targeted at SD. And yet higher education institutions are well-positioned to study and find solutions to the many sustainability challenges at local (health, energy, water, waste products) and international (climate change, global warming, carbon emissions) levels. Since universities cover several fields, they are ideal institutions for undertaking multi-, inter-, and intra-disciplinary research, vital for SD solutions. Also, the research that is carried out from a national perspective can guide policy makers on SD issues. Research on SD undertaken by doctoral students can also be extremely useful, not only from the point of view of the research results but equally in producing young researchers who appreciate SD issues and can further the cause. Yet another great advantage of universities is that they have collaborative links with other institutions, either in their region or in other parts of the world, so that they can pool resources and share experiences.

An interesting discipline of research that has evolved is Higher Education for Sustainability (HES), which looks at ways universities can become agents of change for SD (Wright, 2006). How can universities integrate sustainability in all their activities and responsibilities? What challenges and constraints do they face in doing so? What capacity building is necessary to
achieve HES? How can the university campus itself become sustainable? What role should students play in HES?

2.3 COMMUNITY ENGAGEMENT
Perhaps the most effective way for universities to promote SD is by engaging with the community – this could be local and national, or regional and global (The Democratic Collaborative, 2007). Community engagement is particularly important for Africa because most of the SD challenges are in the rural areas, often remote from universities. Faculty and students can reach out to the disadvantaged communities in those areas and offer assistance in health (e.g. counselling on HIV/AIDS), education (e.g. running literacy programmes for women), agriculture (e.g. advising farmers on improving crop yields), engineering (e.g. using renewable sources of energy), etc. Students in all fields, but specially those studying medicine, education, agriculture and engineering, form a huge pool of resources for assisting in engaging the community, and many universities around the world have devised interesting community engagement activities for their students.

Universities engaging the community can also take the shape of providing consultancy services on SD to industry and the professions, or running of seminars/workshops on SD for the community. University faculty often serve on various national and professional committees and participate in conferences in different fields; they can create awareness of SD through their interventions.

2.4 INSTITUTIONAL GOVERNANCE AND CAMPUS GREENING
For a university to be effective in promoting SD, the concept of sustainability must be fully embedded within the institution. This may require re-allocating resources and effecting important changes in the organisational and management of the institution, which is why a leadership that in fully committed to sustainability is crucial (Abdul Razak, 2012). A first major step is to incorporate SD within the institution’s mission statement and strategic plan. There is also need to create some sort of institutional management structure for SD. This could take the form of a designated committee or a coordinator for SD, or assigning the responsibility of SD to a Dean of Faculty or a Vice-Rector. It is also very important to have a specific institutional line budget for SD. It may also be necessary to re-organise the departmental structure of the university in such a way as to facilitate inter- and multi-disciplinarity in teaching and research.
Universities must practice what they preach with respect to SD. They must ensure that they fully integrate sustainability practices in their management and operations. Efforts must be made on campus to reduce paper consumption, recycle waste, minimise energy consumption, ensure campus safety and adequate lighting at night, provide environment-friendly transportation for students, promote multi-cultural understanding, practice democracy and good governance, including the participation of students in all decision-making processes, etc. This has come to be known as ‘campus greening’. There are many universities that have achieved significant progress in greening their campus, for example the University of Copenhagen\(^4\) in Denmark and the Colorado State University\(^5\) in USA.

2.5 CONSTRAINTS AND CHALLENGES IN PROMOTING SD

There is evidence to show that universities in the developed world (Europe, USA, Australia, Japan) have made important progress in aligning their activities towards sustainability\(^6\). On the other hand, universities in the developing world, including Africa, are lagging behind. In Africa, universities at present have to cope with the challenges of massive student enrolment, poor and inadequate infrastructure, lack of funds, severe shortage of well-qualified faculty, weak research output and insufficient community engagement. Promoting SD in such circumstances is understandably not easy.

However, progress has been made in a number of African higher education institutions. The United Nations Environment Programme (UNEP) and the Association of African Universities (AAU) have partnered to promote the programme Mainstreaming Environment and Sustainability in African Universities (MESA). MESA, launched in 2004, has developed a toolkit (UNEP, 2006) that guides African universities on how to mainstream sustainability in all their activities. It is reported (Lotz-Sisitka & Pradhan, 2012) that through the MESA network, about a quarter of Africa’s universities are now engaged in sustainability activities to various degrees, and that some 100 different curriculum and campus innovations have taken place. It was against this background that the survey described below was undertaken.

\(^4\) See [http://climate.ku.dk/green_campus/](http://climate.ku.dk/green_campus/)
\(^5\) See [http://www.green.colostate.edu/](http://www.green.colostate.edu/)
3 CURRENT SD PRACTICES IN AFRICAN UNIVERSITIES

3.1 SURVEY AND RESPONSE

In May/June 2010, the Global University Network for Innovation (GUNi), the International Association of Universities (IAU) and the Association of African Universities (AAU), all three organisations committed to promoting SD through higher education, carried out a survey of higher education institutions in Sub-Saharan Africa in order to determine the contributions of these institutions towards SD. An online questionnaire was sent to nearly 500 institutions in 41 African countries. The areas covered in the questionnaire were: teaching and learning; research; outreach and services; institutional governance; and campus operations.

Seventy-three institutions (response rate 15%) from 23 countries filled in, either fully or partially, and returned the questionnaire. The majority of the institutions (69%) were public-funded, 75% of them were Anglophone and 52% of them had an enrolment of between 1,000 to 10,000 students. The full report analysing the results is available from AAU’s website (GUNI-IAU-AAU, 2011). The salient findings in the different areas are summarised below.

3.2 TEACHING AND LEARNING

From the responses received, 41% of the institutions indicated that they had mainstreamed SD in their various curricula. Of these institutions, 27% had done so in social sciences and 23% in natural sciences, with only 9% in engineering and applied sciences and 7% in physical sciences. To the question as to whether the institutions were running SD courses, 26% reported that they were running specific SD degree courses, and 40% inter-disciplinary SD courses. Most of the inter-disciplinary courses were run in public institutions and well over half of them were offered as compulsory courses.

The three main barriers identified as hindering the introduction of SD courses in the institutions were: lack of funding (23%), lack of qualified staff (20%) and a lack of awareness and information about SD (17%). However, in 49% of the institutions there were staff development opportunities to enhance teaching and research in SD.

Students in the responding institutions did not appear to be very actively involved in sustainability issues. In only about a third of the institutions were students reported as being significantly active.
Only 35% of the responding institutions had a Faculty of Education and of these, only 39% were producing learning materials in support of Education for Sustainable Development.

3.3 RESEARCH
In 60% of the responding institutions, research on SD represented about 20-40% of all research undertaken in the respective institution. Only in 20% of the institutions was SD research greater than 40% of all research. Contrary to teaching, the two areas in which the bulk of SD research was undertaken were natural and physical sciences and engineering and applied sciences. Research on SD in health and medical sciences, education and management disciplines was particularly poor. The survey also enquired about how much of SD research was undertaken by students and as postgraduate research. In most of the institutions such research represented less than 20%.

The responses received with respect to what uses were made of SD research results were quite revealing. About 19% of the institutions reported that the research results were published in refereed journals, another 19% that they were presented at international conferences and 18% that they were placed as documentation in the university libraries. Only 12% of the institutions mentioned that the results were used for outreach programmes, and 10% for advocacy and policy making. From this it appears that the research results on sustainability are not really benefitting the main stakeholders, namely the communities and the policy makers.

Institutions were asked to identify the main factors that motivate research on SD. 17% of them mentioned partnerships with other institutions, researchers, government or industry as the dominant factor; 14% identified a supportive research environment and another 14% donor funding as enabling factors.

3.4 COMMUNITY ENGAGEMENT
Universities must create partnerships with other institutions or external bodies to promote SD. About 60% of the respondents mentioned that they partnered with local or national bodies, and about 55% with regional and international ones. Also, 55% of the institutions had developed non-formal/informal SD activities targeting a variety of audiences such as government, the general public, industry, teachers, students, etc.

Rural development being vital for Africa, institutions were asked about their engagement with the rural community. Two-thirds of the responding institutions mentioned they were
engaged with the rural community, either through research (63%), or student/staff exchanges (49%) or internship (44%). Over half of the respondents were also engaged in activities related to peace, security and conflict resolution through research (44%), staff/student outreach programmes (38%) or direct collaboration with the communities concerned (28%). About 60% of the institutions were equally engaged in various activities to promote cultural diversity and inter-cultural dialogue and understanding.

The institutions were particularly active in responding to HIV/AIDS challenges. More than 80% of the institutions indicated that they were involved in HIV prevention activities. Efforts undertaken by AAU and other organisations in getting African universities actively involved in the HIV/AIDS pandemic appear to have been successful.

3.5 INSTITUTIONAL GOVERNANCE AND CAMPUS GREENING

From the responses received, there appears to be ‘quite a bit’ of commitment to SD at either senior management level (Rectors/Vice-Rectors) or at the lower management levels of Deans and Heads of Department. About 60% of the responding institutions had some type of formal institutional policy showing substantial commitment to SD. This commitment was in the form of a policy document or coverage in annual reports or brochures/catalogues. However, the bulk of the institutions were public ones, the private institutions showing little commitment to SD. Also, 60% of the institutions surveyed, again mainly public ones, mentioned that they had established multi- or inter-disciplinary structures for teaching and research on sustainability issues, and 60% of the institutions had an institutional research agenda on SD.

To the question how SD activities were coordinated in the institution, 39% of the institutions mentioned they had appointed a SD coordinator, 39% had also assigned the responsibility to an appropriate Dean or Director, and 38% had set up an environmental council or SD task force. A few institutions (28%) had appointed an Energy Officer and a couple of them had even a green purchasing officer.

From the point of view of campus greening, the survey revealed that very little was happening in the institutions with regard to energy conservation, waste reduction/re-cycling, water conservation or sustainable landscaping practices. No institution reported on having a sustainable transportation programme. However, the institutions were conscious of the importance of such practices. When asked about their future plans for promoting sustainability on campus, of the 73 institutions surveyed 53 mentioned introduction of energy
conservation initiatives, 48 planned to develop a new strategic plan with a strong sustainability component, and 32 aimed to mount compulsory courses on SD.

4 CONCLUSIONS & RECOMMENDATIONS

There must be at present no less than a thousand higher education institutions in Sub-Saharan Africa, and this survey of only 73 institutions can by no means be regarded as comprehensive. Nevertheless, it does give an indication of sustainability practices in African universities. There is clearly a need for a more in-depth study to fully appreciate the contribution of African universities to SD. This survey seems to indicate that private higher education institutions are not currently committed to promoting SD and yet, private higher education institutions represent a large and rapidly growing sector in Africa.

From the responses obtained, overall, there is some leadership commitment to SD in African universities, and more than half of the respondents are addressing SD issues in a variety of ways through their teaching, research and outreach functions, as well as their operations. However, much more needs to be done. The main barriers identified by the institutions in fully engaging in sustainability are lack of funds, lack of human resources, lack of awareness and information about SD, and inadequate institutional policy on SD. The challenges of funding and human resources apply not just to implementation of SD but to all other basic functions of higher education institutions in Africa. The other issues specific to SD can be addressed in a number of ways.

First, there is need to create a database of positive experiences and practices on SD in African universities so that these can be shared by institutions across the continent. Second, the AAU, at its conferences and leadership programmes, could run short courses for university leaders in order to improve their understanding of SD and how their institutions can promote it.

African higher education institutions appear to need assistance in a few specific areas: how to embed sustainability in their strategic plans; how to mainstream sustainability in their institutional activities, especially in their campus operations; and how to set up an appropriate coordinating unit for SD. Many universities around the world have successfully achieved these objectives and African universities, through partnerships and staff exchanges, can learn from them. Donor and development agencies can assist them in promoting such partnerships
and exchanges. The regional and continental African university associations could also gear their programmes towards assisting their member institutions in these tasks.

After decades of neglect and under-funding, African universities are currently going through a process of revitalisation. As they do so, it is important that they integrate sustainability within their reform.

*****
REFERENCES


⭐⭐⭐⭐⭐