



Introduction

The financing of higher education in SADC reflects trends that are evident in Africa, particularly with respect to enhancing *access and equity* of citizens to higher education. In SADC countries access and equity in higher education are unacceptably low, particularly in terms of gender, location and socio-economic status. Higher education financing policies thus face a twin challenge of access and equity.

A second and related issue concerns the relationship between higher education and development. There needs to be a greater recognition on the part of African policy makers of the growing importance of higher education for development in its broadest terms (that is, economic, environmental and social). Recognition of the increasing importance of higher education in developing countries will lead to greater attention being paid to how higher education can and should be financed.

The terms of reference for this project called for an analysis of the following issues:

- current levels of public funding of higher education with respect to other levels of education and in an international developing country context;
- patterns of state funding – for example research, teaching, student residences, earmarked funding;
- expenditure by programme – the humanities, sciences, etc.;
- equity in public expenditure on higher education;
- the extent of loan and grant financing; and
- the nature and magnitude of private financing of higher education.

Given data limitations, this project was not able to obtain the necessary data to provide any detailed analysis either of types of funding or of programme funding. With respect to private financing of higher education, the chapter describes the nature of private financing, but little data were collected to describe the magnitude of this phenomenon.

In this chapter, Part 1 provides key features of the higher education financing patterns and models in eleven SADC countries: Botswana, Lesotho, Madagascar, Mauritius, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe. It was not possible to gather any information on the other three SADC member countries – Angola, the Democratic Republic of the Congo and Malawi – during the timeframe for this project.

Part 2 draws together the common themes, good practices and possible lessons from the country studies.



Access and equity in African higher education

Obtaining a measure of access and equity is difficult in Africa, partly because it is not always clear what is meant by higher education. In many countries (e.g. Egypt, Botswana) higher or tertiary education implies all post-school or post-secondary education. In South Africa, on the other hand, higher education refers only to university education. In this regard, comparing gross enrolment ratios might be inappropriate. For example, South Africa's gross enrolment ratio for higher education is 15% while Egypt's (encompassing all post-school education) is around 30% and Mauritius (also encompassing all post-school education) is at 34%.

Notwithstanding this definitional problem, it is evident that participation in higher education in Sub-Saharan Africa is low in both absolute and relative terms. Of 23 Sub-Saharan African countries for which data are available, only Mauritius and South Africa have a gross enrolment ratio in double figures. Among these countries, the gross enrolment ratio ranges from 0,4% in Malawi to 15% in South Africa and 34% in Mauritius.

Moreover, participation rates in Sub-Saharan Africa are substantially lower than the average for both developing countries and industrialised/developed countries (Table 1). In addition, the median participation rate for Sub-Saharan Africa is 2,5% compared to the developing country median of 13% and the industrialised country median of 58% (UNESCO, 2008).

Table 1 Participation rates in tertiary education: percentage gross enrolment ratio, weighted average

| Region | 1999 (total) (%) | 1999 (female) (%) | 2005 (total) (%) | 2005 (female) (%) |
|----------------------|---------------------|----------------------|---------------------|----------------------|
| Developed countries | 55 | 60 | 66 | 74 |
| Developing countries | 11 | 10 | 17 | 16 |
| Sub-Saharan Africa | 4 | 3 | 5 | 4 |

Source: UNESCO (2008)

In addition to low participation rates, access to higher education is highly inequitable. There are three important determinants of inequity:

- gender;
- socio-economic status; and
- region.

In almost all Sub-Saharan African countries, with the possible exceptions of Mauritius and South Africa, women have substantially lower participation rates. Table 1 demonstrates some of this inequity, particularly in relation to developed countries, where female participation has exceeded that of males



on average. Moreover, where women have managed to enter higher education in Sub-Saharan African countries, their participation is often concentrated in so called traditional 'women's' disciplines such as the humanities and education, rather than in commerce, engineering and science.

Second, access to higher education is often dependent on socio-economic status. In many Sub-Saharan African countries, enrolment at universities and other higher education institutions is dominated by students from the highest income quintiles. Often, public funding mechanisms act to exacerbate such inequities by providing free higher education to the 'best' students, who invariably come from the wealthiest households.

Third, in almost all Sub-Saharan African countries, participation in higher education is skewed in favour of students from urban and metropolitan areas. Students from rural households face enormous barriers to accessing higher education in general and the higher quality higher education institutions in particular. In summary, these three stratifying factors – gender, socio-economic status and region or location of origin – act to skew the already low participation rate in favour of males, richer families and urban households.

The main barrier to access: poor and inadequate schooling

Access and equity in higher education in Sub-Saharan Africa are fundamentally determined by access to and the quality of secondary education. In the past two decades, most Sub-Saharan African countries have pursued a policy of universal primary education although not all of them have succeeded in this goal. One critical outcome of universal primary education has been the vast increase in primary school leavers seeking secondary education. In countries such as Kenya, Mozambique, Uganda and Tanzania, the capacity to absorb anything more than a small proportion of primary school leavers in the secondary school system is extremely limited. In the light of this limited capacity of public sector secondary schooling, households have had to seek places in a growing fee-paying private system, which is of poor quality in many of the countries reviewed in this chapter. In addition, large numbers of children drop out of schooling after the primary phase, as the gross and net enrolment figures in Table 2 demonstrate. These data reveal that participation rates in secondary education in Sub-Saharan Africa are at best only about half of the developing country average.

In addition, in the richer Sub-Saharan African countries – such as South Africa, where participation rates in secondary education are much higher – there is substantial differentiation in the quality of primary and secondary schools. In these countries, factors such as socio-economic status and region of origin determine access to better quality secondary education and eventually to better quality higher education.



Table 2 Gross enrolment ratio and net enrolment ratio in secondary education – percentage weighted averages, 2005

| Region | Gross enrolment ratio: lower secondary (%) | Gross enrolment ratio: upper secondary (%) | Gross enrolment ratio: total secondary (%) | Net enrolment ratio: total secondary (%) |
|----------------------|--|--|--|--|
| Developed countries | 104 | 99 | 102 | 92 |
| Developing countries | 75 | 46 | 60 | 53 |
| Sub-Saharan Africa | 38 | 24 | 32 | 25 |

Source: UNESCO (2008)

Public commitment to higher education spending

As a percentage of total national income, spending on education by most countries in the Eastern and Southern African region is relatively high in a comparative sense (see Table 3). In fact, in countries such as Kenya, Lesotho and Namibia, public expenditure on education is relatively high.

Table 3 Public expenditure on education as a percentage of gross national income, 1999 to 2004, Eastern and Southern Africa

| Country | Percentage of gross national income |
|----------------------------------|-------------------------------------|
| Angola | 2,8 |
| Botswana | 3,3 |
| Democratic Republic of the Congo | 4,6 |
| Kenya | 6,2 |
| Lesotho | 10,0 |
| Malawi | 4,0 |
| Mauritius | 3,3 |
| Mozambique | 2,4 |
| Namibia | 7,9 |
| South Africa | 5,7 |
| Swaziland | 5,5 |
| Tanzania | 2,2 |
| Uganda | 2,5 |
| Zambia | 1,9 |
| Zimbabwe | 4,7 |
| Africa | 4,8 |
| Developing countries | 4,5 |
| Industrialised countries | 5,5 |

Sources: African countries: OECD, African Outlook (2005-2006)

Other: UNESCO (2008)



However, public spending on higher education as a proportion of the education budget varies substantially between the countries considered in this report, ranging from a low of 10% in Madagascar to 40% in Lesotho.

There are often several reasons for low higher education expenditure. First, there may be inadequate expenditure on education in general, as a percentage of the government's budget. Second, where education expenditure may be considered to be adequate or reasonable, there might be considerable political pressures to ensure that the schooling sector gets the overwhelming share of the public sector's commitment to education. Third, in many developing countries, in a situation of serious resource constraints, there is often keen inter-sectoral competition for financial resources from health, housing, social welfare and other government functions. Finally, the case for increased higher education financing has not been helped by the low prioritisation of this sector by many African governments. The value of higher education for economic growth and broader social and sustainable development has not yet been fully recognised by African governments.

Higher education and development

Higher education policy is becoming increasingly important on national agendas. The widespread recognition that higher education is a major driver of economic competitiveness in an increasingly knowledge-driven global economy has made high quality tertiary education more important than ever before in both industrialised and developing countries.

As the Organisation for Economic Co-operation and Development (OECD) has recently pointed out, tertiary education contributes to social and economic development through four major missions:

- the formation of human capital (primarily through teaching);
- the building of knowledge bases (primarily through research and knowledge development);
- the dissemination and use of knowledge (primarily through interactions with knowledge users); and
- the maintenance of knowledge (inter-generational storage and transmission of knowledge) (OECD, 2008).

The same research report referred to above also points to the changing nature of tertiary education. For most of the 20th century, tertiary education, which was more commonly referred to as higher education, was what happened in universities. This largely covered teaching and learning requiring high-level conceptual and intellectual skills in the humanities, sciences and social sciences, the preparation of students for entry to a limited number of professions such as medicine, engineering and law, and disinterested advanced research and scholarship. These days, tertiary education is much more diversified and encompasses new types of institutions such as polytechnics, university colleges or technological institutes.



These have been created for a number of reasons:

- to develop a closer relationship between tertiary education and the external world, including greater responsiveness to labour market needs;
- to enhance social and geographical access to tertiary education;
- to provide high-level occupational preparation in a more applied and less theoretical way; and
- to accommodate the growing diversity of qualifications and expectations of school graduates (OECD, 2008).

As participation in tertiary education has expanded, tertiary education institutions have assumed responsibility for a far wider range of occupational preparation than in the past. As the result of a combination of the increased knowledge base of many occupations and individual aspirations, not only doctors, engineers and lawyers, but also nurses, accountants, computer programmers, teachers, pharmacists, speech therapists and business managers, now receive their principal occupational qualifications from a tertiary education institution. Furthermore, tertiary education institutions now offer much more than traditional degree-level courses. While the extent of such teaching is not large, many examples can be found of tertiary education institutions that offer adult education and leisure courses, upper secondary courses to prepare students for tertiary-level study and short specific occupational preparation at sub-degree level. In addition, it has become more common for tertiary education institutions not only to engage in teaching and research, but also to provide consultancy services to industry and government and to contribute to national and regional economic and social development (OECD, 2008).

In addition, substantial reforms are taking place in tertiary education systems. Mainly aimed at encouraging institutions to be more responsive to the needs of society and the economy, these reforms have involved a reappraisal of the purposes of tertiary education and the setting, by governments, of new strategies for the future. The reform process has also resulted in institutions gaining more room for manoeuvre, but demands for clearer accountability to society increased in the process. As a consequence, the tertiary education sector is expected to contribute to equity, ensure quality and operate efficiently.

Higher education has only recently come to be regarded as important again. While it was in vogue in the 1950s and 1960s, higher education subsequently fell out of favour. It had no place amongst the various development paradigms of the mid-20th century, from basic needs to rural development to structural adjustment and policy reform. Even when human capital began to garner attention in the 1990s, the focus was on those aspects that directly affected the human capital of the poor, namely primary education and health (Kapur and Crowley, 2008).

It is not helpful that the role of higher education, both in theoretical and policy terms, lacked adequate empirical knowledge of what was happening *within* universities and to the students who spend a considerable part of their prime years in these institutions. While it is clear that there has been substantial



growth in higher education whether measured by the number of students or amounts spent, it is unclear just how meaningful this large growth is. Researchers have found it exceedingly difficult to get a good grip on two critical output measures – how to measure quality in higher education and how to determine the value added by higher education over and beyond the student's innate abilities (Kapur and Crowley, 2008). As Kapur and Crowley show, it is entirely possible that even in systems that are of good quality, the credentialing aspects of higher education benefit the few who have access to it and crowd out from labour markets others who have similar ability, but lack access. The more prevalent formal qualifications, the more pressure to educate oneself. In other words, the upward spiral in education credentialing may not yield social benefits commensurate to the expenditure.

Why higher education?

Stemming from the belief that tertiary education yields lower social returns than other investments, especially primary and secondary education, and therefore should receive fewer public resources, the international development community has neglected tertiary education for a substantial period of time (Schultz, 1998). Investments in tertiary education are often considered regressive, reproducing existing social and economic inequalities. A 1986 World Bank study estimated that social rates of return on higher education in developing countries were on average 13% lower than the returns on basic education (Psacharopoulos, Tan and Jimenez, 1986). A more recent review, looking at 98 countries from 1960 to 1997, found that the typical estimate of the rate of return from primary schooling was 18,9%, while for tertiary education the return was 10,8% (Psacharopoulos and Patrinos, 2002).

While there are some concerns as to whether these calculations reflect marginal ('extra' or additional) or average rates of return, there are also more serious conceptual misgivings. Earnings reflect not only additional education, but also other characteristics, such as innate ability. Wages may not reflect productivity given the degree to which they depend on a host of institutional factors and the nature and structure of labour markets. While the returns on investment in basic education are visible and nearly immediate, the returns on higher education are far more elusive and difficult to measure. Re-evaluations of data suggest that standard estimates of social returns to tertiary education do not accurately reflect the positive public externalities, as they are based on the private returns measured by wage differentials and the social costs associated with education (Birdsall, 1996). A growing body of literature suggests that the conventional estimates of the return on investment in education do not accurately reflect the social value added by tertiary education, including job creation, good economic and political governance, increased entrepreneurship and increased inter-generational mobility (Bloom, Canning and Chan, 2006).

In the context of development, the economic benefits of universities naturally receive the most attention. These range from universities' role in developing a country's skill base to their role in creating codifiable public knowledge, such as publications, journals, books, patents and prototypes. In recent years, the benefits of more direct university-industry partnerships – including contract research, cooperative research, technology licensing, faculty consulting – and access to specialised equipment and incubation services, have been noted. Universities also provide the public space to



host meetings, conferences, centres and mentoring programmes, alumni networks, staff exchanges and visiting committees. All of these are vital to the facilitation of exchange of tacit knowledge and resources between industries and institutions (Lester, 2006).

A broader (than purely economic) rationale for higher education was also well recognised in developing countries. Many of the leaders of developing countries had been educated abroad and were aware of the socialisation effects of higher education producing new nationalist elites (Kapur and Crowley, 2008). They also recognised that technological weaknesses had contributed to colonisation in the first place and they believed that building higher education institutions was important to foster the technological capabilities that would hedge against history repeating itself. Higher education was considered essential for developing the capabilities for 'self-reliance'. Since most newly independent developing countries were largely agrarian, nowhere was the need for domestic technical capabilities more apparent than in agriculture.

Economic historians have long recognised that increasing agricultural productivity is vital to improve living standards in almost any poor country. An important reason why the green revolution was far more successful in Asia than in Africa was the greater domestic technological capabilities in the former region. These were developed through local agricultural universities and research centres that could adapt the new green revolution technologies to local conditions. Thus, in the absence of domestic skills, even global public goods (embodied in this case in the green revolution technologies) have very limited payoffs. Today, poor developing countries face even worse odds (Kapur and Crowley, 2008).

Higher education and economic growth

Higher education is an important form of investment in human capital development. In fact, it can be regarded as a high level or a specialised form of human capital, and its contribution to economic growth is very significant. The contribution of higher education to development can be varied:

- It contributes to the rapid industrialisation of the economy by providing individuals with professional, technical and managerial skills.
- In the current context of transformation of nations into knowledge economies and knowledge societies, higher education not only provides educated workers, but also knowledge workers who stimulate the growth of the economy.
- It creates attitudes and makes possible attitudinal changes necessary for the socialisation of the individual and the modernisation and overall transformation of societies.
- Fourth, and probably most important, higher education facilitates, through teaching and research, the creation, absorption and dissemination of knowledge.
- Higher education also contributes to the formation of a strong nation state, and at the same time promotes globalisation.
- Lastly, higher education allows people to enjoy an enhanced 'life of mind', thus offering the wider society both cultural and political benefits.



What is the effect of higher education on economic growth? There is a general presumption that higher education is not necessary for economic growth and development, particularly in developing countries. It is argued that it is literacy and primary education, rather than higher education, that are important.

As described earlier, estimates of the rate of return also contributed to strengthening such a presumption. Conventionally the contribution of education to economic development is analysed in terms of education earnings relationships and more conveniently in the form of rates of return, which act as a summary statistic of the relationship between lifetime earnings and the costs of education. Again, as pointed out briefly earlier, available estimates on rates of return show that the social rates of return on investment in primary education are the highest, followed by secondary education. The returns on investment in higher education are the least. The pattern is more or less true in general with respect to private rates of return. Such evidence is extensively used to discourage public investment in higher education in favour of primary education. Though the rate of return on investment in higher education is lower than that of primary education, it should nevertheless be noted that higher education *does* yield an attractive rate of return in society (above 10%) and to the individual as well (19%). (Note: private rates of return refer to the net benefits to the individual of education as opposed to social rates of return which refer to the net benefits to society of investing in education.)

The rate of return estimates in Table 4 are regional averages. There are wide variations in the rates of return between several countries. But on the whole, they show that:

- investment in higher education yields positive rates of return to the individual and also to the society at large;
- in several countries social rates of return are high, above 10%, which can be considered as an alternative rate of return; and
- rates of return seem to have increased over the years in some countries.

Generally, declining rates of return over time are often expected, but this is not necessarily the case in all countries. For example, in some Asian countries, the rate of return is increasing. This may be due to the rapid increase in the demand for higher educated personnel.

Table 4 Returns on investment in higher education

| Region | Social | Private |
|----------------------------------|--------|---------|
| Asia* | 11,0 | 18,2 |
| Europe*/Middle East/North Africa | 9,9 | 18,8 |
| Latin America/Caribbean | 12,3 | 19,5 |
| OECD | 8,5 | 11,6 |
| Sub-Saharan Africa | 11,3 | 27,8 |
| World average | 10,3 | 19,0 |

Source: Psacharopoulos and Patrinos (2002)

* Some countries in these regions are not members of the OECD



The contribution of higher education to economic development can be measured with the help of a production function or even a simple regression equation. Using the gross enrolment ratio and higher educational attainment as higher education variables, Tilak (2003) has shown that both can be expected to have a positive effect on the level of economic development as measured by gross domestic product per capita.

Higher education and technological absorption

Rapidly changing technology makes a significant difference to the economic growth of nations. The United Nations Development Programme (UNDP) (2001) developed a technology achievement index, based on the degree of creation of technology in a given economy, the extent of diffusion of old and recent innovations, and human skills. It is clear from this index that the level of achievement in technology strongly depends on the level of higher education in a given economy. After all, higher education and research contribute to the development of new technology and to innovations and their diffusion. So one can expect higher education to have a profound effect on the development of technology in any society. In fact, the level of achievement in technology may be a close indicator of economic growth itself. Most countries with high enrolment ratios in higher education have become 'leaders' in technology, with high levels of achievement in technology, as shown in Table 5. The converse is also true: a large number of countries with low enrolment ratios (say less than 10%) are 'marginalised' in the area of technology. Those with medium enrolment ratios (nearly 20%), such as Singapore and Hong Kong, have indeed become 'potential leaders' in technology (Table 5).

Table 5 Higher education (gross enrolment ratio) and technology (technology achievement index)

| Gross enrolment ratio | High technology achievement index (>0,5) | Medium technology achievement index (0,4-0,5) | Low technology achievement index (<0,4) |
|-----------------------|--|---|---|
| High (>20) | New Zealand, Korea, Australia, Israel, Japan | | Philippines |
| Medium (11-20) | Singapore | Hong Kong | Thailand, Cyprus, Syria |
| Low (<10) | | | Iran, Indonesia, Malaysia, India, Sri Lanka, Nepal, China, Pakistan |

Source: Based on UNDP (2001) and UNESCO (1999)

The UNDP (2001) classifies countries such as the Philippines and Thailand, which have medium and high levels of enrolment, as 'dynamic leaders'. The remainder, countries that did not successfully expand their higher education systems, are indeed 'marginalised'. Not one of the 'low enrolment ratio' countries (countries with less than 10% enrolment in higher education) has achieved high or medium levels of achievement on the technology index.



The relationship between higher education and technology can be shown statistically as well. The simple coefficient of correlation between enrolment ratio in higher education and the technology achievement index in Asian and Pacific countries is as high as 0,8 and that between technology and higher education attainment is 0,65. Though the number of observations is small, the simple regression equations show a very strong and statistically significant effect of higher education on a country's level of achievement in the field of technology.

