CASE STUDY: Uganda and Makerere University

Tracy Bailey, Nico Cloete and Pundy Pillay
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| Network | Higher Education Research and Advocacy Network in Africa (HERANA)  


### Acronyms and abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>BTVEET</td>
<td>Business, Technical and Vocational Education Training</td>
</tr>
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<td>CHET</td>
<td>Centre for Higher Education Transformation</td>
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<tr>
<td>COBES</td>
<td>Community-Based Education and Service</td>
</tr>
<tr>
<td>FTE</td>
<td>Full-time equivalent</td>
</tr>
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<td>GCI</td>
<td>Global Competitiveness Index</td>
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<tr>
<td>GDP</td>
<td>Gross domestic product</td>
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<tr>
<td>GER</td>
<td>Gross enrolment ratio</td>
</tr>
<tr>
<td>GII</td>
<td>Global Competitiveness Index</td>
</tr>
<tr>
<td>HDI</td>
<td>Human Development Index</td>
</tr>
<tr>
<td>HERANA</td>
<td>Higher Education Research and Advocacy Network in Africa</td>
</tr>
<tr>
<td>I@MAK</td>
<td>Innovation at Makerere programme</td>
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<tr>
<td>LVEMP</td>
<td>Lake Victoria Environmental Management Project</td>
</tr>
<tr>
<td>MFPED</td>
<td>Ministry of Finance, Planning and Economic Development</td>
</tr>
<tr>
<td>MoES</td>
<td>Ministry of Education and Sports</td>
</tr>
<tr>
<td>NCHE</td>
<td>National Council for Higher Education</td>
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<tr>
<td>NDP</td>
<td>National Development Plan</td>
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<tr>
<td>NGO</td>
<td>Non-governmental organisation</td>
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<tr>
<td>PEAP</td>
<td>Poverty Eradication Action Plan</td>
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<tr>
<td>PPP</td>
<td>Purchasing power parity</td>
</tr>
<tr>
<td>R</td>
<td>South African Rand</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research and development</td>
</tr>
<tr>
<td>SET</td>
<td>Science, engineering and technology</td>
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<tr>
<td>SME</td>
<td>Small and medium enterprises</td>
</tr>
<tr>
<td>TZS</td>
<td>Tanzanian Shilling</td>
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<tr>
<td>UGT</td>
<td>Uganda Gatsby Trust</td>
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<tr>
<td>USD</td>
<td>United States Dollar</td>
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<td>USh</td>
<td>Ugandan Shilling</td>
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<tr>
<td>WEF</td>
<td>World Economic Forum</td>
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Glossary of terms

**Academic core**

The academic core refers to a university’s academic degree programmes and research activities.

**Gini co-efficient**

The Gini co-efficient is a standard economic measure of income inequality, based on the Lorenz Curve. It ranges from zero (which indicates perfect equality, with every household earning exactly the same), to one (which implies absolute inequality, with a single household earning a country’s entire income).

**Global Competitiveness Index (GCI)**

The World Economic Forum (WEF) defines competitiveness as the set of institutions, policies, and factors that determine the level of productivity of a country. The GCI uses this definition to establish a quantitative tool to help policy-makers benchmark and measure the competitiveness of a given country. The GCI is based on 12 pillars of competitiveness further divided into three pillar groups, which are:

- Basic requirements (institutions, infrastructure, macro-economic stability, health and primary education);
- Efficiency enhancers (higher education and training, goods market efficiency, labour market efficiency, financial market sophistication, technological readiness, market size); and
- Innovation and sophistication factors (business sophistication, innovation).

**Global Innovation Index (GII)**

The GII assesses in detail the extent to which different economies benefit from the latest innovation advances, based on three main principles:

- There is a distinction between enablers (inputs) and outputs while measuring innovation in an economy. Enablers are aspects that help an economy to stimulate innovation and outputs are the results of innovative activities within the economy.
- There are five enabler pillars that are included in the GII: institutions, human capacity, general and information and communications technology
infrastructure, market sophistication, and business sophistication. The enabler pillars define aspects of the conducive environment required to stimulate innovation within an economy.

- The two output pillars which provide evidence of the results of innovation within the economy are scientific outputs and well-being.

**Gross domestic product (GDP)**

The GDP is the total market value of all final goods and services produced in a country in a given year, which equals total consumers, investment and government spending, plus the value of exports, minus the value of imports. Changes in the GDP on an annual basis provide a measure of economic growth.

**Gross enrolment ratio (GER)**

The GER indicates the total enrolment in a specific level of education, regardless of age, expressed as a percentage of the official school-age population, corresponding to the same level of education in a given school year. The GER is calculated by dividing the number of pupils (or students) enrolled in a given level of education, regardless of age, by the population of the age group which officially corresponds to the given level of education, and multiplying the result by 100. The GER is widely used to show the general level of participation in a given level of education. It indicates the capacity of the education system for enrolling students of a particular age group. It is used as a substitute indicator to Net Enrolment Ratio (NER, outlined below) when data on enrolment by single years of age are not available. The GER can also be a complementary indicator to the NER by indicating the extent of over-aged and under-aged enrolment.

**Human Development Index (HDI)**

The HDI is a summary composite index that measures a country's average achievements in three basic aspects of human development. These include the following:

- Health (measured by life expectancy at birth);
- Knowledge (measured by a combination of the adult literacy rate and the combined primary, secondary, and tertiary GER); and
- A decent standard of living (measured by GDP (income) per capita).

The HDI was created to emphasise that people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth.
Pact

A ‘pact’ is defined by Gornitzka et al. (2007: 184) as “a fairly long-term cultural commitment to and from the University, as an institution with its own foundational rules of appropriate practices, causal and normative beliefs, and resources, yet validated by the political and social system in which the University is embedded. A pact, then, is different from a contract based on continuous strategic calculation of expected value by public authorities, organised external groups, university employees, and students – all regularly monitoring and assessing the University on the basis of its usefulness for their self-interest, and acting accordingly.”

Purchasing power parity (PPP)

The PPP is a rate of exchange that accounts for price differences across countries, allowing international comparisons of real output and incomes. At the PPP$ rate used in this report, PPP$ has the same purchasing power in the domestic economy as USD 1 has in the US.
Higher Education and Economic Development Publications

The eight case study reports in this series contain the detailed data and analysis for each country and university in the sample. Together, they form the empirical basis for the analysis and discussion of findings contained in the CHET book, *Universities and Economic Development in Africa*, which was published in August 2011. While every effort has been made to check the data and edit the text in the time available, it should be noted that these case study reports have not been subjected to the publishing rigours of formally published publications. They are therefore made available ‘as is’.

*Higher education and economic development: A literature review*

Pundy Pillay (2010)

This report reviews the international literature on the relationship between higher education and economic development. The review focuses on previous research and theory on the link between higher education and economic growth, the knowledge economy, innovation, and local and regional development. The review would be of interest to academics and students who work in the field of higher education studies.

[Click here to download a copy of this report.](#)

*Linking higher education and economic development: Implications for Africa from three successful systems*

Pundy Pillay (2010)

This book synthesises the findings of case studies of three systems – Finland, South Korea and North Carolina in the US – that have successfully linked higher education to their economic development initiatives. This publication would be of particular interest to policy-makers and funders.

[Click here to download a copy of this report.](#)

*Universities and economic development in Africa*

Nico Cloete, Tracy Bailey, Pundy Pillay, Ian Bunting and Peter Maassen (2011)

This report presents the key findings from each of the eight African case study reports and synthesises these within the analytical framework of the larger study. This publication would be of interest to national policy-makers, international agencies, funders and university leadership.

[Click here to download a copy of this report.](#)
Part 1

Introduction

AT A GLANCE

- Overview of HERANA
- Project focus and process
- Analytical framework
- Data collection
- Focus and structure of the report

1.1 Introduction to the Higher Education and Economic Development project

1.1.1 Overview of HERANA

The Higher Education and Economic Development project forms part of the work of the Higher Education Research and Advocacy Network in Africa (HERANA). HERANA was established in 2007 and is coordinated by the Centre for Higher Education Transformation (CHET) in Cape Town, South Africa. Key partners include the University of the Western Cape (South Africa), Makerere University (Uganda) and the University of Oslo (Norway).

The research component of HERANA investigates the complex relationship between higher education and development in Africa, with a specific focus on economic and democratic development. A second research area explores the use of research in policy-making. Alongside the research component is an advocacy strategy that aims to:

- Disseminate the findings of the research projects;
- Coordinate existing sources of information on higher education in Africa;
- Develop a media strategy; and
- Put in place a policy dialogue (through seminars and information technology) facilitating interactions between researchers, institutional leaders and decision-makers.

The capacity-building component of HERANA is the Higher Education Masters in Africa Programme, run jointly between the key partners. The main objective of the project is to contribute to the strengthening of higher education in Africa through building capacity and expertise in African higher education. The students contribute to higher education and development research through the research components of the programme.
The research and advocacy components of HERANA are funded by the Carnegie Corporation of New York, the Ford Foundation, the Rockefeller Foundation and the Kresge Foundation. The Higher Education Masters in Africa Programme is funded by NORAD.

1.1.2 Project focus and process

As a point of departure, the overall aim of the project was to investigate the complex relationships between higher education (specifically universities) and economic development in selected African countries with a focus on the context in which universities operate (political and socio-economic), the internal structure and dynamics of the universities themselves, and the interaction between the national and institutional contexts. In addition, the project aimed to identify those factors (practices, strategies) and conditions (context) – at both national and institutional levels – that facilitate or inhibit universities’ ability to make a sustained contribution to economic development.

The project began with a review of the international literature on the relationship between higher education and economic development (Pillay 2010a). This was followed by case studies of three systems which have successfully linked their economic development and higher education policy and planning – Finland, South Korea and the North Carolina state in the US (Pillay 2010b).

The next phase of the project involved the collection of data at both the national and institutional levels in the eight African countries and universities included in the study:

- Botswana – University of Botswana
- Ghana – University of Ghana
- Kenya – University of Nairobi
- Mauritius – University of Mauritius
- Mozambique – Eduardo Mondlane University
- South Africa – Nelson Mandela Metropolitan University
- Tanzania – University of Dar es Salaam
- Uganda – Makerere University

The countries included in the study were selected for three main reasons: on the basis of previous collaboration; being located in sub-Saharan Africa; and, on the basis of World Economic Forum (WEF) ratings regarding participation in the knowledge economy in the African context. In each of the collaborating countries the national university was selected, except in South Africa where the Nelson Mandela Metropolitan University was regarded as a more ‘comparable’ institution.
Semi-structured interviews were conducted with a wide range of individuals in each country, including selected ministries, commissions/councils for higher education and other stakeholders at the national level; and, institutional leadership, heads of development-related projects and centres, and academic and administrative staff. The analysis also draws on various policy and strategy documents (national and institutional levels), as well as quantitative data including national development indicators and statistics relating to the higher education systems and universities in the sample.

Throughout the project process, dissemination and advocacy activities have taken place. These have included seminars in many of the African countries in the sample and in Norway, as well as dissemination via the HERANA web site1.

1.1.3 The analytical framework for the study

In the knowledge economy, universities are considered to be key institutions for the production of high-level skills and knowledge innovation, based on the traditional core business of universities – the production, application and dissemination of knowledge.

In many countries, higher education has become one of the central areas in the government’s knowledge policies. This means that more policy/political actors than the Ministry of Education, as well as socio-economic stakeholders (employers’ organisations, funders and research councils), have become interested in higher education and involved in higher education policy. This raises the issue of system- and institutional-level coordination of knowledge policies with adequate structures and processes within the political system, most notably the capacity to coordinate different political activities of the governing of knowledge production, reproduction and coordination.

As mentioned earlier, to get a better understanding of the relationship between higher education and development, the research group undertook three case studies (Finland, South Korea and North Carolina state) where there is a well-established integration of higher education in national development strategies. Of particular interest to our study was to answer the question: What is it about these three systems that enable them to successfully link higher education to economic development? Put another way: What are the core conditions that are present in each of the three systems that enable their higher education sectors to successfully and sustainably contribute to development?

Common to all three systems was a strong, agreed upon framework for economic development aimed at realising an advanced, competitive knowledge economy, and the important role for higher education in this regard. Despite

major contextual differences, the three systems exhibited the following conditions for harnessing higher education for economic development:

- Their higher education systems had been built on a foundation of equitable and quality schooling. There was also an emphasis on achieving high quality higher education.
- They had achieved very high higher education participation rates.
- Their higher education systems were differentiated (institutional and public/private) as part of achieving their human capital, research and innovation objectives for economic development.
- Their governments ensured a close link between economic and (higher) education planning.
- There were effective partnerships and networks between the state, higher education institutions and the private sector to ensure effective education and training, and to stimulate appropriate research and innovation.
- There was strong state involvement in a number of other respects including, for example, adequate state funding for higher education; using funding to steer the higher education sector to respond to labour market requirements; and incentivising research and innovation in the higher education sector.

Drawing on the review of literature (Pillay 2010a), the implications from the case studies of three successful systems (Pillay 2010b), and preliminary observations from the eight African case studies, we formulated the following analytical propositions:

1. A condition for universities’ contributions to development is the existence of a broad pact between government, universities and core socio-economic actors about the nature of the universities’ role in development.
2. As a core knowledge institution, the university can only participate in the global knowledge economy and make a sustainable contribution to development if its academic core is quantitatively and qualitatively strong.
3. For linking universities effectively to development a country needs various forms and methods of knowledge policy coordination. In addition, the connections between the larger policy context, universities and development are crucial.

The analytical point of departure for our model is, therefore, that the conditions under which each university in Africa, as elsewhere, is contributing to economic development are influenced by the following three inter-related factors:

- The nature of the pact between the universities, political authorities and society at large;
- The nature, size and continuity of the university’s academic core; and
The level of coordination, the effectiveness of implementation, and connectedness in the larger policy context of universities.

These, in turn, are influenced by local circumstances, for example, the nature of the economy of a country, and its political and governance traditions and culture; institutional characteristics, including the ‘loosely-coupled’ nature of higher education institutions; and, the external relations of universities, especially with national authorities, foreign agencies and industry.

These analytical propositions give rise to the following sets of research questions:

- To what extent is there agreement (a pact) between key stakeholders about the role of higher education, and to what extent does this include a specific role for higher education in economic development? Is there a role for knowledge production and for universities in the national development plan?
- What policies, funding, structures and incentives are in place at the national and institutional levels which give expression to the role of higher education in economic development? To what extent is there coordination of these activities between the different national authorities, and between the national authorities, institutional stakeholders and external agencies?
- What is the strength of the academic cores of the national (‘flagship’) universities?
- Are development activities in the universities connected to external groupings and do these activities strengthen or weaken the academic core?

This report presents the data that address these questions in the Ugandan context generally, and with specific reference to the Makerere University. The analytical framework of the study is elaborated further in Part 6 which discusses the key findings for this case study.

1.1.4 What the project is not doing

As can been seen from the analytical framework of the project, this study has a considerable scope. However, the project is not attempting to do the following:

- Measure or evaluate the extent to which universities are contributing to development, or the impact that their activities have on development in their respective countries;
- Include an assessment of the impact or effectiveness of specific institutional policies, units or development projects;
- Review the number or nature of donor projects, or an examination of the overall contribution of particular external donors to university development; or,
- Assume or assert that the primary role for higher education is development, but rather seeks to investigate the factors that either facilitate or inhibit the possible contributions that universities can make to development.
1.2 Data collection for the Uganda case study

A wide range of data sources have been consulted for the purposes of developing this case study. In order to prepare for the research team’s visit to Uganda, CHET obtained a letter of cooperation from the vice-chancellor of Makerere University, who also approved the selection of Ms Florence Nakayiwa-Mayega (Department of Planning and Development) as our Institutional Contact and Facilitator. The next step was to request background information on the Uganda higher education system and the university from Ms Nakayiwa-Mayega. In addition to the background information, Ms Nakayiwa-Mayega was asked to assist in the scheduling of interviews for the research team and, together with the relevant institutional leadership, to identify five to ten projects that related to either economic development or poverty reduction.

The research team visited Uganda in May 2009 to conduct interviews with national and institutional stakeholders. National stakeholders included representatives from the Ministry of Finance, Planning and Economic Development, the Ministry of Education and Sports (MoES), and the National Council for Higher Education (NCHE). Institutional stakeholders at Makerere included various institutional leaders, senior academics and project leaders. The full list of interviewees is provided in Appendix 1.

In addition to the site visit and interviews, a range of national and institutional documents has been consulted. These are listed in the list of sources. In developing the case study report, additional information was gleaned from the internet as well as further correspondence with interviewees to verify information and fill in gaps.

Finally, during July and August of 2010, the first draft of this report was emailed to the vice-chancellor, the project leaders and other key institutional stakeholders at Makerere with a request to provide written feedback on the accuracy of the information and interpretation of data contained in the report. In addition to the written feedback received from a number of individuals, formal feedback was obtained from two university representatives during a seminar in Franschhoek, Cape Town, in August 2010.

1.3 The focus and structure of this report

This report pulls together a wide range of data on the national development context and the higher education system in Uganda, as well as Makerere University, in order to address the key research questions. The structure of the remainder of the report is as follows:

In Part 2, we provide background and contextual information about Uganda – its economic development and global competitiveness ratings, its approach to
economic development policy and planning, as well as the size and shape, governance, policy and financing of the higher education system. A brief profile of Makerere is also provided including key moments in the development of the institution, its governance structure and strategic objectives, and the institutional finances.

In Part 3 of the report, we turn to the role(s) of higher education in Uganda – in general, and in relation to economic development – through an investigation of the ways in which both national and institutional stakeholders talk about and conceptualise the role of higher education, the policies which give expression to these notions, as well as the structures and mechanisms for coordination which relate to higher education.

In Part 4 we examine the nature of the academic core at Makerere.

In Part 5, we investigate Makerere’s engagement with its key external stakeholders and the incentives for development-related activities. We also undertake an analysis of the selected development projects at the university, with a specific focus on the connectedness between these activities and the academic core. In particular, we explore the articulation of development activities with national priorities and institutional objectives, as well as with external stakeholders, and the extent to which these activities either strengthen or weaken the academic core of the institution.

In Part 6, we provide a summary of the key findings of the report and relate these to the analytical framework and key questions of the study presented in Part 1. This includes a discussion of the nature and extent of the pact around the role of higher education in Uganda; the nature and strength of the academic core of Makerere; the coordination and implementation of knowledge policies at the national level; and the connectedness of development-related activities in the university to external stakeholders and to the academic core.
Part 2

The Uganda case study: Background and context

2.1 The Uganda economy and approach to economic development

2.1.1 Economic development, competitiveness and innovation

Uganda’s population in 2005 was just under 29 million. Its GDP per capita (income per head of the population) in 2005 was USD 303 (compared to Kenya’s USD 760, Tanzania USD 316 and Mozambique USD 335). In purchasing power parity terms (that is, adjusted to take account of what USD 1 will be able to buy in various countries), it was USD 1 454 in 2005 (Kenya USD 2 083, Tanzania USD 744 and Mozambique USD 1 242). Growth of GDP per capita between 1990 and 2005 averaged 3.2 % per annum (UNDP 2007).

Uganda’s Human Development Index (HDI – computed as an average of a country’s adult literacy rate, life expectancy, and GDP per capita, in other words encapsulating both social and economic indicators) was 154 out of 177 countries in 2005 (Kenya ranked at 148 and Tanzania at 159). Specific HDI indicators were as follows: a) Life expectancy (2005): 49.7 years; b) Adult literacy (1995-2005): 66.8%; and c) Combined GER for primary, secondary, and tertiary education (2005): 63.0%. Uganda is thus characterised as a “low human development” country (ibid.).

Table 2.1 compares GDP (or income) per capita and the HDI for the HERANA sample of countries and the three international case studies. The difference between the GDP per capita ranking and its HDI ranking reflects divergence between economic and broader social development, and is often a consequence of inequality in access to income, education, health, etc. For example, South Africa’s HDI ranking is 51 places lower than its GDP per capita ranking, and Botswana’s is 65 – these figures are amongst the highest for the countries ranked in this report.
### Table 2.1: GDP per capita vs. Human Development Index in sub-Saharan Africa (2007)

<table>
<thead>
<tr>
<th>Country</th>
<th>GDP per capita (PPP, USD)*</th>
<th>GDP ranking</th>
<th>HDI ranking**</th>
<th>GDP ranking minus HDI ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Botswana</td>
<td>13 604</td>
<td>60</td>
<td>125</td>
<td>-65</td>
</tr>
<tr>
<td>Ghana</td>
<td>1 334</td>
<td>153</td>
<td>152</td>
<td>1</td>
</tr>
<tr>
<td>Kenya</td>
<td>1 542</td>
<td>149</td>
<td>147</td>
<td>2</td>
</tr>
<tr>
<td>Mauritius</td>
<td>11 296</td>
<td>68</td>
<td>81</td>
<td>-13</td>
</tr>
<tr>
<td>Mozambique</td>
<td>802</td>
<td>169</td>
<td>172</td>
<td>-3</td>
</tr>
<tr>
<td>South Africa</td>
<td>9 757</td>
<td>78</td>
<td>129</td>
<td>-51</td>
</tr>
<tr>
<td>Uganda</td>
<td>1 059</td>
<td>163</td>
<td>157</td>
<td>6</td>
</tr>
<tr>
<td>Tanzania</td>
<td>1 208</td>
<td>157</td>
<td>151</td>
<td>6</td>
</tr>
<tr>
<td>Finland</td>
<td>34 526</td>
<td>23</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td>South Korea</td>
<td>24 801</td>
<td>35</td>
<td>26</td>
<td>9</td>
</tr>
<tr>
<td>United States</td>
<td>45 592</td>
<td>9</td>
<td>13</td>
<td>-4</td>
</tr>
</tbody>
</table>

**Source:** UNDP (2009)

**Notes:**
*PPP shows a rate of exchange that accounts for price differences across countries, allowing international comparisons of output and incomes. At the PPP$ rate shown in Table 2.1 for the eight HERANA countries, PPP$ 1 has the same purchasing power in the domestic economy as USD 1 has in the US.

**177 countries were ranked. The HDI is a composite index measuring deprivations in the three basic dimensions – a long and healthy life (as measured by life expectancy), access to knowledge (adult literacy, and combined primary, secondary and tertiary education enrolment), and a decent standard of living (GDP or income per capita).*

Poverty measures suggest that between 1990 and 2005, the population living below USD 2 a day averaged just under 38%. In terms of inequality, Uganda, with a Gini coefficient of 0.457, is ‘less equal’ than both Tanzania (0.346) and Kenya (0.425) (UNDP 2009).

Uganda has achieved a relatively high growth rate during the past decade (e.g. on average, the economy grew by 5.5% per annum between 2000 and 2007). Income per capita has risen by more than 3% per annum and there has been a significant reduction in absolute poverty levels as measured by the World Bank’s USD 2 a day measure. However, Uganda remains in a state of underdevelopment with economic activity still dominated by primary sector activities (mainly agriculture) and basic manufacturing. The country fares poorly on all economic and social indicators. In particular, education remains seriously underdeveloped at all levels.

Between 1987 and 1996, GDP grew at an average of 6.5%, translating into a 3.4% growth in per capita terms. There has been impressive growth in the late
1990s and 2000s, with an average rate of growth in GDP of 7.2% per annum between 1997/98 and 2000/01. The growth rate slowed to 6.8% between 2000/01 and 2003/04, but increased to 8% over the period 2004/05 to 2007/08 (Government of Uganda 2010: 1).

The impressive GDP growth performance in recent years has contributed to a significant reduction in poverty levels. The percentage of the population living below the poverty line declined from 56% in 1992/93 to 44% in 1997/98 and further to 31% in 2005/06 (ibid.).

However, in spite of this commendable economic performance in terms of growth, the country continues to face some challenges which have undermined achieving much faster economic growth and socio-economic transformation. The country has not achieved significant productivity growth in agriculture and has thus not witnessed sufficient release of excess labour from this sector (ibid.: 2). This has been because of the presence of particular structural bottlenecks in the economy that include the following (ibid.):

- Dominance of primary commodities over industrial products implying that the rapidly growing new sectors are not contributing significantly to value-added exports and are therefore, not outwardly oriented enough to penetrate global markets with high value products;
- Slower than desirable growth in the agricultural and industrial sectors;
- New sectors that are not absorbing the rapidly growing labour force;
- Capital markets that are not effectively intermediating capital; and
- Slow accumulation of core production infrastructure such as energy and transport.

Growth in GDP has been accompanied by changes in its broad sectoral composition. Between 2000/01 and 2008/09, the share of agriculture in GDP fell rapidly while that of industry registered notable growth before converging with the share of agriculture at about 23% (ibid.: 11).

While there have been changes in the sectoral composition of GDP, there has not been a commensurate change in the distribution pattern of the labour force. The GDP share of the emerging modern sectors is increasing but their share of the labour force is falling. The share of the labour force employed in the manufacturing and services sectors decreased from 6.8% and 26.8% to 4.2% and 20.7%, respectively, despite the rise in GDP shares of these sectors. However, the share of the labour force engaged in the agriculture sector increased from 66.4% in 2002/03 to 75.1% in 2005/06 while the share of agriculture GDP declined over the same period. This may be attributed to a variety of factors including: a mismatch between skills acquired and the requirements of employers; the development of low skilled services and industries; the high rate of growth in the labour force and the inability to absorb it in the growing sectors. These trends contribute to low productivity in
agriculture which undermines the growth potential of the economy and contributes to issues related to food security (ibid.: 12).

In terms of the WEF’s (2010) _Global Competitiveness Index_ (GCI, 2010-11), Uganda is ranked at 118 out of 139 countries. According to the WEF, Uganda is a ‘Stage 1 (factor-driven)’ economy.

Table 2.2 provides data on quality of the education system, gross tertiary education enrolment rates and global competitiveness, as well as the stage of development of each country’s economy. It shows this data both for the HERANA countries as well as the three international case studies. The latter group has tertiary education participation rates and are all ‘innovation-driven’ economies. Amongst the HERANA countries, there is a strong correlation between tertiary education participation and global competitiveness, on the one hand, and the stage of economic development on the other. The countries fall into two groups. One group (Botswana, Mauritius and South Africa) has relatively high GDP per capita (Table 2.1) and tertiary education participation with Mauritius and South Africa classified as ‘efficiency-driven’ and Botswana in transition to this group. The other group, comprising the five other sample countries, has relatively low GDP per capita and tertiary education participation, and is classified as ‘factor driven’. The countries in this latter group are also ranked relatively low in terms of global competitiveness.
Table 2.2: Selected higher education and economic development indicators

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghana</td>
<td>Stage 1: Factor-driven</td>
<td>71</td>
<td>6.2&lt;sup&gt;5&lt;/sup&gt;</td>
<td>114</td>
</tr>
<tr>
<td>Kenya</td>
<td></td>
<td>32</td>
<td>4.1&lt;sup&gt;6&lt;/sup&gt;</td>
<td>106</td>
</tr>
<tr>
<td>Mozambique</td>
<td></td>
<td>81</td>
<td>1.5&lt;sup&gt;3&lt;/sup&gt;</td>
<td>131</td>
</tr>
<tr>
<td>Tanzania</td>
<td></td>
<td>99</td>
<td>1.5&lt;sup&gt;5&lt;/sup&gt;</td>
<td>113</td>
</tr>
<tr>
<td>Uganda</td>
<td></td>
<td>72</td>
<td>3.7</td>
<td>118</td>
</tr>
<tr>
<td>Botswana</td>
<td>Transition from 1 to 2</td>
<td>48</td>
<td>7.6&lt;sup&gt;4&lt;/sup&gt;</td>
<td>76</td>
</tr>
<tr>
<td>Mauritius</td>
<td>Stage 2: Efficiency-driven</td>
<td>50</td>
<td>25.9</td>
<td>55</td>
</tr>
<tr>
<td>South Africa</td>
<td></td>
<td>130</td>
<td>15.4&lt;sup&gt;4&lt;/sup&gt;</td>
<td>54</td>
</tr>
<tr>
<td>Finland</td>
<td>Stage 3: Innovation-driven</td>
<td>6</td>
<td>94.4</td>
<td>7</td>
</tr>
<tr>
<td>South Korea</td>
<td></td>
<td>57</td>
<td>98.1</td>
<td>22</td>
</tr>
<tr>
<td>United States</td>
<td></td>
<td>26</td>
<td>82.9</td>
<td>4</td>
</tr>
</tbody>
</table>

Sources: WEF (2010)

Notes:
1 Income thresholds (GDP per capita in USD) for establishing stages of development (WEF 2010: 10): Stage 1 Factor-driven: <2 000; Transition from stage 1 to stage 2: 2 000-3 000; Stage 2 Efficiency-driven: 3 000-9 000; Transition from stage 2 to stage 3: 9 000-17 000; Stage 3 Innovation-driven: >17 000.
2 Ranked out of 139 countries.
3 2005 figure.
4 2006 figure. The 2010 figure by the Botswana Tertiary Education Council is over 20% while in South Africa the figure remained around 16%.
5 2007 figure.
6 2009 figure.

Of the 12 pillars of competitiveness that the WEF uses in the derivation of the GCI, two are particularly relevant for the purposes of this study: a) the ‘efficiency-enhancing’ 5th pillar, higher education and training, and b) one of the ‘innovation and sophistication’ factors, namely innovation. With regard to higher education and training, Uganda fares poorly at 123 out of 133 countries compared to its overall ranking of 108 but on innovation it ranks comparatively high at 98.

The Global Innovation Index (GII) assesses in detail the extent to which different economies benefit from the latest innovation advances, based on three main principles:

- There is a distinction between enablers (inputs) and outputs while measuring innovation in an economy. Enablers are aspects that help an economy to
stimulate innovation and outputs are the results of innovative activities within the economy.

- There are five enabler pillars that are included in the GII: Institutions, Human Capacity, General and Information and Communication Technology Infrastructure, Market Sophistication and Business Sophistication. The enabler pillars define aspects of the “conducive environment required to stimulate innovation within an economy”.

- There are two output pillars which provide evidence of the results of innovation within the economy: Scientific Outputs and Well-Being.

The scientific outputs include knowledge creation (e.g. patents, publications), knowledge application (e.g. industry value-added, production process sophistication, employment in knowledge-intensive services).

Amongst the innovation inputs or enablers, ‘human capacity’ is measured by investment in education; and the quality of educational institutions.

In the 2009/10 GII, Uganda is ranked at 108 out of 132 countries (compared to 98 for Tanzania, and 103 for Kenya). In terms of innovation inputs, Uganda ranks at 102 (Tanzania 101; Kenya 65). In terms of innovation outputs Uganda is ranked at 104 (above Kenya at 117 but below Tanzania at 91).

Table 2.3 compares the GCI and GII for the eight HERANA countries. This shows that Uganda ranks sixth (above Ghana and Mozambique) in the GCI and last in the GII.
Table 2.3: Global competitiveness and global innovation

<table>
<thead>
<tr>
<th>Country</th>
<th>Global Competitiveness Index (GCI) Ranking*</th>
<th>Global Innovation Index (GII) Ranking**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Botswana</td>
<td>66 (4.08)</td>
<td>86 (2.80)</td>
</tr>
<tr>
<td>Ghana</td>
<td>114 (3.45)</td>
<td>105 (2.66)</td>
</tr>
<tr>
<td>Kenya</td>
<td>98 (3.67)</td>
<td>83 (2.84)</td>
</tr>
<tr>
<td>Mauritius</td>
<td>57 (4.22)</td>
<td>73 (2.93)</td>
</tr>
<tr>
<td>Mozambique</td>
<td>129 (3.22)</td>
<td>100 (2.69)</td>
</tr>
<tr>
<td>South Africa</td>
<td>45 (3.34)</td>
<td>51 (3.24)</td>
</tr>
<tr>
<td>Uganda</td>
<td>108 (3.53)</td>
<td>108 (2.65)</td>
</tr>
<tr>
<td>Tanzania</td>
<td>100 (3.59)</td>
<td>98 (2.69)</td>
</tr>
</tbody>
</table>

Sources: *WEF (2009); **INSEAD (2010)

Notes:
1. GCI
   a) The GCI ranks 132 countries, with the top three countries being Switzerland (with a GCI score of 5.60), US and Singapore.
   b) The GCI is derived from three sub-indices and 12 pillars of competitiveness. The three sub-indices are “basic requirements” (with four pillars – institutions, infrastructure, macroeconomic stability, and health and primary education); “efficiency enhancers” (with six pillars – higher education and training, goods market efficiency, labour market efficiency, financial market sophistication, technological readiness, and market size); and “innovation and sophistication factors” (with two pillars – business sophistication and innovation). The basic requirements sub-index is considered key for factor-driven economies, the efficiency enhancers are key for efficiency-driven economies, and the innovation and sophistication factors are key for innovation-driven economies.

2. GII
   a) The GII combines innovation inputs (such as institutions, human capacity, information and communication technology and uptake of infrastructure, market and business sophistication) with innovation outputs (such as science and creative outputs).
   b) The top four countries in the GII are Iceland (with a score of 4.86), Sweden, Hong Kong and China.

Table 2.4 provides a comparison of some enabler and output pillars for Uganda, Tanzania and Kenya. This table shows that Kenya outranks Uganda on every variable except ‘growth rate of labour productivity’ while Uganda is outranked by Tanzania on four of the 13 selected variables (namely, production process sophistication, GDP per capita, Gini coefficient; and extent of staff training).
When comparing Uganda’s ranking on the GII with the other two East African countries, it is evident that overall, Uganda ranks the lowest. However, given its low relative ranking in terms of ‘innovation inputs’ at 102 compared to Kenya at 65, for example, this data shows that Uganda nevertheless appears to be much more productive in using these inputs because it outranks Kenya in terms of ‘innovation outputs’ (104 vs. 117). However, Tanzania outranks Uganda on both indicators.
2.1.2 Economic development policy and planning

The Poverty Eradication Action Plan

Until 2010, development planning in Uganda was guided by the Poverty Eradication Action Plan (PEAP). Four core challenges for the second PEAP, which covers the period 2004/05-2009/10, included the following (MFPED 2004):

- The restoration of security, dealing with the consequences of conflict and improving regional equity;
- Restoring sustainable growth in the incomes of the poor;
- Human development; and
- Using public resources transparently and efficiently to eradicate poverty.

The PEAP is grouped under the following five ‘pillars’: (1) economic management; (2) production, competitiveness and incomes; (3) security, conflict resolution and disaster management; (4) good governance; and (5) human development (ibid.: xv).

The National Development Plan

The National Development Plan (NDP 2010/11-2014/15) (Government of Uganda 2010) stipulates the country’s medium term strategic direction, development priorities and implementation strategies. In addition, it details Uganda’s current development status, challenges and opportunities (ibid.: 1).

The thrust of the NDP is to accelerate socio-economic transformation to achieve the national vision of a transformed Ugandan society from a peasant to modern and prosperous country within 30 years. This will be supported by the environment necessary for sustainable development which will entail making continuous improvements to the political, social and economic conditions. The contribution of this NDP to socio-economic transformation is expected to be demonstrated by improved employment levels, higher per capita income, improved labour force distribution in line with sectoral GDP shares, substantially improved human development and gender equality indicators, and the country’s competitiveness position, among others. These improvements are supposed to reflect the structural and socio-economic transformation that is the basis of the NDP (ibid.).

The NDP recognises that there is the “daunting challenge” of attaining a relatively higher per capita income level in the face of a rapidly rising population (ibid.: 2). This would require a massive increase in skilled labour and its redeployment to the production of value-added export-oriented goods and services. Skilling human resources also presents an opportunity for the achievement of development goals such as the reduction of poverty and
improvements in health, education, housing, gainful employment, gender equality and conservation of the environment.

While the PEAP stressed poverty eradication and prioritised social services, the NDP maintains the poverty eradication vision, but with an additional emphasis on economic transformation and wealth creation thereby intertwining sustainable economic growth with poverty eradication (ibid.: 3).

The objectives of the NDP include the following (ibid.: 5):

- Increasing household incomes and promoting equity;
- Enhancing the availability and quality of gainful employment;
- Improving the stock and quality of economic infrastructure;
- Increasing access to quality social services;
- Promoting science, technology, innovation and information and communication technology to enhance competitiveness;
- Enhancing human capital development;
- Strengthening good governance, defence and security; and
- Promoting sustainable population and the use of environmental and natural resources.

The key binding constraints are recognised as the following (ibid.):

- Weak public sector management and administration;
- Inadequate financing and financial services;
- Inadequate quantity and quality of human resources;
- Inadequate physical infrastructure;
- Gender issues, negative attitudes, mind-set, cultural practices and perceptions;
- Low application of science and technology; and
- Inadequate supply and limited access to critical production inputs.

In summary, both the PEAP and the NDP recognise the need to eradicate poverty through stimulating and maintaining high levels of economic growth. In order to attain the growth and poverty eradication objectives the roles of education, human capital development broadly, and science and technology, are recognised as well as the fact that inadequate human resources and low levels of investment in science and technology are key binding constraints.

### 2.2 The Uganda higher education system

#### 2.2.1 The size and shape of the higher education system

Uganda’s tertiary education system has its origins in the early 1920s with the founding of Makerere as a technical college to serve students from the British
East African territories of Kenya, Tanganyika and Uganda. In 1970, the University of East Africa, of which Makerere College had been a constituent college since 1963, dissolved into three fully-fledged independent universities (Makerere University in Uganda, Nairobi University in Kenya and University of Dar es Salaam in Tanzania). Makerere University like other national development initiatives was to remain a public undertaking financed and supported from public sources.

System differentiation

The tertiary education sector in Uganda comprises two tiers, namely degree-awarding universities and ‘other tertiary institutions’ commonly referred to as the technical sub-sector, which offer diplomas and certificates. Universities are further categorised into public and private. Public or state-funded institutions are established by an Act of Parliament while private universities are chartered, licensed or unlicensed. ‘Other tertiary institutions’ are similarly categorised into public and private.

By 2005, there were 152 higher education institutions. Of these 51 were public and 101 were private. The university tier had 28 institutions – five public, 13 chartered and licensed private, and ten unlicensed, private universities. There were 124 ‘other tertiary institutions’ out of which 46 were public. The dominant institutions amongst public ‘other tertiary institutions’ are national teacher colleges, health training institutions and theological institutions. Private ‘other tertiary institutions’ mainly comprise colleges of commerce and management institutions.

Three public ‘other tertiary institutions’ do not fall in either category. These are the Uganda Management Institute, which is a degree-awarding institution mainly at the postgraduate level; the Law Development Centre, which is a diploma-awarding institution mainly for postgraduate law students from the various universities; and, the Makerere University Business School, which offers degree programmes from Makerere University and has independent diploma and certificate programmes.

Although the bulk of private (i.e. fee-paying) university students are found in public universities, Uganda is witnessing an upsurge of private universities – from one in 1988 to more than 20 by 2005, which represents 82% of the total number of universities in the country.

Only one private university, Kampala International University, is regarded as a for-profit institution. With the exception of the Islamic University in Uganda, which was founded by an international body – the Organisation of Islamic Conference – private universities in Uganda fall into three main categories including religious-founded (local), community-founded, or evolved from other
tertiary institutions. These institutions depend mainly on tuition fees paid by students and donations made by the founding bodies.

All private universities offer undergraduate degrees predominantly in the humanities, with a few institutions offering postgraduate programmes in the humanities and soft sciences.

**Table 2.5:** Higher education institutions in Uganda (2005)

<table>
<thead>
<tr>
<th>Institutions</th>
<th>Public</th>
<th>Private</th>
<th>Unlicensed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aeronautical institutions</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agricultural institutions</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colleges of commerce</td>
<td>5</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>Communication institutions</td>
<td>3</td>
<td></td>
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</tr>
<tr>
<td>Cooperative colleges</td>
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<td></td>
</tr>
<tr>
<td>Development centres</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fisheries institutions</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Forestry college</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health training institutions</td>
<td>10</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Hotel and tourism</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management institutions</td>
<td>3</td>
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</tr>
<tr>
<td>Meteorological institutions</td>
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</tr>
<tr>
<td>National teacher colleges</td>
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<td>-</td>
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</tr>
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<td>Technical institutes</td>
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<td>Universities</td>
<td>5</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>51</strong></td>
<td><strong>90</strong></td>
<td><strong>11</strong></td>
</tr>
</tbody>
</table>

*Source: Musisi and Nakayiwa-Mayega (2010)*

**Participation in higher education**

According to the NCHE (2005), enrolment in public universities by 2005 stood at 54,435 students. This represented 76% of total university enrolment. Makerere University, as the largest public university, had 75% of the total enrolment in public universities in 2004 but this fell to just under 61% in 2005.

The participation rate (GER) was estimated at 3.5% in 2005 and just under 5% in 2010 (Government of Uganda 2010). Enrolments increased by more than 260%, moving from 30,000 in 1995 to 109,208 by 2005, a more than threefold increase in a decade. With the country’s high population growth and the introduction of universal primary education and more recently universal secondary education,
the demand for higher education is likely to continue growing. In addition, the demand for higher education in Uganda is likely to increase as a result of such factors as the increases in household incomes; the growing recognition of the role of higher education in national development; and the expected high private returns to higher education.

The response to the unprecedented growth in demand for higher education has been an expansion in service providers, particularly the number of private institutions. Despite the increase in number, private universities’ enrolment by 2004/05 was around 21,500 representing only 32% of the total university enrolment. Although there is increased private participation through private ownership, most of the institutions are relatively small, accommodating only a limited number of students.

Interestingly, while only 25% of Ugandan students are enrolled in the private universities, 70% of the 2,528 international students in Uganda are enrolled in these institutions. This large percentage of international students is a pointer to the nature of private institutions which have tended to have a more aggressive marketing strategy outside the country, especially within the East Africa region, compared to the public institutions. Moreover, both private and public universities charge the same fees for Ugandan and international students. Additionally, there is a tendency that Ugandan students prefer education in the public institutions and will, in many cases, go to private institutions only after failure to gain admission to the public institutions.

| Table 2.6: Student enrolment share of public universities in Uganda (2004-2005) |
|---------------------------------|----------------|----------------|
| Institution                     | Enrolment       | % share of enrolment |
|                                 | 2004 | 2005 | 2004 | 2005 |
| Makerere University             | 34,955 | 33,108 | 75   | 60.8 |
| Mbarara University              | 1,086 | 1,139 | 2.3  | 2    |
| Makerere University Business School | 6,562 | 10,111 | 14.2 | 18.6 |
| Kyambogo University             | 3,323 | 7,588 | 7.1  | 14   |
| Gulu University                 | 640  | 2,489 | 1.4  | 4.6  |
| Sub-total                       | 46,566 | 54,435 | 100  | 100  |
| Total Public University         | 68,079 | 71,279 |       |      |

Source: Musisi and Nakayiwa-Mayega (2010)

Table 2.7 shows that the proportion of females in public and private universities is about the same (around 43-44%).
Table 2.7: Enrolment composition of private and public universities

<table>
<thead>
<tr>
<th>University Status</th>
<th>Ugandan</th>
<th>International</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Public</td>
<td>19 325</td>
<td>26 463</td>
</tr>
<tr>
<td>Private</td>
<td>5 308</td>
<td>6 982</td>
</tr>
<tr>
<td>Private-Unlicensed</td>
<td>1 127</td>
<td>2 061</td>
</tr>
<tr>
<td>Total</td>
<td>25 760</td>
<td>35 506</td>
</tr>
<tr>
<td>% Private</td>
<td>25%</td>
<td>25%</td>
</tr>
</tbody>
</table>

Source: NCHE (2005)

2.2.2 Higher education expenditure and financing

Public expenditure on education as a percentage of GDP increased from 1.5% in 1991 to 5.2% in 2002-2004. As a percentage of government expenditure, it grew from 11.5% (1991) to 18.3% in 2002-04, compared to Kenya’s figure of 29.2% (2002-04) (UNDP 2006). The highest proportion of this goes to the primary education sub-sector.

Public financing of education constitutes an average of 25% of the national budget. A survey of the expenditure trends over the period 1997/98-2005/06 indicates a range from 27% in 1998/99 to 22 % in 2003/04. With the adoption of the sector wide approach to budgeting and the medium-term expenditure framework in 1997/98, all education-related activities were clustered in the education sector budget. This, coupled with the introduction of universal primary education and a priority shift to basic education, was the genesis of the decline in public support to higher education.

Table 2.8: Education sector expenditure in relation to national government expenditure (1997/98-2005/06) (USh, billions)

<table>
<thead>
<tr>
<th></th>
<th>97/98</th>
<th>98/99</th>
<th>99/00</th>
<th>00/01</th>
<th>01/02</th>
<th>02/03</th>
<th>03/04</th>
<th>04/05</th>
<th>05/06</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total education sector spending</strong></td>
<td>208</td>
<td>267</td>
<td>322</td>
<td>373</td>
<td>456</td>
<td>505</td>
<td>518</td>
<td>567</td>
<td>626</td>
</tr>
<tr>
<td><strong>Total national expenditure</strong></td>
<td>810</td>
<td>984</td>
<td>1,226</td>
<td>1,496</td>
<td>1,895</td>
<td>2,037</td>
<td>2,343</td>
<td>2,433</td>
<td>2,686</td>
</tr>
<tr>
<td><strong>% Education sector at national level</strong></td>
<td>26%</td>
<td>27%</td>
<td>26%</td>
<td>25%</td>
<td>24%</td>
<td>25%</td>
<td>22%</td>
<td>23%</td>
<td>23%</td>
</tr>
</tbody>
</table>

Source: Musisi and Nakayiwa-Mayega (2010)

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2 Unless otherwise stated, the information provided in this section is drawn from Musisi and Nakayiwa-Mayega (2010).

---
Government adopted new modalities for the funding and coordination of the education sector as part of its reform programme. The government, in a pact with the international donor agencies, instituted the Education Sector Investment Program in 1998 with the primary goal of, amongst others, confronting and addressing the financial challenges emerging out of the implementation of universal primary education. From its inception, the programme ESIP I and its successor programme ESIP II, became the blueprint for allocating funds between different education sub-sectors.

A notable outcome of the programme has been the decline in public expenditure on higher education (Table 2.9) and a deliberate move by the government to encourage public universities to generate resources from private sources, as well as encouraging the private sector to play an increasingly significant role in the provision of higher education.

<table>
<thead>
<tr>
<th>Education Sub-Sector</th>
<th>97/98</th>
<th>98/99</th>
<th>99/00</th>
<th>00/01</th>
<th>01/02</th>
<th>02/03</th>
<th>03/04</th>
<th>04/05</th>
<th>05/06</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>University</td>
<td>12%</td>
<td>10%</td>
<td>10%</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
<td>9%</td>
<td>9%</td>
<td>10%</td>
<td>9%</td>
</tr>
<tr>
<td>Other tertiary institutions</td>
<td>0%</td>
<td>0%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>3%</td>
<td>2%</td>
<td>3%</td>
<td>4%</td>
<td>2%</td>
</tr>
<tr>
<td>MoES including primary</td>
<td>18%</td>
<td>24%</td>
<td>24%</td>
<td>22%</td>
<td>19%</td>
<td>20%</td>
<td>15%</td>
<td>14%</td>
<td>14%</td>
<td>19%</td>
</tr>
<tr>
<td>Primary (exclusive)</td>
<td>56%</td>
<td>51%</td>
<td>53%</td>
<td>57%</td>
<td>58%</td>
<td>56%</td>
<td>59%</td>
<td>58%</td>
<td>57%</td>
<td>56%</td>
</tr>
<tr>
<td>Other</td>
<td>14%</td>
<td>14%</td>
<td>12%</td>
<td>11%</td>
<td>12%</td>
<td>13%</td>
<td>15%</td>
<td>15%</td>
<td>15%</td>
<td>14%</td>
</tr>
</tbody>
</table>

Source: Musisi and Nakayiwa-Mayega (2010)

The government’s reluctance to finance higher education has led to an increase in private expenditure on higher education and public institutions bidding to develop various mechanisms for generating funds from private households. The wave of privatisation of higher education has become so strong in Uganda that there was a time when almost every six months there was a new university being created. Moreover, in public institutions, most students now pay fees as a result of the dual-track entry scheme. This dual-track scheme was instituted in 1992 and legalised by the Universities and Other Tertiary Institutions Act (2001).

Sources of funds

The education reforms have led to three sources of financing for higher education including the government (public), private (tuition and other fees) and donor. Although both private and donor funds played a relatively minor
role, in recent years these two sources of funding have come to be crucial in the provision of higher education, so much so that in their absence, higher education in Uganda would be in a terrible crisis. While public and donor funds are to be found in both public and private institutions, public funds for higher education are only allocated to public institutions.

Patterns of state financing in public higher education institutions

The amount that is allocated to higher education through the Education Sector Investment Program arrangement is subsequently sub-divided among four public universities and over 40 ‘other tertiary institutions’. Regrettably, there are no clear guidelines shaping allocations within the sub-sector. Instead, there is what is referred to as government subvention, line item funding, and project financing for newly established universities. These public financing modes run alongside the dual-track system of tuition fees.

Public funds are disbursed to institutions through four distinctive channels: (a) directly from the Ministry of Finance, (b) through MoES departments of Higher Education; Business, Technical and Vocational Education Training Institutions (BTVET) and Teacher Education, (c) through the district, and (d) through other line ministries.

Public universities
Public universities (Makerere, Mbarara, Kyambogo and Gulu) are required to submit a budget to parliament. Nonetheless, parliamentary allocations are hardly influenced in a substantive way by these submitted budgets. Instead, allocations are based on the institution’s historical allocations, its size and needs, although not in a consistent manner.

Government funds are disbursed to universities in two blocks: recurrent and development budgets. For the recurrent budget, each public university receives a block grant or ‘subvention’. The amount of the subvention is purportedly calculated using the number of government-sponsored students and the ‘unit cost’ which the Ministry thinks is ‘reasonable’ for that particular institution.

Unit costs have ranged from USh 1.5 million (USD 680) in Kyambogo University to USh 16.1 million (USD 7 300) in Mbarara University of Science and Technology. Ministry personnel in charge of budgeting insist that the government ‘unit cost’ is calculated slightly higher, often more than twice the amount of the annual fee paid by a private fee-paying student, because it is inclusive of the student’s welfare costs. For instance, in the financial year 2005/2006, Makerere University received a subvention of Ush 35 billion (USD 16 million) calculated at about 7 000 students at a unit cost of USh 4 million (USD 1 800) per student.
Universities have some discretion on how they allocate the block grants. Almost exclusively, public universities pay their regular staff out of this subvention grant. The development budget fluctuates significantly from year to year. Although there is a popular belief that the development budget tends to favour Makerere University, it receives a mere USh 140 000 for all its development budget needs.

‘Other tertiary institutions’ in the BTVET category
These institutions receive recurrent budget support as a capitation grant based on the number of state-sponsored students. In addition to salaries paid directly for staff recruited through the Ministry of Public Service, these institutions also receive a development budget, especially through donor funding. Nonetheless, the availability and disbursement of this budget fluctuates much more than those to the universities. The fluctuation is so high that it is difficult for these institutions to count on the Ministry for this support.

National teacher colleges
All national teacher colleges receive both recurrent and development budgets from the Ministry. For recurrent expenditure, wages and non-wage budgets are separated. As with those in the BTVET category, the wage subsidy is based on the public posts in the institution (staff pay roll), and the recurrent budget is estimated based on the number of government-sponsored students.

District tertiary institution
Education is one of the decentralised services under the decentralisation policy adopted by the government of Uganda in 1993. In addition to the jurisdiction that districts have over primary and secondary schools, funds for the district-based ‘other tertiary institutions’ are channelled through the respective districts. Similar to the BTVET and national teacher colleges, funds are in the form of capitation grants based on the number of students. This category of institutions has a bigger financial challenge than the other three precisely because the release of funds to the districts is intermittent. In addition, the districts have limited sources of own funds since the central government curtailed their tax base several years ago.

Distribution of education expenditure
The main categories of education expenditure are the following: District Primary 57%, District Secondary 15%, Universities 10%, MoES plus primary 14% and District Tertiary 3.5%.

Financing of higher education in Uganda is input-based, with minimal attention paid to the process and the outputs that accrue out of institutional activities. The primary driver of financing seems to be enrolment. Assessment of institutional performance is mainly based on the number admitted and registered per institution.
A study of 15 institutions by the Makerere University Institute of Social Research (2003) revealed that 72% of the total funding in higher education went to Makerere University, compared to its 75% enrolment share.

**Private vs. public support to higher education**

Over the past ten years, the phenomenon of public-private partnerships has manifested itself in the enrolment structure and in the resource inflow to public universities as part of tuition and other fees paid by students. The percentage share of private resources in public institutions has overtaken government support. At Makerere University, for example, funds from private sources contributed 60% to total recurrent expenditure in 2005/06 up from 28% in 1996/97. Kyambogo University had 51% of the recurrent budget from private sources in 2005/2006. Mbarara University of Science and Technology, which has a better public funding arrangement than Makerere University, raised only 22% of its total support in the same financial year, from private sources.

However, the increase in private resources both in Makerere and Kyambogo is considerably lower than the growth in private student numbers. For example, at Makerere University, private students constitute 80% of the total enrolment compared to the resource contribution of 60%. Likewise, in Kyambogo University private students constitute 82% of the total enrolment compared to the 51% contribution to the budget. Considered in this light, students in Kyambogo University are much more highly subsidised by government compared to those in Makerere. This confirms the earlier observation that the unit government contribution in Kyambogo is much higher than in Makerere. It also highlights the fact that private students do not pay the true cost of the higher education they receive.

Moreover, on average, a mere 17% of the students in public universities are government-supported with all costs, including tuition, accommodation and welfare costs, borne by the state.

**Student financing schemes**

To date, there is no clearly-defined student financing scheme in Uganda, as is the case in Kenya. Student financing takes the form of direct public or private support.

**Public**

Public support for higher education is reserved for a few students admitted to public institutions based on academic merit. For universities, students receive a ‘full’ government scholarship. The scholarship, which is a block grant that universities receive, covers tuition, accommodation, scholastic materials and an allowance for field attachments in programmes with this provision.
Government-sponsored students, however, are categorised into two: resident and non-resident. Resident students are accommodated in the halls of residence. This provision is by and large reserved for the top scholars in the various fields. These students receive support in kind apart from the faculty allowance (for scholastic materials) and a field attachment/internship allowance. For the non-resident students, an allowance is given to cover accommodation, food and transport in addition to similar financial support that is given to resident students for scholastic and internships.

The state has reserved an annual 4,000 positions for government sponsorship of students admitted into the five public universities. The system is merit-based and students with the highest grade points are admitted for scholarship based on the individual requirements of the institutions and the faculties where the students are to be based. The 4,000 students represent only 17% of the students who qualify for university entry and a mere 10% of the students who sit for entry exams.

In 2005/06 a new system was introduced primarily to redress the enrolment imbalance between sciences and the humanities. In the new system, 75% of the 4,000 government-sponsored are admitted on the basis of merit but are limited to subjects deemed crucial to national development, specifically in Science and Technology, Law, Performing Arts, and Economics. The remaining 25% of the 4,000 places is used to address equity gaps. A quota system was introduced for the best students in each district, for persons with disabilities, and for sports men and women that meet the minimum requirements of specific institutions and programmes.

Students who do not qualify for government sponsorship are admitted through the private sponsorship scheme or to the ‘other tertiary institutions’. State scholarship therefore is highly competitive and mainly favours students from the higher socio-economic strata whose parents can afford good secondary schools. The 4,000 students who access state scholarships in the four public universities are mainly those from the higher income brackets as evidenced by the secondary schools they attended. For example, 47% of the students admitted at Makerere University in 2004/05-2006/07 for government sponsorship came from the 25 most prestigious and highly-selective schools. This privileged group receives ‘free’ university education including tuition, accommodation, meals and other welfare costs. Additionally, because of the merit-based entry mechanisms, these students are admitted to the professional courses such as law and medicine. This further increases the socio-economic divide between the urban rich and the rural poor.

Currently, only 18% of the more than 70,000 students in public universities are government-supported for all costs including tuition, accommodation and welfare costs.
Public support for the ‘other tertiary institutions’ students covers tuition and accommodation. In addition, the institutions receive a capitation grant per enrolled student. This grant is expected to cover all the running costs that accrue to the student including meals. The national teacher colleges and the BTVET institutions receive a field allowance on behalf of the government-sponsored students to cover internships.

**Private**

Tuition and other related fees paid by students form the largest share of non-government resources for higher education. Both public and private universities advertise available programmes and the contingent fees. Neither the institutions nor government have established financing schemes for this category of students. The contributions therefore come from households (students, parents and guardians), non-governmental organisations (NGOs), church-based organisations and donor funds in the form of tuition fees, specifically for the disadvantaged groups and for postgraduate studies. There have been limited cases of sponsorship from government ministries and other agencies for employees who wish to further their education or take advanced degrees. Ironically, there is a category of private students who are directly supported by the President’s Office through the State House Scholarship Fund. Selection of this category of students is not transparent and modalities for choosing who benefits from this scheme are not known to the general public.

### 2.2.3 Higher education governance and policy

The Universities and Other Tertiary Institutions Act of 2001 sets the legal framework for the provision of higher education in Uganda. This Act replaced various statutes that established and governed individual public institutions. The Act was promulgated to attain four basic goals. These include the following (Government of Uganda 2001):

- To provide for the widening of accessibility to higher quality institutions for students within the education system;
- To provide an environment for equating professional or other qualifications of the same or similar courses offered by different institutions;
- To ensure quality in all tertiary institutions; and
- To oversee and guide the establishment and management of these institutions while respecting their autonomy and academic freedom.

**The National Council for Higher Education (NCHE)**

The regulatory role of higher education is vested in the NCHE as established by the Act. Among other responsibilities, the NCHE is charged with the following (ibid.):
• Receipt and processing of applications for the establishment and accreditation of public and private institutions of higher education;
• Monitoring, evaluation and regulation institutions of higher education;
• Ensuring minimum standards for courses of study and the equating of degrees, diplomas and certificates awarded by the different public and private institutions of higher education;
• Setting and coordination of national standards for admission of students to the different institutions of higher education;
• Certifying that an institution of higher education has adequate and accessible physical structures and staff for the courses to be offered by it; and
• Advising the government on policy and other matters relating to institutions of higher education.

The Act stipulates that the Higher Education Department within the MoES has jurisdiction over tertiary education; however, this seems to be only true in the case of universities as the Teacher Education Department is responsible for all the national teacher colleges while the Department of BTVET is still responsible for some of the technical tertiary institutions, particularly health training institutions, colleges of commerce, and technical colleges. At the same time, other government ministries have jurisdiction of some over the ‘other tertiary institutions’ (e.g. the Aeronautical College is under the Ministry of Defence).

The Education Sector Strategic Plan (2004-2015)

The broad objectives of the Education Sector Strategic Plan include the following (MoES 2004: 7-10):

1. An education system relevant to Uganda’s national development goal;
2. Students achieving the set education; and
3. An effective and efficient education sector.

The implications for tertiary education are highlighted below.

Sub-objective 1.3: Expanded and equitable participation in a coordinated, flexible, and diversified tertiary system

Strategies (ibid.: 15-16):

• Restructure the tertiary system to increase coherence and flexibility;
• Develop facilities to cope with rapidly increasing numbers; and
• Establish a liberalised financing mechanism and diversify the resource base:

The Ministry uses public funds to subsidise Makerere and other universities. Because of the academic independence of these institutions and the mingling of public and private funds, it is extremely difficult to account for how public funds are spent. To
address this problem, the Ministry will direct a higher portion of funds to students rather than institutions, allowing it to specify the disciplines in which these are focused (science and technology). This change will also make the market for higher education more market-driven by allowing students to enter the public or private institution that offers courses that meet their needs, thus leading to better quality and more attractive programmes. (ibid.: 16)

Sub-objective 2.3: Tertiary graduates prepared to be innovative, creative, and entrepreneurial in private and public sectors

Strategies (ibid.: 21):

- Reform and improve curricula and instruction in priority disciplines; and
- Promote research, particularly applied research, and publications.

The Millennium Science Initiative

The Uganda Millennium Science Initiative was started in 2006 through financing provided by the World Bank. The objective of the USD 35 million programme was to increase the number and quality of scientists produced by Uganda’s universities and research centres, and to boost the country’s technological productivity in industrial, agricultural and other sectors.

According to Egwang (2010), the Millennium Science Initiative has made great progress in areas such as malaria vaccines, banana processing and value-addition, fisheries, agro-biotechnology, innovations in science and medical education, climate change, and innovative partnerships between the private sector and academia. There is a concern that the programme may be coming to an end because of a lack of enthusiasm by the government (specifically the Ministry of Finance which is responsible for science and technology) to request a renewal of the contract.

2.3 The Makerere University

2.3.1 Key moments in the development of the institution

The information in this section and section 2.3.2 is a combination of information gleaned from the Makerere University web site (http://mak.ac.ug/index.php) and that provided by Ms Florence Nakayiwa-Mayega as part of the background information to the institution (Nakayiwa-Mayega 2009).
Established in 1922 as a technical school, Makerere University is one of the oldest and most prestigious universities in Africa. In January of that year, the school, which was later renamed Uganda Technical College, opened its doors to 14 day students who began studying carpentry, building and mechanics. The college soon began offering various other courses in medical care, agriculture, veterinary sciences and teacher training. It expanded over the years to become a Center for Higher Education in East Africa in 1935. In 1937, the college started developing into an institution of higher education, offering post-school certificate courses. In 1949, it became a University College affiliated to the University College of London. In 1963 it became the University of East Africa, offering courses leading to general degrees of the University of London.

With the establishment of the University of East Africa on 29th June 1963, the special relationship with the University of London came to a close and degrees of the University of East Africa were instituted. On July 1, 1970, Makerere became an independent national university of the Republic of Uganda, offering undergraduate and postgraduate courses leading to its own awards.

The university currently has eleven faculties and colleges including Agriculture, Arts, Computing and Information Technology, Economics Management, Forestry and Nature Conservation, Law, Health Sciences, Science, Social Sciences, Technology, and Veterinary Medicine. There are four schools – Education, Industrial and Fine Art, Library and Information Science, and Graduate Studies. There are also six institutes and two centres including the Institute of Adult and Continuing Education, the Institute of Environment and Natural Resources, the Makerere Institute of Social Research, the Institute of Statistics and Applied Economics, the Institute of Psychology, the Institute of Languages, the Child Health and Development Centre, and the Human Rights and Peace Centre.

2.3.2 Governance and strategic objectives

The university is led by a vice-chancellor and two deputy vice-chancellors (Finance and Administration, and Academic Affairs), a university secretary (responsible for, amongst other things, policy formulation), a registrar, academic, a director for planning and development, and a dean of students.

The university operates under the Universities and Other Tertiary Institutions Act 2001 as amended in 2003. Under this Act the university council is the supreme decision-making organ. Representatives to council include four government appointees, the Ministry of Education and Sports, the Ministry of Finance, Planning and Economic Development, the private sector, representatives of academic and administrative staff, and representatives of the Union Staff. The vice-chancellor and his deputies are ex-officio members of council. The university secretary is secretary to council. This body functions
through committees. Academic matters are channelled to council through senate. Similar to council, senate operates through committees. There are two basic sub-committees of senate for the humanities and science.

The university’s vision is to be the leading institution for academic excellence and innovations in Africa. Its mission is to provide innovative teaching, learning, research and services responsive to national and global needs.

The strategic directions of the current strategic plan (2008/09-2018/19) include the following:

1. Learner-centred problem-based instruction providing experiential and flexible learning;
2. A research-driven university where research and teaching/learning are mutually reinforcing; and
3. Knowledge transfer partnerships and networking, because knowledge production and transfer between universities and broad public and private sectors is supposed to be a two-way traffic that calls for cultivation and fostering of symbiotic relationships.

2.3.3 Institutional finances

Table 2.10 below shows that the total income received from government increased from USD 13 008 963 in 1999/2000 to USD 19 977 890 in 2006/07. Over more or less the same period, state allocations as a proportion of total income decreased from almost two-thirds (63.53%) in 2000 to a third (33.88%) in 2006 (Figure 2.2). This shift appears to be the result of an increase in student fee contributions.

Table 2.10: Makerere government income (1999/2000-2006/2007)

<table>
<thead>
<tr>
<th>Academic year</th>
<th>Government income in Ugandan Shilling (Ush) (Thousands)</th>
<th>Government income in USD</th>
<th>Exchange Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999/00</td>
<td>22 973 829</td>
<td>13 008 963</td>
<td>1 766</td>
</tr>
<tr>
<td>2000/01</td>
<td>23 200 000</td>
<td>12 821 221</td>
<td>1 810</td>
</tr>
<tr>
<td>2001/02</td>
<td>27 742 000</td>
<td>14 971 398</td>
<td>1 853</td>
</tr>
<tr>
<td>2002/03</td>
<td>27 526 750</td>
<td>14 233 066</td>
<td>1 934</td>
</tr>
<tr>
<td>2003/04</td>
<td>26 590 262</td>
<td>15 290 547</td>
<td>1 739</td>
</tr>
<tr>
<td>2004/05</td>
<td>36 653 004</td>
<td>20 980 540</td>
<td>1 747</td>
</tr>
<tr>
<td>2005/06</td>
<td>35 102 427</td>
<td>20 104 483</td>
<td>1 746</td>
</tr>
<tr>
<td>2006/07</td>
<td>36 399 716</td>
<td>19 977 890</td>
<td>1 822</td>
</tr>
</tbody>
</table>
The university’s current strategic plan highlights that limited and declining government funding for higher education will work against Makerere achieving its strategic objectives (Makerere University 2008a: 9,27). The plan outlines various initiatives to generate additional funds and save money which will be spearheaded by the Resources Mobilisation Unit and the various planning units (ibid.: 27).

An institutional leader at Makerere University complained that there is no clear or consistent formula for government funding of higher education:

We’ve been having challenges with the financing that we source from the state, the treasury. The mode of funding is not formula-based – I mean, nobody knows what they use, what are the variables. They just fork out a figure – 40 billion – now, 40 billion is for what? And then they just divide 40 billion by the number of students and then they say: you see, our unit cost is this. That’s a mechanical way of doing things. There is no system, there’s no model which government bases on to fund public universities. (Institutional leader)
Part 3
The role of higher education in Uganda

AT A GLANCE
- Key national higher education stakeholders
- Role of higher education in national policies
- Policy coordination in the higher education sector
- Institutional narratives on the role of the university
- Policies, structures and appointments
- Research funding
- Research agenda
- Linkages with the labour market

3.1 Introduction

As was highlighted in section 1.1.3, the existence of a ‘pact’ between national and institutional stakeholders, as well as external stakeholders such as industry and foreign donors, on the role of higher education is a key factor in the extent to which universities are able to make a sustained contribution to development. A pact was defined as a fairly long-term cultural, socio-economic and political understanding and commitment between universities, political authorities and society at large of the identity or vision of universities, what is expected of universities, and what the rules and values of the universities are. For the purposes of this study, our interest is in exploring the general nature of the pact, and then the extent to which there is a role for higher education in economic development in the pact.

We begin our analysis of the nature and extent of a pact in Uganda by considering the notions(s) of the role of higher education from the perspective of the national authorities and the institutional stakeholders at Makerere. This includes an investigation of the ways in which both national and institutional stakeholders talk about development and the role of higher education, whether and how these notions are articulated in relevant policy documents, and the extent to which specific structures have been established to give expression to the intent of the policies. It also includes a look into the extent to which matters pertaining to higher education are coordinated across national authorities, and between national authorities, higher education institutions (with a specific focus on Makerere) and key external stakeholders.
3.2 The national perspective

3.2.1 Key national stakeholders in relation to the pact

The key national stakeholders necessary for the development of a pact in Uganda are the following:

- Education: Ministry of Education and Sports; National Council for Higher Education;
- Ministry of Finance, Planning and Economic Development responsible for the major planning documents such as the NDP and the PEAP; and
- The President of Uganda, who drives every major policy initiative in the country.

3.2.2 The role of higher education in national policies

The Poverty Eradication Action Plan

Pillar 5 of the PEAP refers to “Human development”. In this regard, it states the following (MFPED 2004: xxii-xxiii):

A healthy and well-educated population is both a necessary condition for development and one of the central objects of development. During the first two PEAPs, government has invested in a massive expansion of primary education. To confront the challenges of child and maternal health, government has prepared an infant and maternal health strategy focusing on improving the quality of health care and treatment of malaria, sanitation, community mobilisation, and family planning.

The document goes on to state that “investment in education contributes to the accumulation of human capital, which is essential for higher incomes and sustained income growth” (ibid.: xiii).

PEAP proposed that tertiary education should be strengthened with an expansion in student numbers, the introduction of bursaries for poorer students, including orphans, the operationalisation of a loan scheme, and improvement in curriculum and facilities (ibid.: xxiv). It recognises that tertiary education supports “poverty reduction by training a qualified and adaptable labour force, including high level professionals like scientists, technicians, business leaders, and teachers for basic and secondary education, and builds the capacity to generate and use knowledge” (ibid.: 161).
PEAP states that the government’s long-term plan for tertiary education is to raise student numbers to 126,000 by 2015 (of which half should be at universities, and half should be female); the introduction of bursary schemes to target poorer students; and, improvement in curriculum and facilities.

The National Development Plan

The NDP stresses the importance of both science, technology and innovation, and tertiary education in development. With regard to science, technology and innovation, the document states that achieving socio-economic transformation requires continuous improvement in the way goods and services are produced and delivered within the economy (Government of Uganda 2010: 51). This can be realised through accelerated use of applied technology, research and innovation. Currently, research and development (R&D) is mainly confined to institutions such as universities, colleges, vocational institutes and government research centres with limited applicability to production and delivery of services. Moreover, the adaptability of the little available applied science and technology is slow in both the public and private sectors.

Uganda currently has only one researcher per thousand members of the workforce compared to over five in the developed world; one R&D personnel per thousand of the labour force compared to 5-18 in OECD countries. The ratio of arts to science and technology graduates is 5:1 compared to 1:1.5 in Malaysia. The share of expenditure on R&D as a percentage of GDP is 0.3% compared to the African Union target of 1% (ibid.: 137).

The constraints to performance of the science and technology innovation sector are identified in the NDP as follows (ibid.: 138):

- Inadequate focus on research and development by both private and public actors;
- Inadequate financing for R&D and science, technology and innovation aspects in general;
- Inappropriate formal and informal education and training which limits affinity for R&D and innovation;
- Weak collaboration mechanisms between planners, research institutions, industry and academia;
- Inadequate personnel in product innovation and services;
- Lack of venture capital to support researchers and innovators;
- Slow adoption of new technologies due to ignorance and apathy; and
- Lack of incentives to promote private R&D.

In terms of the role of tertiary education, there is recognition of the importance of the BTVET sub-sector for development. The plan is to have this sub-sector cater for 30% of post-primary enrolment, compared to about half this figure at the current time.
There is also a recognition in the NDP that higher education is “the heart of education as well as the core of national innovation and development systems” (ibid.: 214). It is also the place where teachers are trained and curricula developed. Without research in higher education to develop curricula for the entire education system, all curricula will be of little relevance to national development. Universities are the core of any national development system because they produce not only the knowledge needed to drive economies but also the skilled human resources required to do the job.

The main challenges identified in higher education include the following: low enrolment (the plan is to increase access from the current 4.97% to at least 15% during the plan’s period); inadequate funding; and poor quality of infrastructure and academic staff (ibid.).

3.2.3 Higher education and development policy coordination

While the major planning documents (NDP, PEAP) have highlighted the role of higher education in development, very little attention has been paid to the creation of institutional mechanisms to foster policy coordination between the respective policy-makers in higher education and economic planning. This is due partly to the fact that the department of higher education in the MoES is extremely weak and lacks the necessary political clout to engage either the MoES or the MFPED on such issues as the role of higher education in economic development. The MFPED also does not appear to be active in driving inter-ministerial collaboration on cross-cutting issues such as higher education and development.

3.3 The Makerere University perspective

3.3.1 Institutional narrative(s) on the role of the university

According to one institutional leader, the focus on the university’s role in development is relatively recent and attributes this to how the interventions of the World Bank served to distort the government’s view of the role of higher education in national development previously:

Looking at the side of government, I think government has not been focusing more on empowering higher education to participate in development, largely because of the previous distortions from the World Bank, the IMF [International Monetary Fund], where they convinced or maybe coerced our governments to put more emphasis on primary education. For
many years they convinced African governments that if [...] education is going to benefit people you must focus on primary education. It’s only recent, I don’t know if I can put a time frame on it, five years or less that they have now had a shift in their thinking and they now believe that higher education has a role to play in the development of African countries. So now governments are starting to see: how can we empower higher education institutions to make a contribution to national development? (Institutional leader)

Some respondents viewed the university’s contribution to development in terms of training for high-level human resources, such as articulated by the following institutional leader:

[...] certainly the university recognises its role in national development. First and foremost of course the statistics clearly bring out the fact that Makerere produces a large bulk of human resources for the country; at all levels, whether we are talking about undergraduate level or even graduate studies, we really are the premier university and we really are doing the bulk of training, and indeed we must, we have that responsibility and duty. And, of course, we are also training human resources for the other universities which are coming up. (Institutional leader)

According to another respondent, the relatively new National Planning Authority will be responsible for, amongst other things, identifying personpower requirements in different sectors related to development – and it is the higher education sector and universities in particular which will be responsible for this training:

They are still working on this. It’s a new authority. There was one which did not work and then they have now revamped it, and I think the new one has not been in place for more than two years. So they are still trying to collect data to help them determine, for example, how many doctors do you want in Uganda, how many engineers do you want, how many teachers do you want – so that that can guide the human resource development processes. (Institutional leader)

This same respondent also highlighted other development-related policy documents which also give direction in terms of important skills required for development:
Then we have other documents which we’ll refer to like the Poverty Eradication Action Plan, the Millennium Development Goals, as documents that have been guiding this country in the area of poverty reduction and economic development. One of the pillars of that Poverty Eradication Action Plan, which is in the process of being transformed through the national planning document, states that one of the pillars is human development. The thinking here is when you develop human beings and give them skills they should be able to empower themselves to reduce poverty for themselves, either by creating jobs themselves or by being engaged in activities that can reduce poverty for themselves and collectively reduce poverty from the country. (Institutional leader)

One institutional leader argued that the fact that government has provided scholarships for higher education – rather than for primary or secondary education – is evidence that government has always considered higher education important for development:

*When it comes to offering scholarships, of course government has for a long time offered scholarships to students who join public universities. [...] That in itself indicates that government recognises that higher education has a role to play in national development because when it came to secondary school education and primary school education there were no scholarships; parents had to pay for lower levels of education, it’s only at the higher level that government came in with scholarships – and to me that in itself is an indication of how seriously they take higher education.* (Institutional leader)

This respondent went on to point out that nowadays, the government offers scholarships in selected disciplines or fields that are regarded as particularly important for national development including, amongst others, science and technology, medicine, law, economics and industrial arts.

Speaking specifically of the arts and social sciences, one respondent said that the university still seems to be in the “traditional mode” of producing skills for the civil service, although recently there has been a move towards introducing workplace attachments for second-year students in order to improve the relevance of their skills and their employability:

*I think traditionally we fell into the mode of the university populating the human resource for especially the administrative arm of government, and in that way contributing to national development indirectly, not sort of like directly. That mode has been predominant and one could even argue that it continues*
to be probably the major push factor for the programmes in social sciences. Arts has gone a bit more in sort of like the innovation mode, more for survival than for contribution to development. [...] So on the more teaching, human resource production, in as much as we’re thinking about shifting paradigms I do not see major shifts in paradigms. What we’ve tried to do is to incorporate within the programme the attachment mode, the attachment aspects that now our second-year students have to be attached to either the public, private sector or the NGO world or something, local government, in a way that we can sort of bring in the experiences of the real world or the development world into the training itself rather than waiting for them to finish. (Institutional leader)

Institutional stakeholders and policy documents also highlighted the importance of university research for development, particularly in areas such as health (e.g. combating HIV and malaria), poverty reduction, and engineering and technology:

Of course, the fact that we engage in research – research cannot be delinked from national development. In fact as we speak now our newly-approved strategic plan talks about us becoming more and more a research-centred university. We recognise that you cannot delink research from training. We realise that you cannot delink research from knowledge transfer partnerships and so on and so forth. But even more important, when you look at our strategic plans, in fact the current one as well as the one going out, we bring out the fact that we have a duty to link up with government and engage in poverty reduction. And of course if you are talking about poverty reduction, for the university what we do, you must conduct research. (Institutional leader)

So health is one area which I think higher education can make a very important contribution to national development. Another area is technology, engineering. We have a very vibrant engineering department here and they have been involved in research that answers problems over the issue of roads, road maintenance, road networks. The country has to develop; we have got to have the capacity to move goods and services from one part of the country to the other, and if we do not have well functioning roads, of course done by engineers, then we will have a problem. (Institutional leader)
The ultimate benefit of research lies not only in the generation of new knowledge but in the translation of knowledge into technologies, interventions and strategies effectively and appropriately delivered to the poor. In order to reach this objective, it is imperative that the entire research process be pursued within the context of contemporary knowledge, good ethics, effective policy, adequate resources and international cooperation. Within the context of Makerere University, research and innovations necessitate multi-level, multidisciplinary approaches that support the exploration of new ways of using these disciplinary perspectives and methodologies. (Makerere University 2008b: 4)

The current strategic plan, which covers the period 2008/09-2018/19, ties itself closely to the institution’s role in development as well as to continuing to strengthen the academic core. In terms of development, it builds on the development strategy of the previous strategic plan:

The overarching development strategy of the outgoing strategic plan was to contribute towards sustainable and equitable social, economic and technological development in Uganda. This was through the provision [of] quality graduates in sufficient numbers and relevant to national human resource needs, providing successful results of the university’s effort in research and playing an influential role in developing public policy through extension and outreach service. (Makerere University 2008a: 11)

The formulation of the current strategic plan was guided by the question: “How can Makerere University reposition herself to meet emerging development challenges in Uganda?” (ibid.: 4). In order to address this question, the plan was developed in a broadly consultative and participatory manner – both internally to the institution, as well as with key external stakeholders including selected government ministries, private sector bodies, and the NGO forum representing civil society (ibid: 7). As the vice-chancellor remarked in the foreword: “The consultations were wide ranging in order to ensure that the final product reflects both institutional and national aspirations” (ibid: 4).

The development of the current strategic plan also took into account a range of socio-economic, political and environmental concerns:

Makerere University’s 10-Year Strategic Plan is situated within the national, regional and global trends in the economic, social and political environment that impacts especially the Higher Education sector. In deriving her strategic directions therefore,
Makerere University took cognisance of these internal and external factors [...]. (ibid.: 9)

Part of the environmental scan included an overview of shifts in the Ugandan economy, with specific reference to the move towards a knowledge economy and the role that Makerere can play in this regard:

Uganda’s positive economic growth rate averaging 6% per annum for the last eighteen years and the associated sizeable structural shifts from an essentially agriculturally-driven economy to others such as transport and communication, tourism, manufacturing and construction, and the mining sectors mean that Uganda is on the path from service provision and towards a knowledge-driven economy. Makerere University finds herself therefore in a dynamic labour market and is challenged, in the ten-year planning period to produce relevant graduates with a combination of generalist skill as well as critical and reflective capacity and entrepreneurship. As such, Uganda’s increasing shift to a knowledge economy provides Makerere University the opportunity to prioritise research as a strategic thrust that will generate the requisite knowledge to power Uganda’s economy. (ibid.: 9)

The plan also aligns itself with a number of national policies including the National Strategic Plan for Higher Education (type of graduates that universities should be producing by 2015), the Uganda PEAP, and other policies relating to “decentralisation, environment protection, and affirmative action that are structured around economic management, production enhancement, competitiveness, and human development as strategic themes” (ibid.: 10). The environmental scan also takes into account the energy situation in Uganda and East Africa, population growth, globalisation and the information and communication technology revolution, as well as international agendas such as the Millennium Development Goals and NEPAD (ibid.: 10,12).

An institutional leader argued that while autonomy is important, as a public institution, it is equally important for the university to be accountable and relevant to national needs and priorities:

[...] it’s a question of accountability, that’s why we must link up with government and the private sector, that’s why we must continuously indicate that we are reacting to national needs, because that is a form of accountability, because we’re a public university. But it’s also important for you to continuously indicate that you are relevant, because I don’t think too many taxpayers would be amused for you to say: all I do is I produce critical thinkers, because at that level they won’t realise that it’s
the critical thinkers who in fact, at the end of the day, are helping national development. (Institutional leader)

To the extent that a role for the university in economic development forms part of the narratives of the institutional leadership and other senior academic staff, the question arises: what evidence is there that the institution is walking their talk? As such, we now turn our attention to an investigation of the policies, structures, programmes and funding that have been put in place relating to the institution’s role in economic development. It is important to note that it was beyond the scope of this study to assess or evaluate the effectiveness or impact of these initiatives. Instead, they are included here as part of our analysis of the vision that institutional stakeholders have for the university in relation to economic development.

3.3.2 Initiatives around research and innovation

Institutional policies, structures and appointments

The current strategic plan, as highlighted above, calls for the strengthening of research in order to contribute to powering the economy:

*The rise of the knowledge driven economy has made it imperative for universities to vigorously undertake research to generate knowledge to power national economies. Makerere University being the oldest University in the continent with elaborate infrastructure for research execution is uniquely positioned to provide leadership as a research University in Uganda. The strategic repositioning of Makerere University as a research driven University will enable Makerere to focus more on knowledge production to support evidence based decision making and power the growth of Uganda’s economy.* (Makerere University 2008a: 13)

Referring to the current strategic plan, an institutional leader highlighted the recent focus on the commercialisation of innovations:

*The innovations that result from research should be commercialised and we are toying with the idea of setting up incubation centres, business incubation centres. We are talking of also the spin-offs. Now if you have spin-offs – how do they address poverty? Simple. You provide employment to the graduates, they expand national output – so by expanding national output, by providing employment you address poverty one way or the other.* (Institutional leader)
The Makerere University Research and Innovations Policy (March 2008) also highlights the role of university research in national development and the application of knowledge to the benefit of the poor.

However, there were no policies, structures or appointments linking the university’s research to economic development specifically. To some extent, this could be seen as being embedded in the broader function of the School of Graduate Studies. According to the web site, the school is responsible for, amongst others, coordinating and administering research in the university; advising “on research priorities geared to the fulfillment of National Development Professional objectives”; and, acting as the link or bridge between the university and the world of work “in identifying research and courses that are relevant to the needs of industry, commerce, and professions etc.”

The Research and Innovations Policy provides guidelines on incentives and rewards for research. This will include, amongst others, that staff “spend at least 20% of their time on research and dissemination” with a number of strategies to achieve this (Makerere University 2008b: 8). While staff are not incentivised to undertake research that is specifically related to economic development, one of the strategies does address the need to “Develop, operationalise and review periodically guidelines on how to identify and reward staff for outstanding research and innovation” (ibid.).

Research funding

The university web site states that the institution’s sources of research funding include the government of Uganda, contributions from graduate and undergraduate students, about 1% of the university’s internally-generated funds from the faculties, and bilateral funds from development partners such as Sida/SAREC of Sweden, the Carnegie Corporation of New York, and NORAD (Norway). According to a number of respondents, while the university does set aside a small fund for research, the bulk of the university’s research funds come from these development partners, as one institutional leader described:

We have some money which comes from the university to support research – members of staff write proposals and we vet them and we give out money depending on the topic the researcher wants to engage in. But that’s not a very big fund, I think it comes to about 800 million Shillings, that’s very little money but it’s better than nothing. Then we also have leverage from these donor funds. Like now when we are writing proposals, the proposals which we push forward for support are

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4 School of Graduate Studies web site: http://sgs.mak.ac.ug/.
5 http://mak.ac.ug/index.php?option=com_content&task=view&id=50&Itemid=246
those proposals which are going to have a big impact economically and development-wise. (Institutional leader)

One of the goals of the university’s Research and Innovations Policy is to improve funding levels for research and innovation: “The Policy realises the importance of securing sufficient funds for staff members to conduct meaningful research, to attend national and international meetings, and to contribute to the research income of the University” (Makerere University 2008b: 9). Strategies to improve funding include, amongst others, committing at least 3% of internally-generated funds to research and innovation activities annually; requiring all research projects to contribute a percentage of research costs to institutional overheads/indirect costs; continuing to source funding from national and international organisations; and encouraging the private sector to contribute funding through contract research, sponsoring research chairs, and through joint ventures, licensing, patents and trademarks (ibid.: 9-10).

At the time of the interviews, institutional stakeholders reported that the Ministry of Education and Sports was talking about establishing a national research fund for universities. In this regard, one respondent said the following:

*The government appointed a visitation committee some two years ago and they came up with recommendations. As we talk now those recommendations are being tied into a government White Paper and one of the provisions of the White Paper is that government should fund research. As we talk now, in the coming fiscal year, 1 billion Shillings is going to be appropriated for research. Now 1 billion Shillings, you are talking about $500 000. It is small but at least that’s an effort, that’s a beginning. So that means now at the beginning the state actors are beginning to appreciate the role of research.* (Institutional leader)

One institutional leader spoke about the Uganda Millennium Science Initiative which is coordinated by the National Council for Science and Technology, and through which government makes available funds to researchers, particularly in the area of science and technology:

*So it is for purposes of conducting research directly linked to national development, but also curriculum review and curriculum development to ensure that we train personnel who fit in with what government recognises as the kind of skills they need.* (Institutional leader)
Research agenda

The Makerere University Research and Innovations Policy states that the university will periodically develop an institutional research agenda which, amongst others, must reflect national priorities. The strategies in this regard include the following (Makerere University 2008b: 6):

- Faculties, institutes, schools and colleges will formulate research priorities that will feed into the university research agenda;
- The priorities identified shall reflect national research objectives, priorities and relevant international trends;
- Research agenda should promote both basic and applied research; and
- The review of the research agenda will be pegged to the review of the university’s strategic plan.

According to the university web site\(^6\), Makerere has developed a multidisciplinary institutional research agenda which is informed by the government’s Poverty Eradication Action Plan. The research agenda themes include the following:

- Education for development
- Food, nutrition and value addition
- Sustainable environment development
- Good governance, equity (including gender) and service delivery
- Health (infectious and lifestyle-related diseases)
- Natural resources utilisation and conservation

Cross-cutting research activities include appropriate technology, economics, biotechnology, methodological studies, and staff development. The web site also states that research proposals that focus on a specific problem that may cut across several disciplines are given priority in funding.

According to an institutional leader, the university’s research agenda is driven by the university and researchers themselves, by national priorities and, at times, by the agendas of foreign donors:

*The research agenda we are following is largely driven by our national priorities. What is it that we want to do in our country? So the research we do here in Makerere, which is largely applied research, is research which is addressing the needs of the people of Uganda. For example, we support a lot of research into [...] the challenges universal secondary education is facing, the challenges of universal primary education. We support a lot of research in HIV/AIDS, in malaria. So this is research which is*

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\(^6\) http://mak.ac.ug/index.php?option=com_content&task=view&id=45&Itemid=240
addressing the important issues in this country. And of course it has some element of vetting; it’s vetted by the National Council for Science and Technology, especially the research that is science-related, and here they must be assured that the research you are doing is not jeopardising the situation in the country – they also have those elements. So to answer your question I think this research agenda is driven by the university, by the researchers. We also have research which is driven by interest from outside. If somebody gives you money, like we get money from Carnegie and NORAD, they say: your research should focus on food, nutrition and value addition. But that research we are doing is to address the food situation of this country, so it’s not entirely to address the food situation of these NORAD people, it’s to address the food situation of this country. (Institutional leader)

According to one institutional leader, the university develops its institutional research agenda in consultation with internal and external stakeholders:

In us coming with the university priorities there will be an engagement with many people involved in research in the university and also people outside the university who are involved in national research areas. We have a number of national research organisations – in agriculture, in health – and these will discuss with them to come up with a university research agenda which is a reflection of really what the country wants, areas that the country has defined as important for national development. (Institutional leader)

3.3.3 Initiatives around teaching and learning

Institutional policies, structures and appointments

There is no specific policy, structure or appointment linking university teaching to economic development. However, the current strategic plan does indicate the intention to shift towards ‘learner-centredness’ in order to produce graduates who can participate in a knowledge economy:

Makerere is to refocus from teacher-centred instruction to learner-centred problem based instruction providing experiential and flexible learning. The change in the pedagogic concept and inclusiveness of andragogical practices is expected to stimulate creative, critical and independent thinking among
learners. The shift in the instruction paradigm will in addition enable the University to cultivate in graduates both traditional academic and generalist skills, the skill set necessary to compete in the dynamic labour market of knowledge driven economies of the world. (Makerere University 2008a: 13)

In the strategic plan, the main goals in relation to teaching and learning are to increase access and to improve relevance and quality. With regard to access, one of the objectives is “To increase the proportion of graduate students to 20% of total enrolment by the end of 2015” (ibid.: 15). Others include institutionalising enrolment planning and strengthening graduate training and research. With regard to relevance and quality, one of the objectives is to “Create strategic linkages with professional bodies and with other stakeholders in offering experiential learning to students” (ibid.: 16).

**Linkages with the labour market**

It appears that the linkages with the labour market around teaching and academic programmes are largely limited and informal. For example, despite the fact that the government has identified specific disciplinary areas for targeting scholarships (as highlighted in 3.3.1 above), an institutional leader reported that the university does not pay particular attention to these identified fields because the role of the university is to produce critical thinkers in all fields:

*Well, for a university, I mean a university like Makerere, we’ve always been very broad in terms of the disciplines we offer or the programmes we offer; it’s both arts and humanities on the one hand, and science on the other. We have not specifically paid any special focus to those courses or programmes [identified by government], because I think for our university, our role is also quite different – we are supposed to produce critical thinkers, and I think somebody can be a critical thinker whether she is a historian or a medical personnel.* (Institutional leader)

An institutional leader talked about “demand-driven” courses or programmes where external communities are consulted about their specific skills or training needs, but it is not clear how extensive this form of engagement is.

According to the quality assurance policy that was recently approved, external stakeholders must be consulted when reviewing existing or designing new curricula. An institutional leader described this as follows:
When we talk about developing a programme or even reviewing it, you must bring evidence to the Academic Programmes Committee of Senate that you have consulted widely in terms of, for example, if it is within technology as a discipline, we want evidence that the Association of Professional Engineers, the Uganda Professional Engineers has been involved. If you are a lawyer we want evidence that the locals on the Uganda Law Society are aware of what you are doing, and so on and so forth. [...] We also have a representative of the National Planning Authority on the Academic Programmes Committee and also on the Quality Assurance Committee of our Senate and Council. Because really the National Planning Authority, which is a government body, should be able to tell us whether what we are focusing on in terms of training and research is really what we should focus on. (Institutional leader)

As part of its monitoring and evaluation strategy, the university plans to undertake tracer studies and surveys of Makerere graduates, the results of which will feed into curricula review:

*The fourth dimension of monitoring and evaluation will be in the form of tracer studies that will be conducted after every five years to elicit the views and impressions of the employers on the performance of Makerere University graduates in the world of work. The graduates in employment will also be covered in the surveys. The reports about the labour market performance of Makerere University graduates and the recommendations there in will feed into the curricular reviews of the University. (Makerere University 2008a: 26)*

One respondent spoke about recent demands for career guidance, employment skills and so on from social science students but that these are not yet part of the formal curriculum:

*Those now we are running as part of the Faculty; in fact starting in this academic year we have a series of these where we’re inviting people from outside of the academia to come and have sessions as part of the training. The problem though is that these are not examinable and what is not examinable is not attended – again because of the way the students have progressed in the educational system. So I think that is now pushing us to a level where we’re thinking about reviewing the curriculum and having these as part and parcel, either as modules within existing programmes and projects or as fully-fledged programmes. (Institutional leader)*
Part 4
The Makerere University academic core

4.1 Introduction

As outlined in the analytical framework (Section 1.1.3), the nature, size and continuity of the academic core is a key factor in the extent to which universities can make a significant and sustained contribution to development. The academic core of universities refers to teaching via academic degree programmes and to research activities (often, but not exclusively of the basic type). In societies where there is a strong pact between higher education and society, the universities have been able (and allowed) to develop a strong core of academic activities that forms the basis for all their activities. The stronger its academic core the easier it will be for a university to defend its institutional identity and integrity against external or internal threats. In addition, a strong, institutionalised academic core will allow the university to invest a large part of its resources in the maintenance and further strengthening of the core, which can be regarded as the main foundation under its specific institutional identity.

According to Burton Clark (1998), when an enterprising university evolves a stronger steering core, and develops an outreach structure, its heartland is still in the traditional academic departments, formed around disciplines, and some interdisciplinary fields. The heartland is where traditional academic values and activities such as teaching, research and training of the next generation of academics occur.

For the purposes of this project, we have used the following to operationalise the concept of the academic core and to identify important preconditions for the development of a strong academic core in African universities:

- **Increased enrolments in science, engineering and technology (SET):** In African governments and foreign development agencies alike, there is a strong
emphasis on SET as important drivers of development (Juma 2005). Included in SET are the agricultural sciences, architecture and urban and regional planning, computer and information science, health sciences and veterinary sciences, life sciences and physical sciences.

- **Increased postgraduate enrolments:** The knowledge economy and universities are demanding increased numbers of people with postgraduate qualifications.
- **A favourable academic staff to student ratio:** The academic workload should allow for the possibility of research and PhD supervision.
- **A high proportion of academic staff with doctoral degrees:** Research (CHET 2010) shows that there is high correlation between staff with doctorates, on the one hand, and research output and the training of PhD students, on the other.
- **Adequate research funding per academic:** Research requires government and institutional funding and ‘third-stream’ funding from external sources such as industry and foreign donors.
- **High graduation rates in SET fields:** Not only is it important to increase SET enrolments, it is crucial that universities achieve high success rates in order to respond to the skills shortages in the African labour market in these fields.
- **Increased knowledge production in the form of doctoral graduates:** There is a need for an increase in doctoral graduates for two reasons. Firstly, doctoral graduates form the backbone of academia and are therefore critical for the future reproduction of the academic core. Secondly, there is an increasing demand for people with doctoral degrees outside of academia (e.g. in research organisations and other organisations such as financial institutions).
- **Knowledge production in the form of research publications recognised in ISI journals:** Academics need to be producing peer-reviewed research publications in order for the university to participate in the global knowledge community and to contribute to new knowledge and innovation.

The preconditions outlined above are translated into the following academic core indicators:

Indicator 1: Programmes – Strong SET enrolments and graduations
Indicator 2: Postgraduates – Increased enrolments and graduations
Indicator 3: Teaching loads – Improving academic staff/student ratios
Indicator 4: Qualified staff – High percentage academic staff with PhDs
Indicator 5: Funding – Availability of research funds
Indicator 6: Research output – High or improving output.

In order to develop a benchmark against which the Makerere academic core could be assessed, an analysis was undertaken of South Africa’s 22 contact universities and the seven African universities included in the current study, based on seven input indicators and two output indicators. (See Appendix 2 for a description of the cluster analysis methodology, the detailed data for the institutions included in the analysis, and a graph showing the results of the analysis.) A cluster analysis of the results produced the following four clusters of institutions:
• **Cluster 1** consists of the five South African universities which have a strong focus on both undergraduate and postgraduate studies, which are well-resourced in teaching and in research, and which have strong research outputs.

• **Cluster 2** consists of two South African and five African universities which have a primary focus on undergraduate studies, which have adequate undergraduate teaching resources, and which have good undergraduate but moderate research output rates.

• **Cluster 3** consists of eight South African and two African universities which have high proportions of SET students, which have a main focus on undergraduate studies, but which do not have available the same levels of undergraduate teaching resources as Cluster 2. Their undergraduate output rates are satisfactory, but their research output rates fall below the targets set for South African universities.

• **Cluster 4** consists of seven South African universities which have low proportions of postgraduate students. Their resource levels are low compared to the other three clusters, their output rates at undergraduate level are unsatisfactory, and their research performance is poor.

Makerere appears in Cluster 2 together with Dar es Salaam, Eduardo Mondlane, Botswana, Mauritius, Johannesburg and Limpopo. In the analyses which follow Makerere (which had an enrolment of 34 000 in 2007) is linked to (a) the other African university in Cluster 2 (Dar es Salaam which had an enrolment of 21 000 in 2007) and (b) Johannesburg (which had an enrolment of 42 000 in 2007).

Makerere is also compared to the Cluster 1 university which is closest to it in terms of enrolment size. This is Witwatersrand which had an enrolment of 25 000 in 2007.

### 4.2 SET enrolments and graduations

Figure 4.1 shows that Makerere's student growth between 2001 and 2007 was mainly in SET. Total enrolments increased by 7 600 in 2007 compared to 2001, and 6 400 of these were in SET majors. Makerere's proportion of SET majors in its total enrolment doubled from 16% in 2001 to 32% in 2007.
Figure 4.1: Makerere: Enrolments by field of study

Table 4.1: Makerere: Total enrolments by field of study (thousands)

<table>
<thead>
<tr>
<th>Field of study</th>
<th>2001</th>
<th>2003</th>
<th>2005</th>
<th>2007</th>
<th>Average annual growth rate: 2000-2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science and technology</td>
<td>4.4</td>
<td>5.6</td>
<td>10.6</td>
<td>11.0</td>
<td>16.7%</td>
</tr>
<tr>
<td>Business and management</td>
<td>5.0</td>
<td>4.5</td>
<td>4.0</td>
<td>5.7</td>
<td>2.2%</td>
</tr>
<tr>
<td>Social sciences, humanities and education</td>
<td>17.4</td>
<td>21.5</td>
<td>20.3</td>
<td>17.7</td>
<td>0.3%</td>
</tr>
<tr>
<td>Totals</td>
<td>26.8</td>
<td>31.6</td>
<td>34.9</td>
<td>34.4</td>
<td>4.3%</td>
</tr>
</tbody>
</table>

Compared to the other two universities from Cluster 2, Makerere had the lowest proportion of SET students in 2007 (Figure 4.2). Its proportion had grown, however, while that of Dar es Salaam had dropped. Johannesburg had a small growth in its proportion of SET enrolments, and Witwatersrand a small drop.
Figure 4.2: Comparison of science and technology majors as % of total enrolment

Table 4.2: Comparison of total science and technology enrolments (thousands)

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2003</th>
<th>2005</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Makerere</td>
<td>4.4</td>
<td>5.6</td>
<td>10.6</td>
<td>11.0</td>
</tr>
<tr>
<td>Dar es Salaam</td>
<td>4.2</td>
<td>5.3</td>
<td>5.6</td>
<td>6.6</td>
</tr>
<tr>
<td>Johannesburg</td>
<td>9.0</td>
<td>10.9</td>
<td>13.5</td>
<td>13.6</td>
</tr>
<tr>
<td>Cluster 1: Wits</td>
<td>9.8</td>
<td>11.5</td>
<td>11.7</td>
<td>11.6</td>
</tr>
</tbody>
</table>

The data in Figures 4.3 and 4.4 measure output performance in terms of a university’s ratio between graduates in any given year and student enrolments in that same year. These ratios serve as proxies for a cohort output rate which indicates what proportion of any cohort entering a university can be expected to eventually complete their degrees or diplomas. The bench mark of 25% is a proxy for a cohort success rate of 75% of entering students obtaining their degrees or diplomas.

Figure 4.3 shows that Makerere’s average graduate rate for SET remained steady, despite the rapid increase that occurred in SET student enrolments between 2001 and 2007. The average rate of 22% for the period is equivalent to a cohort success rate of 65%.
Figure 4.3: Makerere: Graduation rates by field of study

Table 4.3: Makerere: Total SET graduates

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2003</th>
<th>2005</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Makerere</td>
<td>1 009</td>
<td>1 227</td>
<td>2 099</td>
<td>2 472</td>
</tr>
</tbody>
</table>

Figure 4.4 shows that Makerere's performance in producing SET graduates was higher than those of the other three universities. Makerere's average cohort success rate for 2001-2007 was 65%, Dar es Salaam's 60%, Witwatersrand's 60% and Johannesburg's only 53%. This indicates that Makerere was, in terms of its SET graduate outputs, the most efficient university in the group.
Figure 4.4: Comparison of science and technology graduation rates

Table 4.4: Comparison of total science and technology graduates

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2003</th>
<th>2005</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Makerere</td>
<td>1 009</td>
<td>1 227</td>
<td>2 099</td>
<td>2 472</td>
</tr>
<tr>
<td>Dar es Salaam</td>
<td>695</td>
<td>668</td>
<td>1 370</td>
<td>1 535</td>
</tr>
<tr>
<td>Johannesburg</td>
<td>1 463</td>
<td>1 723</td>
<td>2 435</td>
<td>2 708</td>
</tr>
<tr>
<td>Cluster 1: Wits</td>
<td>1 726</td>
<td>1 841</td>
<td>2 442</td>
<td>2 291</td>
</tr>
</tbody>
</table>

4.3 Postgraduate enrolments and graduations

Figure 4.5 shows that the proportion of postgraduate students in Makerere's total enrolment grew from 6% in 2001 to 9% in 2007. Even though its postgraduate total had grown between 2001 and 2007, it still had the lowest percentage of postgraduates in the selected group of universities. The figure also indicates that there is a considerable gap between Makerere's proportion of postgraduate students and that of a strong research university such as Witwatersrand.
Figure 4.5: Comparison of % postgraduates in enrolment total

Table 4.5: Comparison of total postgraduate enrolments in all fields of study

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2003</th>
<th>2005</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Makerere</td>
<td>1 519</td>
<td>1 151</td>
<td>2 788</td>
<td>3 026</td>
</tr>
<tr>
<td>Dar es Salaam</td>
<td>702</td>
<td>992</td>
<td>1 051</td>
<td>2 796</td>
</tr>
<tr>
<td>Johannesburg</td>
<td>6 568</td>
<td>7 503</td>
<td>7 513</td>
<td>5 999</td>
</tr>
<tr>
<td>Cluster 1: Witwatersrand</td>
<td>6 393</td>
<td>7 423</td>
<td>7 730</td>
<td>7 896</td>
</tr>
</tbody>
</table>

Table 4.6 gives, for Makerere only, details of masters and doctoral enrolments and graduates over the period 2001 to 2007. The table shows that rapid growth occurred in masters enrolments as well as masters graduates. Masters enrolments increased by 1 600 (or 137%) and masters graduates by 435 (or 141%) in 2007 compared to 2001. Doctoral enrolments grew by a total of only four and doctoral graduates by 12 in 2007 compared to 2001.
Table 4.6: Makerere: Master and doctoral enrolments and graduates

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Masters</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enrolments</td>
<td>1,167</td>
<td>864</td>
<td>2,153</td>
<td>2,767</td>
<td>15.5%</td>
</tr>
<tr>
<td>Graduates</td>
<td>309</td>
<td>466</td>
<td>686</td>
<td>744</td>
<td>15.8%</td>
</tr>
<tr>
<td><strong>Doctoral</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enrolments</td>
<td>28</td>
<td>54</td>
<td>59</td>
<td>32</td>
<td>2.3%</td>
</tr>
<tr>
<td>Graduates</td>
<td>11</td>
<td>21</td>
<td>25</td>
<td>23</td>
<td>13.1%</td>
</tr>
<tr>
<td><strong>Total masters + doctoral</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enrolments</td>
<td>1,195</td>
<td>918</td>
<td>2,212</td>
<td>2,799</td>
<td>15.2%</td>
</tr>
<tr>
<td>Graduates</td>
<td>320</td>
<td>487</td>
<td>711</td>
<td>767</td>
<td>15.7%</td>
</tr>
</tbody>
</table>

Since doctoral students, especially in SET, are essential parts of research programmes, Figure 4.6 can be used as a first measure of a university's involvement in research. A university which has strong research programmes, should have reasonably high proportions of doctoral students in its grouping of masters plus doctoral students.

The figure shows that, for the period 2001-2007, Makerere enrolled on average 42 masters students for each doctoral student enrolled, which is a very high ratio. The comparable ratios for the other Cluster 2 universities are: Dar es Salaam 11 masters enrolments per doctoral enrolment, and Johannesburg 3.5. Witwatersrand, which has a stronger research record than Johannesburg, had on average 6 masters student per doctoral enrolment.
Figure 4.6: Comparison of doctoral enrolments as % of masters and doctoral enrolments

![Graph comparing doctoral enrolments as % of masters and doctoral enrolments]

Table 4.7: Comparison of masters and doctoral enrolments

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2003</th>
<th>2005</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Masters</td>
<td>Doctoral</td>
<td>Masters</td>
<td>Doctoral</td>
</tr>
<tr>
<td>Makerere</td>
<td>1167</td>
<td>28</td>
<td>864</td>
<td>54</td>
</tr>
<tr>
<td>Dar es Salaam</td>
<td>552</td>
<td>54</td>
<td>783</td>
<td>72</td>
</tr>
<tr>
<td>Johannesburg</td>
<td>1954</td>
<td>447</td>
<td>2067</td>
<td>600</td>
</tr>
<tr>
<td>Cluster 1: Witwatersrand</td>
<td>3656</td>
<td>686</td>
<td>4166</td>
<td>620</td>
</tr>
</tbody>
</table>

Figure 4.7 compares the total numbers of doctoral graduates produced by each of the four universities between 2001 and 2007. Johannesburg produced 39% and Witwatersrand 47% of the total doctoral graduate output of these four universities between 2001 and 2007.
**Figure 4.7:** Comparison of total doctoral graduates

![Bar chart showing comparison of doctoral graduates from 2001 to 2007 for Makerere, Dar es Salaam, Johannesburg, and Cluster 1: Wits.]

**Table 4.8:** Comparison of doctoral graduates

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2003</th>
<th>2005</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Makerere</td>
<td>11</td>
<td>21</td>
<td>25</td>
<td>23</td>
</tr>
<tr>
<td>Dar es Salaam</td>
<td>10</td>
<td>9</td>
<td>7</td>
<td>20</td>
</tr>
<tr>
<td>Johannesburg</td>
<td>65</td>
<td>92</td>
<td>88</td>
<td>73</td>
</tr>
<tr>
<td>Cluster 1: Wits</td>
<td>79</td>
<td>73</td>
<td>101</td>
<td>134</td>
</tr>
</tbody>
</table>
4.4 Student-staff ratios

Data on the formal teaching hours carried by academic staff at the four universities is not available. Use has therefore been made of proxies which compare student to academic staff growth rates, and ratios of full-time equivalent (FTE) students to FTE academic staff.

Table 4.9 shows how Makerere's totals of FTE students to FTE academic staff changed over the period 2001 to 2007. The largest gap between growth in FTE students and FTE academic staff occurred in SET, with FTE students growing at an average annual rate of 16.3% and FTE academic staff at an average annual rate of 4.8%. The result was that the FTE student to FTE academic staff ratio in SET rose from 6:1 in 2001, to 11:1 in 2007. This was still a favourable student to staff FTE ratio.

In the field of humanities plus education, Makerere had favourable ratios of FTE students to FTE academics throughout the period 2001 to 2007. It had, however, exceptionally high and unfavourable ratios of FTE students to FTE academic staff in the field of business and management.

Table 4.9: Makerere: FTE students and academic staff

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Science and technology</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FTE students</td>
<td>3 698</td>
<td>4 583</td>
<td>8 758</td>
<td>9 142</td>
<td>16.3%</td>
</tr>
<tr>
<td>FTE academic staff</td>
<td>615</td>
<td>698</td>
<td>789</td>
<td>814</td>
<td>4.8%</td>
</tr>
<tr>
<td>FTE student to FTE academic ratio</td>
<td>6.0</td>
<td>6.6</td>
<td>11.1</td>
<td>11.2</td>
<td></td>
</tr>
<tr>
<td><strong>Business and management</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FTE students</td>
<td>4 119</td>
<td>3 516</td>
<td>2 939</td>
<td>4 412</td>
<td>1.2%</td>
</tr>
<tr>
<td>FTE academic staff</td>
<td>39</td>
<td>39</td>
<td>47</td>
<td>46</td>
<td>2.8%</td>
</tr>
<tr>
<td>FTE student to FTE academic ratio</td>
<td>105.6</td>
<td>90.2</td>
<td>62.5</td>
<td>95.9</td>
<td></td>
</tr>
<tr>
<td><strong>Humanities plus education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FTE students</td>
<td>13 540</td>
<td>17 115</td>
<td>17 211</td>
<td>14 422</td>
<td>1.1%</td>
</tr>
<tr>
<td>FTE academic staff</td>
<td>814</td>
<td>1 017</td>
<td>852</td>
<td>720</td>
<td>-2.0%</td>
</tr>
<tr>
<td>FTE student to FTE academic ratio</td>
<td>16.6</td>
<td>16.8</td>
<td>20.2</td>
<td>20.0</td>
<td></td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FTE students</td>
<td>21 357</td>
<td>25 214</td>
<td>28 908</td>
<td>27 976</td>
<td>4.6%</td>
</tr>
<tr>
<td>FTE academic staff</td>
<td>1 468</td>
<td>1 754</td>
<td>1 688</td>
<td>1 580</td>
<td>1.2%</td>
</tr>
<tr>
<td>FTE student to FTE academic ratio</td>
<td>14.5</td>
<td>14.4</td>
<td>17.1</td>
<td>17.7</td>
<td></td>
</tr>
</tbody>
</table>
Figure 4.8 compares FTE student to FTE academic staff ratios for 2007. The average ratio for all four universities was less than 20, which is regarded as satisfactory in terms of South African norms. The SET ratios of all four are satisfactory, but problems may exist with their high ratios for business and management.

**Figure 4.8:** Comparison of 2007 FTE student-staff ratios

![Graph comparing FTE student-staff ratios for 2007](image)

Figure 4.9 compares the four universities' 2007 totals of permanent academic staff and FTE academic staff. Figure 4.10 can function as a proxy of the load carried by permanent academic staff members, who are expected to be the main supervisors of research students and producers of research publications.

Figures 4.9 and 4.10 show that the permanent academic staff at Johannesburg has the highest level of support from temporary and part-time academic staff. It had, in 2007, 871 permanent academics and the equivalent of 1 300 full-time, part-time and temporary academic staff. Makerere had 1 180 permanent academics and the equivalent of a further 400 temporary and part-time academic staff members.
Figure 4.9: Comparison of totals of permanent and FTE academic staff (2007)

Figure 4.10: Comparison of ratios of FTE to permanent academic staff (2007)
4.5 Academic staff qualifications

Figure 4.11 compares the 2007 proportions for the cluster of the permanent academic staff who have either a masters or a doctorate as their highest formal qualification. Dar es Salaam's figure of 50% of permanent staff with doctorates is what could be expected of a university with a strong focus on research. Makerere's proportion of 31% is below the average for South African universities.

Figure 4.11: Comparison of highest formal qualifications of permanent academics (2007)

4.6 Research funding

The information in Figures 4.12 and 4.13 attempts to set out the totals which each university had available for research in 2007. It should therefore reflect research income rather than expenditure on research.

In their annual income statements, South African universities report on their research funding in terms of recurrent research income and research contracts for designated purposes. Witwatersrand's 2007 income statements gave its recurrent research income as R 5.2 million and its designated research contract

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7 It must be noted that all universities in the sample appear to use different means to estimate their research income. For the purposes of comparison where no figures have been supplied a percentage of university income has been used. These figures however are not reliable and more work needs to be done in further studies to accurately track university research income.
income as R 469.0 million. Johannesburg's 2007 income statements gave its recurrent research income as R 22.7 million and its research contract income as R 7.2 million.

Makerere and Dar es Salaam did not provide specific information on research funding. The following amounts were extracted from their financial data for 2006/07 and have been assumed to be research funding for the purposes of the analyses which follow:

- Makerere: private gifts and grants = Ush 15 166 million (or 14% of total income), and
- Dar es Salaam: funding from donors = TZS 9 513 million (or 16% of total income).

The calculations of market rate dollars are based on average exchange rates quoted by the central banking authorities of each country.

The calculation of Purchasing Power Parity dollars (PPPS) is based on estimates contained in the 2008 publication on World Development Indicators (World Bank 2008). Because these estimates are based on 2005 exchange rates, the following method was used for the 2007 calculations:

- The indicator set gives for each country a ratio between the PPP conversion factor and the market exchange rate. For example, the South African ratio is given as 0.61, based on a market exchange rate of R 6.4 per USD in 2005.
- The 2007 calculations assume that the 2005 ratio will apply again. So the 2007 PPP conversion factor is taken to be 2005 ratio times 2007 market exchange rate. For example, the conversion factor for South Africa is calculated as 2005 ratio times 2007 exchange rate = 0.61 X 7.0 = 4.27.

These calculations are based the research income totals referred to above. The amounts in local currency were converted to market rate USD and PPP$ using the methodology referred to above. The conversion rates used were these:

- UDSM market rate = TZS 1 252 per USD
  UDSM purchasing power parity = TZS 438 per PPP$

- Makerere market rate = Ush 1 822 per USD
  Makerere purchasing power parity = Ush 656 per PPP$

- South African universities market rate = R 7.0 per USD
  South African universities purchasing power parity = R 4.27 per PPP$
Figure 4.12: Comparison of research income in market rate USD and PPP$ (millions)

Figure 4.13 is based on the income totals in Figure 4.12 and the permanent academic staff totals in Figure 4.9. The ratios show that the Cluster 1 university, Witwatersrand, had at 2007 market rate values USD 67 800 in research income available per permanent academic. The comparable 2007 market rate values per permanent academic were USD 4 900 for Johannesburg, USD 3 300 for Dar es Salaam, and only USD 700 for Makerere.

The PPP$ figures show that Witwatersrand had available 56 times more research funding per permanent academic than Makerere, 17 times more than Dar es Salaam, and 14 times more than Johannesburg.
4.7 Research outputs

For the purposes of this study, research outputs are measured in terms of research publications\(^8\), and doctoral graduates. Table 4.10 lists Makerere’s totals of research publications and doctoral graduates for the period 2001–2007.

**Table 4.10: Makerere: Research outputs**

<table>
<thead>
<tr>
<th>Year</th>
<th>Research publications</th>
<th>Doctoral graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>73</td>
<td>11</td>
</tr>
<tr>
<td>2003</td>
<td>107</td>
<td>21</td>
</tr>
<tr>
<td>2005</td>
<td>118</td>
<td>25</td>
</tr>
<tr>
<td>2007</td>
<td>233</td>
<td>23</td>
</tr>
</tbody>
</table>

---

\(^8\) The research publication data presented here are based on the peer reviewed research publications data in the Web of Science citation database within the ISI Web of Knowledge, produced by Thomson Reuters. The database captures papers from all countries that are published in journals that meet certain criteria of quality as determined by Thomson Reuters.
Figure 4.14 deals only with research publication units. The target is based on the assumption that a permanent academic should publish at least one research article every two years. The data in the graph show that Witwatersrand exceeded this target and that Johannesburg came close to it. The ratios of Makerere and Dar es Salaam suggest that each permanent academic will publish one research article every 10 years.

**Figure 4.14**: Comparison of research publication units per permanent academic

![Graph showing research publication units](image)

Figure 4.15 sets out ratios between doctoral graduates and permanent academic staff, with the target again being derived from the research output targets used in the South African higher education system. In this case, the target takes account of the productivity of academic staff in terms of the total of doctoral graduates produced in a given year divided by the total of permanent academic staff employed in that year. The target ratio of 10% is based on these calculations:

At least 50% of the permanent staff of a university should be supervising at least one doctoral student, and these students should take on average five years to complete their degrees. So a university with (say) 100 permanent academics should enrol at least 50 doctoral students, and 20% of these should graduate each year. The ratio between permanent staff and doctoral graduates should therefore be at least 10/100 = 10%.

The data in the graph show that in 2007 Witwatersrand exceeded the target and that Johannesburg came close to it. In 2001 both these universities missed but were close to the target. The other two universities in the group fell well short of the target of 10% in both 2001 and 2007.
Figure 4.15: Comparison of doctoral graduates in given year as % of permanent academics employed
Part 5

The engagement and development-related activities of Makerere University

AT A GLANCE

- University engagement and linkages with government and industry
- Incentives for academics to engage in development-related activities
- Coordination of development activities
- Connectedness of economic development-related projects/centres to the academic core

5.1 Introduction

In order to ensure that the core activities of teaching and research are to some extent aligned with national development priorities and can thereby contribute to development in society, universities increasingly emphasise the need to engage with relevant external stakeholders. Furthermore, much of what might be termed the development-related activities of the university usually fall within the so-called ‘third mission’, which is variously referred to as ‘engagement’, ‘service’ or ‘community outreach’. This could include academics serving on committees in the public or private sector, providing support to small businesses, responding to requests for short courses, or undertaking contract research for outside clients. More often than not, the economic development-related projects and activities of the institution fall under its engagement function.

In the first part of this section, we explore Makerere University’s engagement with its key external stakeholders, namely government, industry and foreign donors. In the second part of the section, we turn our attention to an analysis of the extent of the connectedness of the economic development-related centres and projects included in this study.
5.2 Engagement and linkages with external stakeholders

5.2.1 University-government-industry linkages

The third strategic area of the university’s current strategic plan is “Partnerships and Networking” which implies partnerships with both government and the private sector in relation to both the teaching and research functions of the institution. For example, the two goals are “To create an enabling environment for public and private sector interface in the promotion of education in a competitive setting” and “To provide a partnership framework for assessment and utilisation of University products in the value chain” (Makerere University 2008a: 18). The strategies for the first of these goals include involving stakeholder participation in the university policy agenda; collaborating and networking with public and private sector institutions; and, creating research and technology innovation and incubation business centres. The strategies for the second goal include involving public and private sector participation in curricula development; involving stakeholder participation in planning, supervision and evaluation of the students on field attachment; and creating a resource-pool of university expertise for the public and private sectors to utilise.

However, despite examples of linkages with government and industry (or private sector) at the level of projects, there was not much evidence of strong engagement with the public and private sectors. For example, an institutional leader reported that the university encourages disciplines to form consulting firms. An example is Technology Consultants Ltd (TECO)9 which is based in the Faculty of Technology whose engineers, architects etc bid for external consultancy work. But, another respondent reported that government frequently uses foreign firms rather than locals for consultancies, while another spoke about limited trust between government and the university and that the government does not always recognise the value of the institution: “I think their problem is it takes them long to see the use of what we are doing with the communities”.

Other institutional stakeholders spoke about the lack of interaction with the private sector:

There’s no private sector in this country. It’s not there.
(Institutional leader)

Generally speaking, the culture of the private sector in this country, and I think in many developing countries – supporting research is not yet there. (Senior academic)

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9 TECO web site: http://www.teco.co.ug/.
One respondent said that it is quite difficult changing the mindsets of some academics to work with industry:

That’s one of the biggest challenges that we have in this programme – the mindset – because the academic now, the conventional professor, when you tell him that you want him to design an appropriate package for a pineapple to go to Sudan on a bumpy road, to him he doesn’t see this as academic. So he says: no, don’t waste my time with that, I’m helping somebody else. So that mindset is very difficult. If the professor does not see that it’s going to make a publication in an academic journal out of his research, he doesn’t come. But I’ve tried to prove to them that, yes, you can design an academic research out of a need in a business cluster. (Senior academic)

The Makerere University Private Sector Forum has been established to try to facilitate greater linkages between the university and the private sector:

We have recognised that we need the private sector to meaningfully invest in the university. First and foremost we need to continuously remind the private sector that we do have the human resource capable of undertaking research and innovations, but we don’t have the capacity to do the marketing. So through this Private Sector Forum we are linking up with them so that when they have needs they know that we are here, we do the research part and then we translate it into what they need in industry – and I think that also is a new thing because of where we are coming from. (Institutional leader)

5.2.2 Incentives, rewards and coordination

As highlighted earlier, there are incentives for academics to undertake research. However, there are no incentives or rewards for research or other core activities linked specifically to economic development.

In terms of the coordination of external linkages, the Department of Planning and Development deals with the foreign donors. According to a staff member interviewed, questions are asked of prospective donors in terms of the extent to which their agendas align with national development needs in Uganda, such as poverty reduction:

You find that when we say NORAD or Sida or I@Mak or whatever, those big projects, the driving factor is: how are they addressing poverty? How do they link with the community? What do they do out there? So if you go into the profile of the
Norwegian Institutional Development Programme you will find that the basic components within that programme are targeting poverty reduction. (Institutional leader)

According to one institutional leader, some foreign donors, such as SIDA, fund research that is in line with national priorities – as agreed at a joint donor conference in Paris – but that other donors drive their own agendas. In the latter cases, the university would prefer to not accept the funds:

We have not had a problem with the funders in the areas of research that they won’t support. I talked about Sida. The research projects Sida supports originate from here. And again, if they can follow what they agreed in Paris, on the joint donor conference in Paris, where they will support national priorities, where countries identify their priorities and these donors come in to support them. But this is not always the case; there are some donors who are really hard and that’s what they want done is what will be done or else they withdraw their money. And those ones if they want to take their money they can take their money. (Institutional leader)

This was echoed by another respondent:

That’s very much in line with the Paris declaration on effectiveness whereby donors should not impose their agenda – the respective countries or institutions should be in the driving seat in as far as agenda-setting is concerned. In our engagement with our development partners it is our agenda, they’ve been buying into our agenda – we have not had a situation where – I would frown at a scenario where a donor comes and tells us that a, b, c, d. (Institutional leader)

5.2.3 Summary

In summary, there was very little evidence in either the interviews with institutional stakeholders or in policy and strategy documents of strong linkages with government or industry, although there was some evidence of the intention to strengthen these. There was also no evidence of formal structures or platforms for interaction between these role-players. At the same time, while there are incentives for academics to engage in research, there do not appear to be any specific incentives or arrangements to encourage university staff to get involved in engagement or development-related work – whether with government or industry. The unit responsible for promoting and coordinating linkages with external stakeholders does seem to play an
important role in asserting the university’s strategic objectives and agenda when negotiating funding with foreign donors.

5.3 The connectedness of development activities to the academic core

A key issue for the relationship between higher education and economic development is to establish a productive relationship between knowledge and connectedness. On the one hand, if there is an overemphasis on the basic knowledge activities of teaching and research – in other words, an excessive inward orientation towards strengthening the academic core – this results in the university becoming an ‘ivory tower’. Or, if the academic core is weak, an overemphasis on knowledge results in the ‘ancillary’ role of the university (i.e. no direct role in development). On the other hand, if there is an overemphasis in the university on connecting to development activities, then it weakens the academic core and the university has little new or relevant knowledge to offer in the exchange relationship.

The challenge for universities, then, is to deal with this inherent tension between ‘buffering’ (protecting) the core technologies of the institution, and ‘bridging’ (linking) those with external actors (Scott 2001: 199-211). In reality, the boundaries between internal and external are not that clear cut. A number of theorists, such as Gibbons et al. (1994) and Scott (2001), have argued that during globalisation and its associated ‘new’ forms of knowledge production, the boundaries are becoming increasingly blurred and permeable.

The higher education studies literature describes this problem in terms of the conceptual notion of ‘coupling’ (Scott 2001; Weick 1976); that is, the extent to which the core and the external (or ‘periphery’) are linked with, or connected to, one another. In ‘tight coupling’, the boundary is weak and the university is in a direct, ‘instrumental’ relationship with external actors such as government or industry. In ‘loose-coupling’, the boundary is stronger, such as in the traditional notion of the university as a self-governing institution, which assumes an indirect contribution to development. The more complex relationship is with the ‘engine of development’ notion where there are multiple, simultaneous forms of knowledge production and exchange.

For the purposes of this study, we are using the term ‘connectedness’ to refer to the relationship (and tension) between the inward focus on strengthening and maintaining the academic core, and the outward focus on linking with external stakeholders and development. We operationalised ‘connectedness’ along two dimensions. The first dimension is ‘articulation’ which has a number of aspects. Firstly, it refers to the extent to which the aims and activities of development-related activities articulate with national development priorities and the university’s strategic objectives. Secondly, it refers to the linkages the project has with two of the groups of stakeholders in the triangle – the
government (usually through specific government departments / agencies) and external stakeholders (e.g. industry, small businesses, NGOs or community groups such as fishers or small-scale farmers). In particular, our focus is on the extent to which there are linkages with an ‘implementation agency’, (i.e. an external body which takes up the knowledge and/or its products generated or applied through research or training). Thirdly, articulation takes into account linkages generated through sources of funding in two respects: whether the project/centre obtains funding from one or more of the three stakeholder groups (government, an external funder or the university itself); and the extent to which the project/centre develops a relationship with its funders over time. This latter aspect is determined through the nature of the financial sustainability of the project.

The second dimension focuses on the extent to which development activities serve to strengthen the academic core of the university. This was operationalised in terms of the extent to which the work undertaken in projects/centres feeds into teaching or curriculum development; is linked to the formal training of students; enables academics to publish in academic publications (journals, books etc); is linked to international academic networks; and, generates new knowledge (versus applying existing knowledge).

These various aspects relating to articulation and strengthening the academic core were converted into indicators which could then be applied to an analysis of the development-related projects and centres included in the study. On the basis of the indicator ratings, the projects/centres were plotted on a graph depicting the intersection between articulation and strengthening the academic core.

In this section, we present the analysis of the connectedness of selected development-related activities at Makerere. These projects, which have an economic development or poverty reduction focus, were identified by the institutional leadership for inclusion in the study.

It should be noted that this method of analysis is a work-in-progress and, in the context of this study, has two possible limitations. The first is that the method of analysis has been developed since completion of the data collection which means that there are some areas of the project data which were not explored in great detail during the interviews. We have, as far as possible, attempted to obtain this additional data from project leaders in the drafting of this report. A second limitation is that the analysis which follows is based on a small number of projects rather than a large representative sample. In addition, the projects selected have an in-built bias since they were selected by institutional leadership on the basis of their economic development or poverty reduction focus. Despite these limitations, however, we believe that the analysis that follows is an illuminating first step towards the development of a tool which can enable institutions and donors to think critically and strategically about the
implications of different models of funding and engagement or development-related activities.

5.3.1 A brief overview of the projects

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<th>Community-Based Education and Service (COBES)</th>
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<td><strong>Location</strong></td>
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<td><strong>Project leader</strong></td>
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<td><strong>Timeframe</strong></td>
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In 1995, the government introduced its decentralisation policy which requires services to be moved closer to the people. Following this, the Institute of Social Sciences at Makerere did an audit of the districts to investigate their capacity to carry out this new agenda. The findings of this audit were published which then prompted the Faculty of Medicine to do its own study into how relevant their training was in relation to the health needs of the people and how this training was impacting on the districts. This study also highlighted a range of issues and problems which prompted the faculty to change its approach to training. These changes included a new focus on student-centred learning which includes problem-based learning, tutorials, clinical skills training and early exposure to clinics, as well as the adoption of the Community-Based Education and Service (COBES).

The aims of the COBES project include the following:

- Integrate priority national health programmes into undergraduate training;
- Acclimatise students to rural practice;
- Prepare students for primary health care;
- Promote strategic partnerships for health; and
- Provide real-life contexts for learning.

Students are posted for community internships in various hospitals and health centres including district (general) hospitals, missionary hospitals, private hospitals, Health Centre IIs, Health Centre IIs, and private medical centres throughout the country. Students participate in faculty and community activities that help them understand people’s needs and concerns. At COBES sites, students are received by health workers called site tutors who are trained by the faculty to carry out various roles of coordinating, guiding, supervising and facilitating the learning process. Site tutors include medical doctors, clinical officers, nurses, dentists and family physicians.

The two key features of COBES are that it is a learning strategy (work-based service learning based on principles of experiential learning) and it is a tool for
achieving educational relevance to community needs. As a learning strategy, the COBES approach emphasises ‘authentic’ learning which is contextual, hands-on, collaborative, reflective and self-regulating. In terms of assessment, there is a move away from the traditional forms of assessment based on standardisation and objectivity of the assessment tools, towards a broad assessment of students in different contexts (e.g. in theatre, in professions, in the laboratory). This requires formative assessment and for assessment to be built into all the learning activities.

There are four ways in which COBES is expected to contribute to development in the communities: (a) engagement with national priority programmes whereby national programmes in a range of areas (e.g. agriculture, engineering, health) are integrated into student activities in the districts or communities; (b) bridging the human resource gaps in district health centres when students work in these facilities; (c) diagnosis of problems in communities and designing projects that can solve some of these problems; and (d) strategic partnerships with NGOs working in the districts whereby students assist with their activities (again, helping to filling human resource gaps) and the NGOs provide support to students. Currently, COBES has students involved in activities (learning and providing a service) in 53 sites in 48 districts. These activities range from installing handwashing facilities in households, to de-worming people or taking their blood pressures.

The first three years of the project were funded by I@Mak with Rockefeller and World Bank funding that was targeted at linking the university to the districts. COBES then approached the university bursar to request funding support, arguing that COBES is a core curricular activity and not just an elective. The university now provides about USh 2 000 per student for meals per day and a further USh 2 000 for accommodation. The project leader noted that this is very little funding and that they will be depending much more on their strategic partnerships for funding in the future. For example, the districts in which COBES operates do provide some funding for food and accommodation for students. They also ‘market’ the students as labour to the NGOs operating in these areas.

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<th>Innovation Systems and Clusters Programme in Eastern Africa (ISCP-EA)</th>
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<td><strong>Location</strong></td>
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In September 2003, ten participants from Uganda, Tanzania and Mozambique attended the 6th Global Conference on Innovations Clusters, which was organised by the Competitive Institute and the Swedish Agency for innovation systems (VINNOVA-Sweden), in Gothenburg, Sweden. Sida/SAREC invited the
East African participants because they had realised that the investments they were making in research in universities in these countries were not contributing to development. The focus of the conference was on the development of methodologies and policies for building innovative clusters and innovation systems. The participants from East Africa then approached Sida/SAREC for funds to host their own regional conference on innovation systems and clusters. The first regional conference was hosted by the College of Engineering and Technology of the University of Dar es Salaam in 2004, and gave birth to the Innovation Systems and Clusters Programme in Eastern Africa. The Faculty of Technology at Makerere University hosted the second regional conference, held in March 2005 in Jinja. This conference took the planning and co-operation around operationalising the innovative systems and clusters activities forward. Other regional conferences have been held since then.

The main objective of the programme is to stimulate, catalyse and promote the development of innovation systems and clusters in eastern Africa, and thereby facilitate speedy socio-economic development and poverty reduction. The programme enables the universities to fulfil their mandate of reaching out and impacting on societal development by stimulating, catalysing and promoting the generation of solutions to solve problems that confront their respective societies instead of remaining as ‘ivory towers’. The clusters are also a means of transferring the results of research to the community to promote economic development. The aims of the programme include the following:

- To facilitate and enhance innovativeness among firms and farms;
- To facilitate enhanced competition and cooperation among firms and farms within clusters and sectors; and
- To nurture a competitive mindset amongst the cluster members.

One of the Uganda team members described the cluster concept as follows: “A cluster can be several types but the simplest definition is that it is really a group of firms who are dealing in a business of similar nature of product or services, that come together basically to share some resources and to utilise some resources commonly, so that they reduce their expenses and that way improve on their profitability and therefore become more competitive nationally and globally.” In other words, they learn how to cooperate and compete.

The programme is coordinated and spearheaded in each of the three countries by the respective faculties of engineering/technology of the Universities of Eduardo Mondlane, Dar es Salaam and Makerere. The cluster initiatives are supported by national steering committees in each country as well as an international team of experts (the VINNOVA Team). Before the launch of the cluster initiatives, a number of individuals were trained as cluster facilitators some of whom are directly involved in the cluster initiatives, while others serve on the national steering committees or serve as agents in awareness campaigns. A key feature of the programme is that it involves academia, the private sector and government in each country.
Uganda held its first National Stakeholders’ Conference in December 2004 at Entebbe. Stakeholders were drawn from academia, research institutions, business, government and policy makers. Five thematic groups based on the existing Sida/SAREC-funded research programmes were formed. The purpose of these groups was to identify the possible clusters and cluster research issues in Uganda. The groups formed were in energy, land use and construction technology, materials and manufacturing, information and communications technology and geographical information systems, and water resources and environmental engineering. A national steering committee to facilitate the formation of clusters was formed during this conference.

According to the web site, the five programme components include the following:

- Research and Innovation Systems Policy Reviews
- Implementation of Pilot Innovation Systems and/or Cluster Initiatives
- Awareness Creation and Publications
- Competence Building and Research
- Monitoring, Coordination and Follow-Up Forums

Following the first stakeholder workshop, seven pilot clusters were established in September 2005. These included the metal fabrication cluster in Katwe, the basketry cluster in Luwero, the pineapple cluster in Kayunga, the business consultancy cluster in Kampala, the bio-fuel cluster at Kakira, the fashion cluster in Kampala, and the salt cluster on Lake Katwe. In the second workshop, another 15 clusters were identified and then established. A further 20 clusters are currently being nurtured. Once the clusters have been established, the next step is to get the small businesses to talk to each other in order to overcome their natural instinct of mistrust for their competitors, and then to talk to the academics (from the universities but also from other research institutes) to find out how they might be able to assist. The resulting social capital and the knowledge infusion will lead to an innovative and therefore a competitive business cluster.

The programme received Sida/SAREC funding for 2007-2009 via the I@Mak initiative as well as funding from the Rockefeller Foundation. The programme is in the process of preparing a new contract with Sida for another round of funding. Additional funding is being sought from organisations such as the United Nations Industrial Development Organisation, the International Development Research Centre, NEPAD and the African Technology Policy Studies Network.
The Department of Zoology had been conducting research and training around water resource management and capacity building. They were consulted by the Lake Victoria Environmental Management Project (LVEMP) team right from the start for their ideas in conceptualising the project.

The LVEMP is a comprehensive regional development programme that covers the whole of Lake Victoria and its catchment areas. Phase 1 was implemented jointly in Kenya, Tanzania and Uganda. The objectives of Phase 1 were to maximise the sustainable benefits to riparian communities of the lake basin from using resources within the catchment to generate food, employment, income, supply safe water and sustain a disease-free environment to conserving biodiversity and genetic resources for the benefits of both the riparian and global communities; and to harmonise national and regional management programmes in order to achieve to the maximum extent possible the reversal of environmental degradation. In Phase 1, the project collected information on the environmental status of the lake, its catchment and the practices being used by the communities living around the lake; institution establishment; capacity building; actions to deal with environmental problems of the lake and its catchment, water hyacinth control, improving water quality and land use management; and, sustainable utilisation of the wetlands for both their buffering capacity and the products therein.

The Lake Victoria Basin Commission (LVBC) which is based in Kisumu, Kenya, undertakes overall coordination of the project. The secretariat for Uganda is based in the Directorate of Water Resource Management (Ministry of Water and Environment) in Entebbe. The Department of Zoology takes primary responsibility for the capacity building component of the project which focuses on building skilled labour to manage the resources of the Lake. This capacity building takes the form of academic programmes at the undergraduate, masters and PhD levels. Students include Makerere staff as well as personnel from the Ministries of Water and Environment, Agriculture, Animal Industry and Fisheries, local government and NGOs. In other cases, the project provides training to those who will train the stakeholders as well as the stakeholders themselves. The training is undertaken by the Department of Zoology in collaboration with departments in other universities as well as the National Fisheries Resources Research Institute (which specialises in fisheries research) and Kawanda Agricultural Research Institute (which specialises in land-use as well as agricultural research). The training is based on research findings.
The project is designed to contribute towards the on-going efforts of achieving the Lake Victoria Basin (LVB) Development Vision. The EAC Partner States recognise the contribution of natural resources to economic growth, and of the strong link between their over-exploitation and poverty. The project will focus on the collaborative management of transboundary natural resources, with emphasis on management of the water and fisheries resources. In addition, the project will focus its attention on interventions that will reduce environmental stresses within the lake and its littoral zone and on watershed management. The project has identified coordinated support and effective investments by the local governments, communities and the private sector as a prerequisite to promoting sustainable use of natural resources and thereby maintains the ecosystem leading to improvement of the livelihoods of the people. This will be achieved by: (a) supporting institutional capacity development and harmonisation of policy, legislations and regulatory frameworks and (b) capacity building at community, national and regional levels.

At the time of the interview, the project was in a bridging phase between Phase 1 and Phase 2. Phase 2 will focus on some of the gaps that were not covered in Phase 1 and is likely to involve priority applied research. According to the LVBC web site, Phase 2 will be implemented in the five East African community countries that share the Lake Victoria Basin, namely Uganda, Kenya, Tanzania, Burundi and Rwanda.

The project is funded by the Global Environmental Facility through the World Bank and Sida/SAREC, with 5% counterpart funding from government.

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<th>Uganda Gatsby Trust (UGT)</th>
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<td><strong>Project leader</strong></td>
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<td><strong>Timeframe</strong></td>
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In the early 1990s, the project leader was working with small-scale metal workers. In 1993, an officer from the United Kingdom’s Gatsby Charitable Foundation asked the university to submit a proposal on how the institution could work with small-scale enterprises. The project leader submitted a proposal (which included other sectors). Funding was approved and the project started in 1994. At that time, the university was struggling financially, and as a result salaries were often paid late. The Gatsby Foundation therefore suggested that the project set itself up as an independent entity which would remove the bureaucracy around payments and keep the project running smoothly. The result was the establishment of the Uganda Gatsby Trust as an NGO within the Faculty of Technology.
The purpose of the UGT is to support manufacturing and value-adding businesses which have the potential to grow. Its specific objectives include the following:

- To develop a network of micro-enterprises linked to the Faculty of Technology in order to increase the quality and value of their output. The networks are called Gatsby Enterprises Clubs.
- To introduce students of higher education institutions to opportunities in and the potential of the small-scale sector and to assist them to develop and transfer technologies appropriate to it.
- To assist small-scale enterprises to overcome their problems through extension services and business development services.
- To enable small-scale enterprises to access credit and acquire technology for their growth.
- To source income and funding for sustaining these functions.

The web site outlines the following activities of the UGT:

- The Club Tree Project is an initiative working to improve tree productivity through integration of biotechnology techniques into traditional propagation systems. The project is undertaken in collaboration between the UGT, the National Forestry Research Institute and the Gatsby Club Network.
- Uplifting Small-Scale Enterprises project provides training for managers and artisans of SSEs to address managerial and technical skill deficiencies as well as business development services (diagnosing and solving problems, developing business plans, and assisting with marketing).
- Technology Development: The Innovations Department was established to develop and disseminate appropriate technology in Uganda and its main activities include: To develop student and other prototypes into marketable technologies; to develop new appropriate technologies on a demand-driven basis; to link up with small-scale enterprises to develop and transfer technology; and to organise technology exhibitions to facilitate technology transfer.
- Supporting students: The trust also implements activities aimed at introducing engineering students to the potential of small-scale enterprises for job creation and self-employment: These include student attachments, student projects and Gatsby scholarships.

The UGT also pursues its goals through Gatsby Micro Finance Limited (GMFL), a company providing affordable financial services to existing small-scale enterprises, and Gatsby Uganda Limited (GUL) providing value-added solutions to all sectors.

The UGT is governed by a board of trustees selected to reflect the representation of the stakeholders in the small-scale sector. The chair of the board is from the private sector and the vice-chancellor is deputy chairperson (ensuring the continued linkage with and blessing from the university).
The dean of the Faculty of Technology is also on the board. Other board members are drawn from the private sector (e.g. business associations and financial institutions).

The UGT is funded by the UK Gatsby Charitable Foundation (the other two components – the GMFL and the GUL – generate their own funds). The basic salaries of the project leader and the full-time assistant are paid by the university. The government (Ministry of Finance) made an indirect contribution to the project when it bought the building that the UGT had acquired to establish work space for small-scale entrepreneurs, but for which it was struggling to pay. The UGT also received funding for the Tree Bio-technology project from the Kilimo Trust, and generates income from the sale of tree seedlings and payments by members for business development services.

### Business Incubation: Agro-Processing

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<th>Location</th>
<th>Department of Food Science and Technology (Faculty of Agriculture) in conjunction with the Business School and the Agricultural Economics and Agribusiness Department in the Faculty of Agriculture</th>
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<tr>
<td>Project leader</td>
<td>Dr Dorothy Nakimbugwe (Dept of Food Science and Technology)</td>
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<tr>
<td>Timeframe</td>
<td>April 2008; ongoing</td>
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<tr>
<td>Type</td>
<td>Business incubation</td>
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Staff in the Department of Food Science and Technology felt that the university could play a more significant role in agro-processing in Uganda. So, they developed a proposal which they submitted to the Rockefeller Foundation which awarded the Department a small grant to undertake a feasibility study. The Department undertook the feasibility study and submitted the report to Rockefeller. After consultation between the university and Rockefeller, the foundation decided to give the university money for the incubator idea and the funding was provided through I@Mak which already had a budget for incubation. The department had to submit another proposal to I@Mak which then requested that the department undertake another feasibility study. They did the feasibility study, submitted the report with a proposal for full implementation and were awarded the funding.

The incubation project, which focuses on agro-processing technologies, is a collaborative initiative between the Department of Food Science and Technology and the Agricultural Economics and Agribusiness Department in the Faculty of Agriculture in conjunction with the Business School. When the need for fabrication of equipment arises, the project also draws in expertise from the Faculty of Technology.

The primary aim of the project is to contribute to national economic development through facilitation of food processing enterprise development in Uganda. The main focus is on entrepreneurship skills development for students. Students are trained in writing business plans which are then submitted to a
committee to be assessed on a competitive basis. The committee comprises people from the university, from government and the private sector. The business plans with the greatest potential are selected and the students then become incubates. The incubates fall into two categories. The first are those who work in the incubator facilities with support from the project staff. At the time of the interview, there were students working on producing juices, sausages and other meat products, nutrient-enhanced cookies (as healthier snacks for children), and a malted drink made from sorghum. The second category of incubates are those whose business plan ideas are supported through to commercialisation, with funding from I@Mak to finance the start-up. The project also has linkages with financial institutions to assist students in the future to take their business ideas further.

The key partners in the entrepreneurship training are the Makerere University Business School, the Faculty of Economics and Management, the Department of Agricultural Economics and Agribusiness, and the Department of Food Science and Technology. The project draws on staff from the university to provide advice on various aspects of the students’ business plans. These staff are not paid for their time but can be reimbursed for travel costs, if necessary. In some cases the project draws on people from outside of the university to provide business mentoring to the students. The project tries to encourage volunteerism (rather than paying individuals as consultants).

The project is funded by the Rockefeller Foundation.

<table>
<thead>
<tr>
<th>Urban Pollution Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
</tr>
<tr>
<td>Project leader</td>
</tr>
<tr>
<td>Timeframe</td>
</tr>
<tr>
<td>Type</td>
</tr>
<tr>
<td>Web site</td>
</tr>
</tbody>
</table>

The Department of Civil Engineering received an offer from the Italian cooperation project for funds, but those funds had to be competitively applied for. They subsequently received some funding for the preparation of the proposal, mainly facilitation of meetings and workshops with target communities, in order to have them involved in earlier stages of setting the agenda.

The main aim of the project is to assess sources, identify causes as well as design and implement mitigation measures to reduce urban pollution from domestic solid waste and to demonstrate resource recovery. The specific objectives include the following:

- Collect baseline data and characterise the wastes;
- Assess compliance with the existing regulations, policies and by-laws;
• Identify management systems and waste treatment technologies;
• Study the treatment processes and local adaptation requirements; and
• Identify and apply resource recovery options for solid waste management.

The project has two components: solid waste management in the peri-urban communities around Kampala, and industrial pollution loading of water bodies (specifically Lake Victoria). The first phase of the project focused on solid waste management. The solid waste management system in Kampala was designed and installed 40 years ago when the population was around 400,000. Now, with a population of about 2 million, the system is under severe pressure. The rationale of the project is to find innovative ways of dealing with solid waste, with a specific focus on using the waste as a resource. A heavily populated community in Kampala (Rugaba division) was selected for the pilot implementation of a technology developed in the department which can produce useful products out of the waste. Before a community is engaged in the project, the project staff run sensitisation workshops and seminars. Members of the community (many of whom are unemployed) are paid to do door-to-door collection of solid waste from the community. According to the project leader, community participation is core. The waste is then taken to a recycling plant about 30 minutes north of Kampala where it is recycled into products such as briquettes for cooking and manure for fertilising their garden crops. Community members are involved in these recycling processes so that they can learn to do it themselves. The idea is that in addition to helping with the solid waste problem in the city, communities can also save money on energy and fertilisers. If this pilot proves successful, the hope is that the project will be rolled out in the other divisions of Kampala city.

According to the project leader, the primary focus of the project is on impacting communities, while improving or advancing scientific knowledge is a by-product. This was actually a requirement of the funding.

The second phase, which will focus on industrial pollution in Lake Victoria, will begin in 2011.

The project is funded by the Italian Corporation.

***

The key features of these development-related projects/groups are summarised in Table 5.1 over page.

The projects have been categorised according to type and range from community-based education and service provision, business support and incubation, and capacity building, to a research-based programme and a pilot technology implementation project. All of the projects are relatively long-term in nature and are funded primarily by foreign donors. The economic development focus of the projects range from healthcare provision, and the
sustainable management and utilisation of natural resources, to various forms of small business support services, and technology development for income-generation. In most cases, the foreign donors together with project staff were involved in initiating the projects and/or setting the agenda. All but one of the projects had a fairly wide range of intended beneficiaries and external linkages.
### Table 5.1: Overview of the development-related projects

<table>
<thead>
<tr>
<th>Project/centre</th>
<th>Classification</th>
<th>Funder(s)</th>
<th>Beneficiaries</th>
<th>External linkages</th>
<th>Initiation/ agenda-setting</th>
<th>Economic development focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community-Based Education and Service</td>
<td>Community-based education and service provision</td>
<td>Foreign donors, the university, some income generation</td>
<td>College of Health Sciences students and local communities</td>
<td>Hospitals, clinics, NGOs</td>
<td>University staff</td>
<td>Healthcare provision to poor and rural communities</td>
</tr>
<tr>
<td>Innovation Systems and Clusters</td>
<td>Research programme and business support</td>
<td>Foreign donors</td>
<td>SMEs, small-scale farmers, public institutions</td>
<td>Universities, research institutes, business, government</td>
<td>Foreign donor, universities in East Africa</td>
<td>Assisting SMEs and small-scale farmers to become more competitive</td>
</tr>
<tr>
<td>Lake Victoria Environmental Management Project</td>
<td>Capacity building programme</td>
<td>Foreign donors, government</td>
<td>Stakeholders involved in the management and utilisation of Lake Victoria</td>
<td>Government ministries, other universities and research institutes</td>
<td>University staff, project secretariat</td>
<td>Sustainable management and use of resources by local communities</td>
</tr>
<tr>
<td>Uganda Gatsby Trust</td>
<td>Business support services</td>
<td>Foreign donors, the university, some income generation</td>
<td>Small manufacturing and value-adding business entrepreneurs</td>
<td>Government ministries, Gatsby Trusts in Kenya, Cameroon and Tanzania</td>
<td>Foreign donor, university staff</td>
<td>Providing support to small-scale businesses and entrepreneurs</td>
</tr>
<tr>
<td>Business Incubation: Agro-Processing</td>
<td>Business incubation</td>
<td>Foreign donor</td>
<td>Farmers and students</td>
<td>--</td>
<td>University staff, foreign donor</td>
<td>Entrepreneurship skills development</td>
</tr>
<tr>
<td>Urban Pollution Control</td>
<td>Pilot technology implementation</td>
<td>Foreign donor</td>
<td>Community members</td>
<td>Kampala City Council, community-based organisations</td>
<td>Foreign donor, university staff, target communities</td>
<td>Technology development for income generation</td>
</tr>
</tbody>
</table>
5.3.2 Articulation

Table 5.2 below summarises interviewee’s responses to the question about the extent to which the project or centre aims and objectives were in response to / articulated with the university’s strategic objectives (as contained in the institution’s strategic plan), as well as the country’s national development priorities. Methodologically, we do recognise that project leaders might have drawn these links more strongly in retrospect than originally was the case in order to give the impression of greater articulation. A deeper exploration of the circumstances of the initiation and agenda-setting of the project would have enabled us to see these linkages more clearly ourselves. Nevertheless, the reported linkages are sufficient for a first-level analysis.

As can be seen from Table 5.2, all six of the projects reported articulation of project aims to national development priorities. By contrast, three of the projects did not report any linkages to the institutional strategic objectives. The articulation with institutional objectives or national priorities is, in some cases, quite specific (i.e. links to a clearly identifiable objective or priority) while, in other cases, the articulation is more general (i.e. linking to a broader, less specified, objective or priority). In order to rate the degree of articulation of each of the projects, we used the notions of ‘direct’ or ‘indirect’ articulation (see Table 5.5).

Table 5.3 indicates the extent to which each project or centre had linkages with an external agency that has or will directly or indirectly ‘implement’ (or utilise) the outputs. Table 5.4 summarises the comments made by project leaders about the financial sustainability of the projects. Finally, Table 5.5 summarises the total articulation ratings for the six projects/centres.
Table 5.2: Articulation with institutional objectives and national priorities

<table>
<thead>
<tr>
<th>Project/centre</th>
<th>Funder(s)</th>
<th>Initiation/ agenda-setting</th>
<th>Institutional strategic objectives</th>
<th>National priorities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community-Based Education and Service</td>
<td>Foreign donors, the university, some income generation</td>
<td>University staff</td>
<td>None reported</td>
<td>Broadly speaking, COBES developed in response to the government’s 1995 decentralisation policy which requires services to be moved closer to the people. More specifically, primary health care is core to the projects and activities of the students and this links to the Ministry of Health’s <em>Health Sector Strategic Plan</em>.</td>
</tr>
<tr>
<td>Innovation Systems and Clusters</td>
<td>Foreign donors</td>
<td>Foreign donor, universities in East Africa</td>
<td>None reported</td>
<td>The programme articulates the policies and strategies of two government ministries, namely the agricultural zoning policy of the Ministry of Agriculture and the Ministry of Trade and Industry’s industrial policy for creating industrial parks (which are, in effect, industrial clusters). In addition, the National Planning Authority has recently identified the creation of industrial clusters as one of the key objectives in their five-year development plan.</td>
</tr>
<tr>
<td>Lake Victoria Environmental Management Project</td>
<td>Foreign donors, government</td>
<td>University staff, project secretariat</td>
<td>The project’s goals are anchored around establishing collaboration and networking with public, private sector institutions to solve public problems through research and innovations; to create research and technology innovation and incubation business centres; and, to create a resource-pool of university expertise for the public and private sector to utilise.</td>
<td>The goals of the project respond to national development plans, for example, to eradicate poverty within the riparian communities articulated in the government’s Poverty Eradication Action Plan and the Plan for Modernisation of Agriculture.</td>
</tr>
<tr>
<td>Uganda Gatsby Trust</td>
<td>Foreign donors, the university, some income generation</td>
<td>Foreign donor, university staff</td>
<td>None reported</td>
<td>The work of the UGT and related companies links directly to the government’s industrialisation strategy insofar as the projects provide a financing service and the creation of incubators or workspace for small-scale enterprises.</td>
</tr>
</tbody>
</table>
Table 5.2: Articulation with institutional objectives and national priorities (continued)

<table>
<thead>
<tr>
<th>Project/centre</th>
<th>Funder(s)</th>
<th>Initiation/ agenda-setting</th>
<th>Institutional strategic objectives</th>
<th>National priorities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business Incubation: Agro-Processing</strong></td>
<td>Foreign donor</td>
<td>University staff, foreign donor</td>
<td>The project gives expression to the university’s general strategy to strengthen public-private partnerships, as well as the aim to commercialise some research outputs (incubation has been put forward as one of the ways to commercialise).</td>
<td>The project focus on enterprise development, job creation and promotion of value addition to agricultural produce is in line with the government’s Poverty Eradication Action Plan and the policy to increase farmers’ incomes through commercialisation of agriculture. More specifically, the industrialisation component of the National Development Plan makes reference to incubators as one of the strategies that has to be promoted; in particular, regional enterprise-specific incubators and value-addition which, in a country that is 80% agro-based, primarily refers to agro-processing.</td>
</tr>
<tr>
<td><strong>Urban Pollution Control</strong></td>
<td>Foreign donor</td>
<td>Foreign donor, university staff, target communities</td>
<td>The project reflects the objectives of the university’s strategic plan as it is aimed at carrying out research aimed at transforming society.</td>
<td>The project focus fits into the government’s Poverty Eradication Action Plan and links to one of the Millennium Development Goals. In particular, the need to improve sanitation thereby reduce environmental pollution is one of the prerequisites for national development and is included in the National Development Plan for Uganda 2010/11-2014/15.</td>
</tr>
</tbody>
</table>
Table 5.3: Initiation/agenda-setting, funding sources and implementation agencies

<table>
<thead>
<tr>
<th>Project/centre</th>
<th>Initiation/agenda-setting</th>
<th>Funder(s)</th>
<th>Implementation agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community-Based Education and Service</td>
<td>University staff</td>
<td>Foreign donors, the university, some income generation</td>
<td>Expectation that the students involved in the education and healthcare provision of COBES will provide better service in their futures as doctors etc, but no external implementation agency as such.</td>
</tr>
<tr>
<td>Innovation Systems and Clusters</td>
<td>Foreign donor, universities in East Africa</td>
<td>Foreign donors</td>
<td>The SMEs and small-scale farmers involved in the programme</td>
</tr>
<tr>
<td>Lake Victoria Environmental Management Project</td>
<td>University staff, project secretariat</td>
<td>Foreign donors, government</td>
<td>Government ministries and NGOs involved in resource management</td>
</tr>
<tr>
<td>Uganda Gatsby Trust</td>
<td>Foreign donor, university staff</td>
<td>Foreign donors, the university, some income generation</td>
<td>Small businesses and entrepreneurs involved in the project</td>
</tr>
<tr>
<td>Business Incubation: Agro-Processing</td>
<td>University staff, foreign donor</td>
<td>Foreign donor</td>
<td>No external implementation agency.</td>
</tr>
<tr>
<td>Urban Pollution Control</td>
<td>Foreign donor, university staff, target communities</td>
<td>Foreign donor</td>
<td>Community members who utilise the technology to generate income</td>
</tr>
</tbody>
</table>
Table 5.4: Financial sustainability of the projects/centres

<table>
<thead>
<tr>
<th>Project/centre</th>
<th>Classification</th>
<th>Timeframe</th>
<th>Funder(s)</th>
<th>Financial sustainability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community-Based Education and Service</td>
<td>Community-based education and service provision</td>
<td>2003/2004; ongoing</td>
<td>Foreign donors, the university, some income generation</td>
<td>First three years funded by foreign donors. Funding was then requested from the university, on the basis that COBES is a core curricular activity and not an elective. Some limited funding was received from the university. There are plans to institutionalise COBES in all academic programmes across the university but funding still remains a problem.</td>
</tr>
<tr>
<td>Innovation Systems and Clusters</td>
<td>Research programme and business support</td>
<td>2004; ongoing</td>
<td>Foreign donors</td>
<td>First phase of funding received from foreign donors. Applying for second phase of funding. Also trying to persuade government to set aside funding for clusters in the national budget.</td>
</tr>
<tr>
<td>Lake Victoria Environmental Management Project</td>
<td>Capacity building programme</td>
<td>1997-2005 2006-2009 2010-</td>
<td>Foreign donors</td>
<td>Phase 1 and bridging phase funding received. Applying for Phase 2 funding. However, there have been some major problems of continuity and sustainability with this project. In particular, the project ground to a halt because the government could not pay the counterpart funding required by the World Bank grant. As a result, there have been very few project activities since Phase 1 ended in December 2005 and this resulted in no follow-up on Phase 1 activities.</td>
</tr>
<tr>
<td>Uganda Gatsby Trust</td>
<td>Business support services</td>
<td>1994; ongoing</td>
<td>Foreign donor, the university, some income generation</td>
<td>The bulk of the funding comes from the foreign donor with some additional assistance from the university and from member contributions. However, future funding remains a problem, especially because there is no government funding and the local private sector is weak. There is a possibility of funding from another foreign donor. There have been efforts to institutionalise the work of the UGT over the past three years through the Makerere University Private Sector Forum. The UGT is also linking up with the Uganda Manufacturers Association around the proposed Masters in Innovation for Technology and Entrepreneurship and are planning to do the same thing with the Ministry of Trade and Industry’s industry and technology division.</td>
</tr>
</tbody>
</table>
Table 5.4: Financial sustainability of the projects/centres (continued)

<table>
<thead>
<tr>
<th>Project/centre</th>
<th>Classification</th>
<th>Timeframe</th>
<th>Funder(s)</th>
<th>Financial sustainability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Incubation:</td>
<td>Business incubation</td>
<td>2008; ongoing</td>
<td>Foreign donor</td>
<td>There are plans to institutionalise the incubation project; in particular, there is a proposal on the table to create an incubation unit in the Department of Food Science and Technology that will deal with the administration of agro-processing incubator services in the Department. The challenge for this group will be ensuring that there are the financial resources to sustain it. There have also been some discussions about mainstreaming the incubation services across the University. However, not much has happened in this regard.</td>
</tr>
<tr>
<td>Agro-Processing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban Pollution</td>
<td>Pilot technology implementation</td>
<td>2006; ongoing</td>
<td>Foreign donor</td>
<td>There was no mention of the future financial sustainability of the project.</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5.5: Articulation rating (maximum score = 13)

<table>
<thead>
<tr>
<th>Project/centre</th>
<th>Community-Based Education and Service</th>
<th>Innovation Systems and Clusters</th>
<th>Lake Victoria Environmental Management Project</th>
<th>Uganda Gatsby Trust</th>
<th>Business Incubation: Agro-Processing</th>
<th>Urban Pollution Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional objectives</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>National priorities</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>No. of funding sources</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Funding sustainability</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Implementation agency</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total articulation rating</strong></td>
<td><strong>6</strong></td>
<td><strong>7</strong></td>
<td><strong>9</strong></td>
<td><strong>10</strong></td>
<td><strong>7</strong></td>
<td><strong>8</strong></td>
</tr>
</tbody>
</table>

**Key:**

*Institutional objectives / National priorities:*
- 2 = Direct (link to specific strategic objective or national priority)
- 1 = Indirect (broad/general reference)
- 0 = None (no reported link)

*No. of funding sources:*
1 for each of the following: University; Government; Foreign donor; Income generation

**Funding sustainability:**
- 1 = Once-off, short-term (a project that is one year or less in duration and which receives only one round of funding)
- 2 = Long-term but capped (a project that is more than one year in duration and which receives one or more rounds of funding, but the funding is capped)
- 3 = Ongoing (a project which receives ongoing funding, e.g. from the university or from income generation)

*Link to implementation agency:*
- 2 = Direct
- 1 = Indirect
- 0 = None
5.3.3 Contribution to strengthening the academic core

Table 5.6 below summarises the information pertaining to each of the projects with regard to their connection to the academic core activities of the university. ‘Core strengthening’ activities include the generation of new knowledge; the involvement of students in the project as part of their formal training; project knowledge and experience feeds into teaching and curriculum development; project knowledge and experience is published in academic publications; and, the project is linked to international academic networks. In order to rate the extent to which the projects contribute to strengthening the academic core, each of the five factors highlighted above were assigned a value of 1 when present. The results are captured in Table 5.7.

Perhaps not surprisingly, the two research-based groups generate new knowledge while the business support and capacity building projects apply existing knowledge. Few of the projects generate academic publications or are linked to international academic networks.
Table 5.6: Contribution to strengthening the academic core

<table>
<thead>
<tr>
<th>Project/centre</th>
<th>Classification</th>
<th>New/existing knowledge</th>
<th>Student involvement</th>
<th>Link to academic core</th>
<th>Link to international academic networks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Community-Based Education and Service</strong></td>
<td>Community-based education and service provision</td>
<td>Apply existing</td>
<td>Formal training for students.</td>
<td>Yes, work-based service learning based on experiential learning and a tool for achieving educational relevance.</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Innovation Systems and Clusters</strong></td>
<td>Research programme and business support</td>
<td>Generate new and apply existing</td>
<td>Some Masters and PhD students have linked their research to the programme. Also negotiating possibility of student attachments in the future.</td>
<td>Not as yet – plans to do so in the future.</td>
<td>Not as yet</td>
</tr>
<tr>
<td><strong>Lake Victoria Environmental Management Project</strong></td>
<td>Capacity building programme</td>
<td>Generate new and apply existing</td>
<td>Formal academic programmes at undergraduate, Masters and PhD levels.</td>
<td>Yes, training is based on research findings.</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Uganda Gatsby Trust</strong></td>
<td>Business support services</td>
<td>Apply existing</td>
<td>Undergraduate students do their practical work linked to the project.</td>
<td>Yes, project leaders teaches university-wide entrepreneurship course based on project experience.</td>
<td>No</td>
</tr>
<tr>
<td><strong>Business Incubation: Agro-Processing</strong></td>
<td>Business incubation</td>
<td>Apply existing</td>
<td>Incubation of students’ business ideas but not part of their formal training.</td>
<td>Pilot plant facilities are used as teaching facilities but no direct link as yet between incubation projects and teaching/curriculum.</td>
<td>No</td>
</tr>
<tr>
<td><strong>Urban Pollution Control</strong></td>
<td>Pilot technology implementation</td>
<td>Generate new</td>
<td>Masters students research linked to the project.</td>
<td>New knowledge generated is fed into teaching materials.</td>
<td>Not as yet</td>
</tr>
</tbody>
</table>
### Table 5.7: Strengthening academic core rating (maximum score = 5)

<table>
<thead>
<tr>
<th>Project/centre</th>
<th>Teaching / curriculum development</th>
<th>Formal training of students</th>
<th>Generate new knowledge</th>
<th>Academic publications</th>
<th>Link to international academic networks</th>
<th>Total rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community-Based Education and Service</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Innovation Systems and Clusters</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Lake Victoria Environmental Management Project</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Uganda Gatsby Trust</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Business Incubation: Agro-Processing</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Urban Pollution Control</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

**Key:**

1 = Yes  
0 = No
5.3.4 Analysis of the connectedness of development projects/centres

In order to analyse the development projects identified for the study, we operationalised the notion of ‘connectedness’ along two axes – the first, articulation, refers to the extent to which there is some coherence between the development projects/centres and the objectives and priorities of government and the institution, as well as linkages between the project and key external stakeholders, and especially implementation agencies. The second axis considers the extent to which the development projects/centres serve to strengthen or weaken the academic core of the institution.

The total ratings for each project in terms of its articulation and contribution to strengthening the academic core of the university are summarised in Table 5.8 below. Using these ratings, each of the projects is then plotted on the articulation and academic core axes in Figure 5.1.

Table 5.8: Summary of ratings

<table>
<thead>
<tr>
<th>Project/centre</th>
<th>Articulation</th>
<th>Academic core</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community-Based Education and Service</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Innovation Systems and Clusters</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Lake Victoria Environmental Management Project</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Uganda Gatsby Trust</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Business Incubation: Agro-Processing</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Urban Pollution Control</td>
<td>8</td>
<td>3</td>
</tr>
</tbody>
</table>
Following the analytical proposition, our assumption would be that for development-related projects to make the most sustained contribution to development they would best fall within the top right-hand quadrant in the graph; in other words, their activities articulate with national priorities and institutional strategic objectives; they have close linkages with key external stakeholders, especially any implementation agencies; and they contribute towards strengthening the academic core of the institution, rather than weakening it.

As can be seen from Figure 5.1, none of the projects fall within the top right-hand quadrant of the graph. Importantly, this means that none of the projects
contribute significantly to strengthening the academic core of the institution. In fact, four of the projects score a ‘3’ and therefore lie midway along the academic core axis while one project scores a zero – meaning that it serves to weaken rather than strengthen the academic core.

Only one of the projects – the Uganda Gatsby Trust – scores high on the articulation rating. As was highlighted earlier, only half the projects reported articulation of projects aims with institutional objectives, and for most projects, foreign donors or external stakeholders were involved in the initiation and/or agenda-setting of the projects.

This kind of profile of development-related projects has the potential to lead towards ‘projectisation’ rather than ‘institutionalisation’ of development activities which, in turn, limits the university’s contribution to development in the long-run and even threatens the functioning of its own core activities. Interestingly, the preamble of the university’s Research and Innovations Policy highlights the trend towards ‘projectisation’ in recent years and outlines how the policy seeks to address the lack of institutionalisation of research:

Established in 1922 as a technical college, Makerere University has evolved into one of the leading Universities in sub-Saharan Africa. In the 1950s, ‘60s and early ‘70s the University experienced her most productive decades with a vibrancy of teaching in the region, research and engagement with government and the public through public lectures and other fora of academic and political engagement. In subsequent years, the volume of research not only decreased but also increasingly became project-based and dependent on individual’s motivation. The latter created a situation that even where research continued to flourish, it was not institutionally driven or coordinated and therefore oftentimes did not get registered as a Makerere University product. This trend was further expounded by the introduction of the private programmes that emphasised innovation at unit level. Teaching/learning and research have therefore been unit-based presenting increasing challenges for University wide coordination and management especially of the research enterprise at Makerere University.

The aforementioned trend has had several effects one of which is less visibility of Makerere University on the web since the milliard research endeavours have been attributed to individuals within the University rather than necessarily the institution itself. The Research and Innovations Policy seeks to reverse this trend in a two-pronged approach: encouraging and providing more opportunity for team/multidisciplinary research.
and innovation on the one hand, and rationalising these efforts in a broader University framework of research and innovations. (Makerere University 2008b: 4)

An institutional leader also made some comments about the relationship between foreign donor funding for research and projectisation:

I think the issue there is that research in universities, and certainly in the Faculty of Social Sciences, but these are short-term – two-year, three-year projects, externally-funded – so there is no opportunity for continuity, for tracking, which you need in development. You do not track – it’s output-oriented rather than outcome-driven. And if you’re going to do serious development then you need to move the university business to mid-term, longer term. So this is where the issue of government investment in higher education becomes critical. They have to drive the research agenda, they have to monitor the research agenda and to be able to say: since we’re putting in so much we can actually say, okay, Rockefeller, you’ve come, you can only fund for five years but you are contributing to a continuing process – rather than today I’m in tree-planting, tomorrow I’m into antiretroviral therapy [...] And once you get into that projectisation mode you get into compartmentalisation and you also get into defences and competition. I think that one of the things is that we need to push for governments creating robust national research councils. Because, of course, we have, for example, the National Council for Science and Technology, but it’s playing more of a quality assurance monitoring role than funding something. In some of these other countries you have found a model where, for example, you have a national research council, but also you have another sort of council to which government gives monies for research in higher education, for example, NUFU and things like that. That way you can have institutionalisation of response to a particular concern or problem or something. But other than that, if I’m very good at writing projects I have my projects, and so you find in the same department very rich well-doing people and then surviving people. (Institutional leader)
Part 6

Key findings

AT A GLANCE

- Macro-observations about higher education and economic development in Uganda
- The nature of the pact around the role of higher education in Uganda
- The strength of Makerere University's academic core
- The connectedness of the university’s development-related activities to the academic core

6.1 Introduction

A vast amount of data has been gathered and presented in the preceding sections of this report. But what does this tell us about the possible contribution that higher education in Uganda can make to the country’s economic development? In order to answer this broader question, we return to the key concepts and questions which were summarised in section 1.1.3. Here, our point of departure was that higher education’s role in and contribution to economic development can best be understood by investigating the following three interrelated factors:

- The nature of the pact between the universities, political authorities and society at large;
- The nature, size and continuity of the university’s academic core;
- The level of coordination, the effectiveness of implementation; and connectedness in the larger policy context of universities.

Furthermore, these factors need to be considered in relation to various contextual features including local circumstances, institutional characteristics and external relations.

By way of concluding this report, we review and analyse the data presented in order to answer the following questions:

1. How does Uganda fare on the preconditions for an effective and productive relationship between higher education and economic development identified in the international case studies (see Pillay 2010b)?
2. To what extent is there a pact between key stakeholders (national and institutional) in Uganda about the role of higher education in general, and in relation to economic development in particular?

3. Does Makerere University, as a specific case, have capacity to make a contribution to economic development in terms of:
   a. The nature and strength of the academic core; and
   b. The connectedness of its development-related activities to the academic core?

6.2 Some macro-observations about higher education and economic development in Uganda

Pundy Pillay’s investigation of three systems (Finland, South Korea, North Carolina) suggested a number of ‘preconditions’ for an effective and productive relationship between higher education and economic development (Pillay 2010b). These were summarised in section 1.1.2.

How does Uganda fare in meeting these preconditions?

1. **High quality schooling.** Participation rates are appallingly low at the secondary level. The GER in secondary education was 18% in 2006, and the net enrolment ratio 16%. The corresponding averages for sub-Saharan Africa were 32% and 25%, not high by developing country standards (60% and 53% respectively), but much higher than the Ugandan figures. Moreover, there is considerable concern about inefficiencies in the system, particularly around completion rates at the primary levels and quality of provision and outcomes throughout the system. The survival rate to the last grade of primary schooling was 25% in 2006 (the average for sub-Saharan Africa was 67% and that for developing countries, 81%) (UNESCO 2009).

2. **Effective economic and education planning.** There is no official commitment to economic and education planning, although the link between economic development and education, especially tertiary education, is recognised.

3. **The role of the state.** The state plays an important role with respect to funding, as well as encouraging private sector provision of higher education. As stated earlier, the state’s policy document, the *National Development Plan* (Government of Uganda 2010), gives some prominence to the role of tertiary education in development. However, financial resource constraints clearly prevent it from ensuring effective implementation of desired policies.

4. **Partnerships.** In general, no evidence could be gleaned of partnerships between the state, the universities and the private sector.
5. **Institutional differentiation.** There is evidence of differentiation amongst universities (e.g. Makerere – teaching and research; Mbarara – science and technology; and Kyambogo – teacher and vocational education).

6. **Quality.** Serious questions have been raised about the quality of educational provision across the system, resulting particularly from poor ‘internal inefficiency’ and inadequate funding especially at the secondary and tertiary levels.

7. **Funding.** State funding of tertiary education is low in absolute terms given the extent of need and the imperative to increase access and enhance equity.

8. **Innovation.** Up to this point Uganda has not invested sufficiently either in its universities or its private sector, nor has it provided appropriate incentives for partnerships to develop between these two sets of important actors.

6.3 Evidence of a pact around the role of higher education in Uganda?

For the purposes of this study, we use the definition of a pact provided by Gornitzka *et al.* (2007: 184):

>A ‘pact’ is a fairly long-term cultural commitment to and from the University, as an institution with its own foundational rules of appropriate practices, causal and normative beliefs, and resources, yet validated by the political and social system in which the University is embedded. A pact, then, is different from a contract based on continuous strategic calculation of expected value by public authorities, organised external groups, university employees, and students – all regularly monitoring and assessing the University on the basis of its usefulness for their self-interest, and acting accordingly.

The key actors of the pact are national, institutional and external stakeholders. It is assumed that the stronger the pact between universities, university leadership, national authorities and society at large, the better the universities will be able to make a significant, sustained contribution to development.

Our interest is in exploring the extent to which there is a pact around the role for higher education in economic development in Uganda. Key to the development of such a pact is agreement or consensus that there should be a role and then about what that role should entail. In order to investigate this aspect, we have sought to address the following questions:
1. Is there a role for knowledge production and for universities in the national development plan?
2. How do the relevant national authorities and institutional stakeholders talk about and conceptualise the role of universities?

The role of knowledge and universities in national and institutional policies and plans were operationalised into a series of indicators. These indicators were then rated on a 3-2-1 scale by three of the researchers. The indicators and the ratings (indicated by shading) are presented in Table 6.1 below.

At the national level, the dominant focus of the development approach that both the Poverty Eradication Action Plan (PEAP) and the national development plan (NDP) recognise is the need to eradicate poverty through stimulating and maintaining high levels of economic growth. In order to attain the growth and poverty eradication objectives, the roles of education, broad human capital development, and science and technology are acknowledged. In addition, it was acknowledged that inadequate human resources and low levels of investment in science and technology are key binding constraints. While there are positive signs of an emerging awareness of the importance of the knowledge economy in new national plans, the role of higher education has not been clarified or agreed upon. This is evident in, amongst others, the low levels of funding and the low higher education participation rates.

At the institutional (Makerere) level, there is a significant emergence of the narrative of the importance of a knowledge economy amongst university stakeholders, and this is increasingly reflected in institutional policies. There is also a strong orientation towards providing appropriate human resources to the growing economy. Overall, there is a strong development orientation, but this awareness has not yet been institutionalised in policies and structures that can operationalise this new orientation, hence the comment by a senior academic that the institution is still in a traditional mode of producing skills for the civil service.

**Table 6.1: Role for knowledge and universities in development in Uganda**

<table>
<thead>
<tr>
<th></th>
<th>National Rating = 4/6</th>
</tr>
</thead>
<tbody>
<tr>
<td>The concept of a knowledge economy features in the national development plan</td>
<td>3 Strong Appears in a number of policies</td>
</tr>
<tr>
<td>A role for higher education in development in national policies and plans</td>
<td>3 Prevalent Clearly mentioned in development policies</td>
</tr>
</tbody>
</table>
Institutional (Makerere) Rating = 5/6

<table>
<thead>
<tr>
<th>Concept of a knowledge economy features in institutional policies and plans</th>
<th>3 Features strongly in strategic plan and/or research policy/strategy</th>
<th>2 Vague reference in strategic plan or research policy</th>
<th>1 Not mentioned at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional policies with regard to the university’s role in economic development</td>
<td>3 Institutional policy</td>
<td>2 Embedded in strategic plan, research policy etc</td>
<td>1 No formal policies</td>
</tr>
</tbody>
</table>

**FINDINGS:**

- At the national level, the importance of the knowledge economy and the importance of higher education were rather weakly reflected in national policy statements.
- Contrastingly, at the university level, there was much stronger reference to the knowledge economy. The important role of the university in development is also in the strategic plan.
- There is no broad agreement between national and institutional levels that knowledge, and by implication higher education, is key to development.

### 6.3.1 Notions of the role of knowledge and universities in development

How do national and institutional stakeholders conceptualise the role of higher education and the university in development? And, to what extent is there consensus or disjuncture between the national and institutional levels? Our conceptual framework for addressing these questions comprises four notions of the relationship between higher education (especially universities) and national development. These four notions\(^\text{10}\), which are elaborated upon below, emerge in the interaction between the following two sets of scenarios:

- Whether or not a role is foreseen for new knowledge in the national development strategy; and
- Whether or not universities, as knowledge institutions, have a role in the national development strategy.

These two sets of scenarios, and the concomitant four notions of the role of universities, are depicted in Figure 6.1 below:

---

\(^{10}\) These four notions are based on ideas developed by Maassen and Cloete (2006) and Maassen and Olsen (2007).
The four notions are elaborated as follows:

- **The university as ancillary**: In this notion, there is a strong focus on political/ideological starting-points for development. Consequently, it is assumed that there is no need for a strong (scientific) knowledge basis for development strategies and policies. Neither is it necessary for the university to play a direct role in development since the emphasis is on investments in basic healthcare, agricultural production and primary education. The role of universities is to produce educated civil servants and professionals (with teaching based on transmitting established knowledge rather than on research), as well as different forms of community service.

- **The university as self-governing institution**: Knowledge produced at the university is considered important for national development – especially for the improvement of healthcare and the strengthening of agricultural production. However, this notion assumes that the most relevant knowledge is produced when academics from the North and the South cooperate in externally-funded projects, rather than being steered by the state. This notion portrays the university as playing an important role in developing the national identity, and
in producing high-level bureaucrats and scientific knowledge – but not directly related to national development; the university is committed to serving society as a whole rather than specific stakeholders. This notion assumes that the university is most effective when it is left to itself, and can determine its own priorities according to universal criteria, independent of the particularities of a specific geographical, national, cultural or religious context. It also assumes there is no need to invest additional public funds to increase the relevance of the university.

- **The university as instrument for development agendas:** In this notion, the university has an important role to play in national development – not through the production of new scientific knowledge, but through expertise exchange and capacity building. The focus of the university’s development efforts should be on contributing to reducing poverty and disease, to improving agricultural production, and to support small business development – primarily through consultancy activities (especially for government agencies and development aid) and through direct involvement in local communities.

- **The university as engine of development:** This notion assumes that knowledge plays a central role in national development – in relation to improving healthcare and agricultural production, but also in relation to innovations in the private sector, especially in areas such as information and communication technology, biotechnology and engineering. Within this notion the university is seen as (one of) the core institutions in the national development model. The underlying assumption is that the university is the only institution in society that can provide an adequate foundation for the complexities of the emerging knowledge economy when it comes to producing the relevant skills and competencies of the employees in all major sectors, as well as to the production of use-oriented knowledge.

Table 6.2 below summarises the notions of the role of higher education held by national and institutional stakeholders, and indicates whether the notion is strong, prevalent, present or absent altogether. While acknowledging that there is seldom a single notion within the university about the role of higher education, at Makerere there was a very strong emphasis in both the interviews and the key planning and strategy documents that the university must be connected, through its role as a knowledge institution, to national development. The knowledge economy notion runs concurrent with that of the instrument for development notion but, interestingly, the latter is directed at government and business, while there is very little mention of linkages to communities, particularly in the strategic plans.
Table 6.2: Comparing national and institutional notions of the role of higher education in Uganda

<table>
<thead>
<tr>
<th>Notions</th>
<th>National stakeholders</th>
<th>Institutional stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ancillary</td>
<td>● Perception that university is not contributing enough to development</td>
<td>● Not a self perception of the leadership</td>
</tr>
<tr>
<td>Self-governing</td>
<td>☐ This is the traditional role expected of the university</td>
<td>☐ Strongly present amongst academics with considerable disquiet about government interference</td>
</tr>
<tr>
<td>Instrument for development agendas</td>
<td>☐ Very strong expectation of academics to also be development practitioners</td>
<td>☐ Particularly poverty reduction and support of local business as experts</td>
</tr>
<tr>
<td>Engine for development</td>
<td>● Recently introduced in the discourse of development plans</td>
<td>☐ Knowledge economy and development discourse is strongly foregrounded in the current strategic plan but little evidence of buy-in and implementation</td>
</tr>
</tbody>
</table>

Key:

■ Strong  ☐ Prevalent  ● Present

FINDINGS:

- In terms of notions of the role of the university in development, at the national level there was a strong instrumental expectation, with some reference to the autonomy issue.
- At the university level, there was a strong leaning towards both instrumental and self-governing notions. There is an increasing awareness of the engine of development approach, particularly at the planning level, but it is not yet dominant amongst the leadership.
- At both the national and university levels the instrumental and self-governing notions were dominant, but not resolved. Amongst university leadership there is an increasing support for a knowledge economy approach.

6.4 The academic core of Makerere University

The university’s unique contribution to development is via knowledge – either transmitting knowledge to individuals who will go out into the world and contribute to society in a variety of ways (teaching), or producing and disseminating knowledge that can be applied to the problems of society and economy (research, engagement). Part of our conceptual framework for understanding what impacts on a university’s ability to make a sustainable
contribution to development therefore focuses on the nature and strength of its knowledge activities.

According to Burton Clark (1998), when an enterprising university evolves a stronger steering core and develops an outreach structure, its heartland is still in the traditional academic departments, formed around disciplines and some interdisciplinary fields. The heartland is where traditional academic values and activities such as teaching, research and training of the next generation of academics occur. Instead of 'heartland', we use the concept 'academic core'. According to our analytical assumption, it is this core that needs to be strengthened if flagship universities – such as those included in this study – as key knowledge institutions, is to contribute to development.

While most universities also engage in knowledge activities in the area of community service or outreach, our contention is that the backbone or the foundation of the university’s business is its academic core – that is, its teaching via academic degree programmes, its research output, and the production of doctorates (those individuals who, in the future, will be responsible for carrying out the core knowledge activities). Furthermore, in societies where there is a strong pact between higher education and society, the universities have been able (and allowed) to develop a strong core of academic activities that forms the basis for all their activities.

Our interest in the academic core of Makerere University has the following two dimensions:

1. What is the strength of the academic core of the institution?
2. Has the academic core been strengthening or weakening in recent years?

In Part 4 of this report, we presented a detailed profile and analysis of the nature and strength of the Makerere academic core. The analysis was undertaken on the basis of seven key indicators (see Table 6.3 below). The rating of the Makerere indicators was undertaken on the basis of a cluster analysis which included South Africa’s 22 contact universities and the seven other African universities included in the study.
Table 6.3: Makerere University: Rating of the academic core

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Strong (3)</th>
<th>Medium (2)</th>
<th>Weak (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Science, engineering and technology enrolments and graduations</td>
<td>SET students = 32% in 2007. SET graduation rate for 2007 was 22%.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2  Postgraduate / undergraduate enrolments ratio Masters / PhD enrolment ratio</td>
<td>Proportion of postgraduates is 9% in 2007, up from 6% in 2001.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3  Teaching load: Academic staff / student ratio</td>
<td>Overall ratio was 1:18 in 2007 and 1:11 for SET.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4  Proportion of academic staff with doctorates</td>
<td>31% of permanent academics have a doctorate (2007).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5  Research income per permanent academic staff member</td>
<td>USD 700 per academic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6  Doctoral graduates</td>
<td>Graduates in 2007 constituted 2% of permanent academics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7  Research publications</td>
<td>Outputs in 2007 is 0.20 of publications per permanent academic</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The following observations can be made about the academic core data for Makerere University:

1. **SET enrolments** – Makerere has had a strong growth in SET enrolments, from 4 400 in 2001 to 11 000 in 2007. But it still had (at 32%) a lower proportion of SET enrolments in 2007 than its peers. Its SET graduation rate was satisfactory, and comparable to those of its peers.

2. **Postgraduate enrolments** – Makerere’s postgraduate enrolment increased between 2001 and 2007, at double the rate of undergraduate enrolments. Its postgraduate percentage of 9% in 2007 was, however, the lowest of the peer group, and far below a Cluster 1 institution’s proportion of 31%. Makerere had a strong growth of 15.5% in masters enrolments between 2001 and 2007, but a low growth of only 2.3% in doctoral enrolments. What is of particular concern is Makerere’s low proportion of doctoral enrolments relative to its masters enrolments. In 2007 it enrolled 32 masters students per doctoral enrolment,
compared to ratios of below 10 masters per doctoral enrolment for its peers. This suggests that Makerere has a poor flow of students from masters to doctoral studies.

3. **Teaching load** – Makerere’s FTE student enrolment grew at a rate which was more than three times higher than its growth in FTE academic staff. This raised its FTE student to FTE staff ratios, which nevertheless remained favourable relative to its peer grouping. In 2007 its student to academic staff ratio in SET was 11:1 and its overall ratio was 18:1. This implies that Makerere’s academics had reasonable teaching loads. The average ratio does however hide a problematically high FTE student to FTE academic staff ratio of 96:1 in business and management studies.

4. **Qualifications of staff** – In 2007 31% of Makerere’s permanent academic staff had doctorates as their highest formal qualifications. This is close to the overall average for South African universities, but lower than the proportions of Dar es Salaam and the selected Cluster 1 university, which is strong in research.

5. **Research funding** – Makerere’s financial statements suggest that it had available in 2007 Ush 15 116 million in research funding. This was equivalent to USD 800 000 at market exchange rates and in PPP units, PPP$ 2.4 million. These amounts, when divided by Makerere’s total of permanent academics become: USD 700 per academic and PPP$ 2 000 per academic, which implies that Makerere was not able to fund its research activities adequately. Dar es Salaam’s ratio of PPP$ 6 400 per permanent academic is three times higher than that of Makerere. The Cluster 1 university in the comparison (Witwatersrand) has a ratio of PPP$ 111 100 per permanent academic which is 56 times higher than that of Makerere.

6. **Doctoral graduates** – Doctoral graduates increased from 11 in 2001 to 23 in 2007, which is a modest 13% increase, and from a very low base. Doctoral enrolments also grew rather slowly, from 28 to 32 over the same period. This is in sharp contrast to the doubling of masters enrolments, from 1 167 to 2 767. The rather low ratio of 2% of doctoral graduates to permanent academic staff means that the university cannot reproduce itself.

7. **Research outputs** – In terms of ISI publications Makerere has shown a high growth from 73 units in 2001 to 233 in 2007. But its 2007 ratio of publication units per permanent academic was still, at 0.20, below the ratio of 0.50 which has been set as a target for South Africa’s research universities.

In terms of input variables Makerere has a favourable staff teaching load. It falls into the category ‘medium’ in terms of SET enrolments and proportion of staff with doctorates, but has a weak research income per permanent academic staff member. In terms of output variables such as weighted research output and the production of doctorates, Makerere performs poorly in comparison to the peer group. The two key factors that seem to be weakening the academic core are
the low throughput from masters to doctorates and the low research funding available to permanent academics. Positive developments are the increase in masters students and the tripling of research output, albeit from a low base.

**FINDINGS:**

- The university is not significantly changing from a predominantly undergraduate teaching institution.
- On the input side, Makerere scored strongly on only one indicator (staff teaching load) and medium on staff qualifications and postgraduate enrolments (masters courses). However, it scored weak on the knowledge production indicators – doctoral graduation rates and research output.
- The knowledge production output variables of the academic core do not seem strong enough to enable Makerere to make a sustainable contribution to development.

6.5 **Coordination and connectedness**

Knowledge policies have become increasingly important in the context of the knowledge economy. Broadly speaking, knowledge policies refer to political mechanisms (such as policies and incentives) that are aimed at improving the (knowledge) capacity of a country to participate in the global knowledge economy. Such policies thus relate to the higher education and science and technology sectors, and to high-level skills training, research and innovation. The coordination of knowledge policies can take place at the level of both policy formulation and policy implementation.

In this project ‘coordination’ is used to refer to more structured forms of interaction, mainly between government and institutions; in other words, the knowledge policies and implementation activities of different government departments, particularly departments of education, science and technology, and research councils. Of specific interest to this study is the coordination of knowledge policies across ministries involved with higher education, science, technology and innovation, as well as those responsible for economic development or planning.

Implementation can be regarded as a component of the coordination of government policies and is a complex combination of agreement (relevant parties support the policy) and capacity to design and apply the implementation mechanisms or instruments. At the national level we looked at the role of the ministry responsible for higher education, steering and funding. At the institutional level, indicators dealt with aspects such as units or structures to implement strategic plans, incentives and rewards, special teaching and
research programmes that link to economic development and funding support for research.

Another key issue for the relationship between higher education and economic development is to establish a productive relationship between knowledge and connectedness. On the one hand, if there is an overemphasis on the basic knowledge activities of teaching and research – in other words, an excessive inward orientation towards strengthening the academic core – this results in the university becoming an ‘ivory tower’. Or, if the academic core is weak, an overemphasis on knowledge results in the ‘ancillary’ role of the university (i.e. no direct role in development). On the other hand, if there is an overemphasis in the university on connecting to development activities, then it weakens the academic core and the university has little new or relevant knowledge to offer in the exchange relationship. The challenge for universities, then, is to deal with this inherent tension between ‘buffering’ (protecting) the core technologies of the institution, and ‘bridging’ (linking) those with external actors (Scott 2001: 199-211).

For the purposes of this study, we are using the term ‘connectedness’ to refer to the relationship (and tension) between the inward focus on strengthening and maintaining the academic core, and the outward focus on linking with external stakeholders and development.

In this section, we address the following three questions relating to coordination and connectedness:

1. Does government coordinate policies and steering mechanisms that enable the university to contribute to development?
2. Does the university connect to external groupings in ways that promote development?
3. Do development activities in the university strengthen or weaken the academic core?

6.5.1 Knowledge policy coordination and implementation

At the national level, while there are positive signs of an emerging awareness of the importance of the knowledge economy in new national plans, the role of higher education has not been clarified or agreed upon, and as can be seen from the ratings, economic development and higher education planning are not linked, coordination and consensus building between government agencies is not apparent, the ministry has weak capacity, and there is considerable funding inconsistency. This means that the increasing awareness of the importance of the knowledge economy in development is not yet coordinated or implemented.
Table 6.4: National coordination of knowledge policies

<table>
<thead>
<tr>
<th>National Rating</th>
<th>3/9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic development and higher education planning are linked</td>
<td>3 Systematic Formal structures Headed by senior minister</td>
</tr>
<tr>
<td>Link between universities and national authorities</td>
<td>3 Specific coordination structures or agencies</td>
</tr>
<tr>
<td>Coordination and consensus building of government agencies involved in higher education</td>
<td>3 Higher education mainstreamed across government departments</td>
</tr>
</tbody>
</table>

FINDINGS:

- At the national level, there seem to be many informal interactions, but no institutionalised processes of coordination.
- While there are considerable personal networks between government officials and particular university leaders, it is not clear whether these contribute towards building consensus and strengthening the institution.

While there are incentives for academics to engage in research, there do not appear to be any specific incentives or arrangements to encourage university staff to get involved in engagement or development-related work – whether with government or industry.
Table 6.5: Implementation of knowledge policies and activities

<table>
<thead>
<tr>
<th>National Rating = 6/12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role of the ministry responsible for higher education</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
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<tr>
<td>Implementation to ‘steer’ higher education towards development</td>
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<td></td>
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<td></td>
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<tr>
<td>Balance / ratio of sources of income for institutions</td>
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<td></td>
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<tr>
<td></td>
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<tr>
<td>Funding consistency</td>
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</table>

<table>
<thead>
<tr>
<th>Institutional (Makerere) Rating = 10/18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific units, funding or appointments linked economic development</td>
</tr>
<tr>
<td></td>
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<tr>
<td>Incentives and rewards for development-related activities</td>
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<tr>
<td>Teaching programmes linked to the labour market</td>
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<td>Special programmes linking students to economic development</td>
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<tr>
<td>Research activities are becoming more economy-oriented</td>
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<tr>
<td>Levels of government and institutional funding for research</td>
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</tbody>
</table>
FINDINGS:

- At the national level, the Department of Education seems to have low capacity with no steering mechanisms and somewhat unpredictable funding.
- While the university does have development-related structures and special programmes linking it to development initiatives, the problem is that in too many cases these initiatives are driven by individuals rather than being institutionalised.
- While government support for research is low, the university, within tight budget constraints, is trying to increase research related to development activities. However, research related to development is not significantly rewarded through incentives beyond the traditional academic promotion system.

6.5.2 Connectedness to external stakeholders and the academic core

At the institutional level, the third strategic area of Makerere University’s current strategic plan is “Partnership and Networking”. The strategies involve:

- Stakeholder participation in the university policy agenda;
- Collaborating and networking with public and private sector institutions;
- Creating research and technology innovation and incubation business centres;
- Involving public and private sector participation in curricula development;
- Stakeholder participation in planning, supervision and evaluation of the students on field attachment; and
- Creating a resource-pool of university expertise for the use public and private sectors.

However, despite examples of linkages with government and industry (or the private sector) at the level of projects, there was not much evidence of strong engagement with the public and private sectors. While some institutional leaders reported that the university encourages disciplines to form consulting firms, one respondent reported that government frequently uses foreign firms rather than locals for consultancies. Another respondent spoke about limited trust between government and the university and that the government did not always recognise the value of the institution.

In summary, there was very little evidence in either the interviews with university stakeholders, or in policy and strategy documents, of strong linkages with government or industry – although there was some evidence of the intention to strengthen these linkages. In addition, there was no evidence of formal structures or platforms for interaction between these role players. The unit responsible for promoting and coordinating linkages with external stakeholders does seem to play an important role in asserting the university’s strategic objectives and agenda when negotiating funding with foreign donors.
With regard to the connectedness of development-related activities to the academic core, the articulation and academic ratings applied to the six projects/centres (section 5.3) are presented again in Figure 6.2 below.

**Figure 6.2:** Plotting the development-related projects at Makerere University

![Diagram showing the articulation and academic ratings of development-related projects at Makerere University.]

**Key:**
COB Community-Based Education and Service
ISCP Innovation Systems and Clusters Programme in East Africa
LVE Lake Victoria Environmental Management Project
UGT Uganda Gatsby Trust
BI Business Incubation: Agro-Processing
UPC Urban Pollution Control

Following the analytical proposition, our assumption would be that for development-related projects to make the most sustained contribution to development they would best fall within the top right-hand quadrant in the graph; in other words, their activities articulate with national priorities and institutional strategic objectives; they have close linkages with key external stakeholders, especially any implementation agencies; and, they contribute
towards strengthening the academic core of the institution, rather than weakening it.

As was illustrated by Figure 6.2, none of the projects fall within the top right-hand quadrant of the graph, meaning that none of the projects contribute significantly to strengthening the academic core of the institution. In fact, four of the projects score a ‘3’ and therefore lie midway along the academic core axis, while one project scores a zero – meaning that it serves to weaken rather than strengthen the academic core. Only one project scored high on the articulation rating: half the projects reported articulation of aims with institutional objectives, and for most projects, foreign donors or external stakeholders were involved in the initiation and/or agenda-setting of the projects.

This kind of profile of development-related projects has the potential to lead towards projectisation rather than institutionalisation of development activities. This limits the university’s contribution to long-term development and threatens the functioning of its core activities.

However, it was pointed out that many consultancy projects are two- to three-year projects with no opportunity for continuity. This leads to ‘projectisation mode’ and ‘compartmentalisation’. An institutional leader also bemoaned that there is not substantial funding from national or institutional research bodies allowing for the institutionalisation of responses to particular concerns or problems.

**FINDINGS:**

- Projects/centres that are considered by university leadership to be strongly connected to development tend to score well on the articulation indicators – in other words, they reflect national priorities (and to a lesser extent institutional objectives), have more than one funding source and, in some cases, plans for financial sustainability, and may have a connection to an implementation agency.
- However, five out of six of the projects are not rated as strengthening the academic core, indicating something of a disconnect.

**6.6 Concluding comments**

The dominant focus of the development approach that both the PEAP and the NDP recognise is the need to eradicate poverty through stimulating and maintaining high levels of economic growth. In order to attain the growth and poverty eradication objectives, the roles of education, human capital development broadly and science and technology are acknowledged, as well as
the facts that inadequate human resources and low levels of investment in science and technology are key binding constraints. While there are positive signs of an emerging awareness of the importance of the knowledge economy in new national plans, the role of higher education has not been clarified or agreed upon. This can be seen from the ratings about funding, low participation rates, weak coordination and weak implementation capacity.

Within the recent government and university documents there is recognition of the importance of the knowledge role of the university. In particular, higher education is beginning to be recognised as a contributor to development, and not just as a provider of human resources for the civil service and the professions. However, the government is not investing sufficiently in either the universities or innovation, nor has it provided appropriate incentives for partnerships. Furthermore, this growing development awareness has not been translated into coordinated policies or implementation actions, as both the government and the university are having problems in making tough reallocation decisions. This means that the pact is not strong enough to make unpopular trade-offs, resulting in few real resource re-distributions to implement the changing vision.

The academic core of Makerere University has some input strengths on which the institution can build; the challenge is to translate these into stronger outputs. From the study of the development projects it also seems that while the projects are somewhat articulated to development needs, much more could be done to strengthen the academic core of the university, which will enable it to make a more sustainable contribution to development.
List of sources


Makerere University (2008b) *Makerere University Research and Innovations Policy*. Kampala: Makerere University


Nakayiwa-Mayega F (2009) *Background information on Makerere University*. Document prepared for research team prior to the site visit.


Appendix 1: List of interviewees

Makerere University

- Dr Lillian Tibatemwa-Ekirikubinza (Deputy Vice Chancellor: Academic Affairs)
- Prof. Eli Katunguka-Rwakishaya (Director: School of Graduate Studies)
- Mr J W Wabwire (Dept of Planning and Development)
- Ms Florence Nakayiwa-Mayega (Dept of Planning and Development)
- Prof. N Sewankambo (Principal: College of Health Sciences)
- Dr B Nawangwe (Dean: Faculty of Technology)
- Prof. Stephen Kijjambu (Dean: School of Medicine)
- Prof. Edward Kirumira (Dean: Faculty of Social Sciences)
- Dr Umaru Bagampadde (Head: Department of Civil Engineering)
- Prof. Sam Kyamanywa (Faculty of Agriculture)
- Dr Yasin Nakku Ziraba (Faculty of Technology)
- Ms Grace Twinamatsiko (Faculty of Technology)
- Dr Frederick Muyodi (Faculty of Science)
- Dr Joseph Byaruhanga (Uganda Gatsby Trust)
- Dr John Muyonga (Dept of Food Science and Technology)
- Dr Dorothy Nakimbugwe (Dept of Food Science and Technology)
- Dr Charles Niwagaba (Department of Civil Engineering)
- Dr Celestino Obua (Dept of Pharmacology and Therapeutics)
- Dr Andrew Mwanika (Faculty of Medicine)
- Leah Thayer (Infectious Diseases Institute)
- Prof. Richard Odoi (Dept of Pharmacy)
- Dr Juliet Kiguli (School of Public Health)

National stakeholders

- Dr Evarist Twimukye (Economic Policy Research Centre, Ministry of Finance, Planning and Economic Development)
- Nyende Magidu (Economic Policy Research Centre, Ministry of Finance, Planning and Economic Development)
- Prof. A B K Kasozi (Executive Director: National Council for Higher Education)
- Ms Elizabeth Gabona (Commissioner for Higher Education: Ministry of Education and Sports)
- Mr Robert Odok Oceng (Visitation Committee to Public Universities, Ministry of Education and Sports)
- Mrs Rosseti Nabbumba Nayenga (Head of Poverty Desk: Ministry of Finance, Planning and Economic Development)
Appendix 2: Cluster analysis methodology and data

A K-means clustering analysis was applied for the identification of four statistically significant and distinct clusters. Averages for 2005 to 2007 were used for input variables as well as non-financial output variables. Financial data for 2007 were used. Original values for all variables were statistically scaled to make the data comparable and to ensure equal weighting for all variables.

The following input variables were used for the clustering analysis:

- % headcount enrolments in science, engineering and technology (% SET)
- % masters and doctoral headcount enrolments (% M & D students)
- Inverse of the student: academic/research staff FTE ratio (inverse of stud: staff FTE ratio)
- % of permanent academic/research staff with a doctoral degree (% staff with PhD)
- % private income
- Total income per FTE student (purchasing power parity dollar thousands) (income per FTE)
- Academic staff costs per FTE academic (purchasing power parity dollar thousands) (staff cost per FTE).

The following output variables were used for the clustering analysis:

- Graduation rate (number of graduates in a given year / enrolments in a given year x 100)
- Research outputs (doctoral graduates + research publications).

The data values are shown in Table A2.1 over page. Figure A2.1 lists the universities in the four clusters and plots the means for each cluster.
### Table A2.1: Cluster analysis data table

<table>
<thead>
<tr>
<th>UNIVERSITY</th>
<th>INPUT INDICATORS</th>
<th>OUTPUT INDICATORS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total 2007 head counts (thousands)</td>
<td>% SET</td>
</tr>
<tr>
<td></td>
<td>2007 only</td>
<td>2007 income</td>
</tr>
<tr>
<td><strong>LARGE CONTACT</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tshwane University of Technology</td>
<td>51</td>
<td>38%</td>
</tr>
<tr>
<td>North West University</td>
<td>45</td>
<td>20%</td>
</tr>
<tr>
<td>University of Johannesburg</td>
<td>42</td>
<td>31%</td>
</tr>
<tr>
<td>University of Nairobi</td>
<td>39</td>
<td>30%</td>
</tr>
<tr>
<td>University of KwaZulu Natal</td>
<td>38</td>
<td>32%</td>
</tr>
<tr>
<td>Makerere University</td>
<td>34</td>
<td>31%</td>
</tr>
<tr>
<td><strong>MEDIUM CONTACT</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cape Peninsula University of Technology</td>
<td>29</td>
<td>48%</td>
</tr>
<tr>
<td>University of the Free State</td>
<td>25</td>
<td>29%</td>
</tr>
<tr>
<td>University of the Witwatersrand</td>
<td>25</td>
<td>48%</td>
</tr>
<tr>
<td>Walter Sisulu University</td>
<td>24</td>
<td>26%</td>
</tr>
<tr>
<td>Nelson Mandela Metropolitan</td>
<td>24</td>
<td>30%</td>
</tr>
<tr>
<td>Stellenbosch University</td>
<td>23</td>
<td>41%</td>
</tr>
<tr>
<td>Durban University of Technology</td>
<td>23</td>
<td>48%</td>
</tr>
<tr>
<td>University of Cape Town</td>
<td>21</td>
<td>42%</td>
</tr>
<tr>
<td>University of Dar es Salaam</td>
<td>18</td>
<td>39%</td>
</tr>
<tr>
<td>University of Ghana</td>
<td>26</td>
<td>18%</td>
</tr>
<tr>
<td><strong>SMALL CONTACT</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University of Limpopo</td>
<td>16</td>
<td>44%</td>
</tr>
<tr>
<td>Vaal University of Technology</td>
<td>16</td>
<td>48%</td>
</tr>
<tr>
<td>Eduardo Mondlane University</td>
<td>16</td>
<td>50%</td>
</tr>
<tr>
<td>University of Botswana</td>
<td>16</td>
<td>25%</td>
</tr>
<tr>
<td>University of the Western</td>
<td>15</td>
<td>31%</td>
</tr>
</tbody>
</table>
## Input Indicators

<table>
<thead>
<tr>
<th>University</th>
<th>% SET</th>
<th>% M &amp; D students</th>
<th>Student: staff FTE ratio</th>
<th>% Staff with PhD</th>
<th>% Private Income</th>
<th>Income per FTE (purchasing power parity dollar thousands)</th>
<th>Academic staff costs per FTE academic (purchasing power parity dollar thousands)</th>
<th>Graduation rate</th>
<th>Weighted research output per permanent academic</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Venda</td>
<td>31%</td>
<td>3%</td>
<td>34</td>
<td>35%</td>
<td>14%</td>
<td>10.0</td>
<td>100.3</td>
<td>16%</td>
<td>0.24</td>
</tr>
<tr>
<td>Cape University of Technology</td>
<td>45%</td>
<td>3%</td>
<td>28</td>
<td>29%</td>
<td>14%</td>
<td>13.0</td>
<td>79.2</td>
<td>22%</td>
<td>0.32</td>
</tr>
<tr>
<td>Mangosothu University of Technology</td>
<td>59%</td>
<td>0%</td>
<td>44</td>
<td>5%</td>
<td>13%</td>
<td>10.6</td>
<td>140.9</td>
<td>17%</td>
<td>0.03</td>
</tr>
<tr>
<td>University of Zululand</td>
<td>16%</td>
<td>5%</td>
<td>32</td>
<td>38%</td>
<td>30%</td>
<td>15.9</td>
<td>95.9</td>
<td>21%</td>
<td>0.70</td>
</tr>
<tr>
<td>University of Fort Hare</td>
<td>18%</td>
<td>6%</td>
<td>21</td>
<td>19%</td>
<td>37%</td>
<td>15.6</td>
<td>94.2</td>
<td>20%</td>
<td>0.45</td>
</tr>
<tr>
<td>University of Mauritius</td>
<td>42%</td>
<td>15%</td>
<td>16</td>
<td>45%</td>
<td>6%</td>
<td>3.7</td>
<td>20.9</td>
<td>27%</td>
<td>0.94</td>
</tr>
<tr>
<td>Rhodes University</td>
<td>22%</td>
<td>14%</td>
<td>17</td>
<td>50%</td>
<td>29%</td>
<td>26.9</td>
<td>107.7</td>
<td>32%</td>
<td>1.65</td>
</tr>
</tbody>
</table>

### Notes:

1. The calculation of purchasing power parity dollars (PPP$) is based on estimates contained in the World Bank's (2008) *World Development Indicators* report. Because these estimates are based on 2005 exchange rates, the following method was used for the 2007 calculations:
   - The indicator set gives for each country a ratio between the PPP conversion factor and the market exchange rate. For example, the South African ratio is given as 0.61, based on a market exchange rate of R6.4 per USD in 2005.
   - The 2007 calculations assume that the 2005 ratio will apply again. So the 2007 PPP conversion factor is taken to be 2005 ratio times 2007 market exchange rate. For example, the conversion factor for South Africa is calculated as 2005 ratio times 2007 exchange rate = 0.61 x 7.0 = 4.27.

2. The financial data for the following three universities were based on the following assumptions:
   - University of Nairobi: academic staff costs assumed to = 35% of total expenditure
   - Eduardo Mondlane University: academic staff costs assumed to = 35% of total expenditure
   - University of Dar es Salaam: (a) academic staff costs assumed to = 35% of total expenditure; (b) private income = donor income.
Figure A2.1: Plot of means for each cluster

Cluster 1
University of Pretoria,
Witswatersrand University,
Stellenbosch University, University of Cape Town, Rhodes University

Cluster 2
University of Johannesburg,
Makerere University, University of Dar es Salaam, University of Limpopo, Eduardo Mondlane University, University of Botswana, University of Mauritius

Cluster 3
North West University, University of Nairobi, University of KwaZulu-Natal, University of the Free State, Nelson Mandela Metropolitan University, University of Ghana, University of the Western Cape, University of Venda, University of Zululand, University of Fort Hare

Cluster 4
Tshwane University of Technology,
Cape Peninsula University of Technology, Walter Sisulu University, Durban University of Technology, Vaal University of Technology, Central University of Technology, Mangosothu University of Technology

<table>
<thead>
<tr>
<th>Cluster</th>
<th>% SET</th>
<th>% M &amp; D students</th>
<th>Inverse of stud: staff FTE ratio</th>
<th>% Staff with PhD</th>
<th>% Private Income</th>
<th>Income per FTE</th>
<th>Staff cost per FTE</th>
<th>Graduation Rate</th>
<th>Weighted Research Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster 1</td>
<td>0.27</td>
<td>1.54</td>
<td>1.04</td>
<td>1.00</td>
<td>1.33</td>
<td>1.78</td>
<td>0.50</td>
<td>1.03</td>
<td>1.72</td>
</tr>
<tr>
<td>Cluster 2</td>
<td>0.19</td>
<td>-0.10</td>
<td>0.78</td>
<td>-0.23</td>
<td>-0.72</td>
<td>-0.58</td>
<td>-1.25</td>
<td>0.10</td>
<td>-0.53</td>
</tr>
<tr>
<td>Cluster 3</td>
<td>-0.86</td>
<td>0.04</td>
<td>-0.37</td>
<td>0.46</td>
<td>0.47</td>
<td>-0.14</td>
<td>0.22</td>
<td>-0.14</td>
<td>0.11</td>
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<tr>
<td>Cluster 4</td>
<td>0.84</td>
<td>-1.07</td>
<td>-1.00</td>
<td>-1.14</td>
<td>-0.89</td>
<td>-0.49</td>
<td>0.58</td>
<td>-0.63</td>
<td>-0.86</td>
</tr>
</tbody>
</table>
## Appendix 3: Academic core rating descriptions

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Strong (3)</th>
<th>Medium (2)</th>
<th>Weak (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Strong science and technology</td>
<td>SET enrolments growing, and SET share of enrolment shape increasing. Graduation rates of cohorts of SET students minimum of 70%.</td>
<td>SET share of enrolment shape steady. Graduation rate of cohorts of SET students 60% to 70%.</td>
<td>SET enrolments static, and SET share of enrolment shape declining. Graduation rate of cohorts of SET students below 60%.</td>
</tr>
<tr>
<td>2 Increased postgraduate enrolments and outputs</td>
<td>Postgraduates at least 25% of total enrolment. Masters and doctoral enrolments and graduates increasing. Ratio of masters to doctoral enrolments no more than 5:1. Ratio of graduates in year to enrolments in same year: masters 25%, doctors 20%.</td>
<td>Postgraduates as proportion of total enrolments above 10% and increasing. Ratio of masters to doctoral enrolments no more than 10:1. Ratios of graduates to enrolments: masters 20%, doctors 15%.</td>
<td>Postgraduate enrolments and graduates grow at average annual rate below that of undergraduates. Postgraduates 10% or less of total enrolment. Ratio of masters to doctoral enrolments above 10:1.</td>
</tr>
<tr>
<td>3 Teaching loads of academic staff</td>
<td>FTE academic staff ratio close to growth in FTE students. FTE student to academic staff ratios maximum of 15:1 for SET, and maximum average of 20:1 for all programmes.</td>
<td>FTE students grow at faster rate than FTE academic staff. FTE student to academic staff ratios close 20:1 for SET, close to 30:1 for all programmes.</td>
<td>FTE students grow at faster rate than FTE academic staff ratio. FTE student to academic staff ratios more than 20:1 for SET, and 30:1 for all programmes.</td>
</tr>
<tr>
<td>4 Qualifications of academic staff</td>
<td>At least 50% of permanent academic staff have doctorates.</td>
<td>Between 30% and 50% of permanent academic staff have doctorates.</td>
<td>Less than 30% of permanent academic staff have doctorates.</td>
</tr>
<tr>
<td>5 Availability of research funding</td>
<td>Annual research funding of at least USD10 000 per permanent academic.</td>
<td>Annual research funding of between than USD 2 000 and USD 10 000 per permanent academic.</td>
<td>Annual research funding of less than USD 2 000 per permanent academic.</td>
</tr>
<tr>
<td>6 Doctoral graduates</td>
<td>Doctoral graduates in given year = 10% or higher of permanent academic staff.</td>
<td>Doctoral graduates in given year between 5% and 9.9% of permanent academic staff.</td>
<td>Doctoral graduates in given year &lt; 5% of permanent academic staff.</td>
</tr>
<tr>
<td>7 Research publications</td>
<td>Ratio of 0.50 or higher of publication units per permanent academic.</td>
<td>Ratio of publication units per permanent academic between 0.25 and 0.49.</td>
<td>Ratio of publication units per permanent academic &lt; 0.25.</td>
</tr>
</tbody>
</table>