

Differentiation and Articulation in Tertiary Education Systems

A Study of Twelve African Countries

Njuguna Ng'ethe
George Subotzky
George Afeti

ASSOCIATION FOR THE DEVELOPMENT
OF EDUCATION IN AFRICA

Working Group on Higher Education
and the

Association of African Universities
In partnership with

Africa Region Human Development Department



THE WORLD BANK
Washington, D.C.

Copyright © 2008
The International Bank for Reconstruction and Development/The World Bank
1818 H Street, N.W.
Washington, D.C. 20433, U.S.A.
All rights reserved
Manufactured in the United States of America
First Printing: April 2008



printed on recycled paper

1 2 3 4 5 11 10 09 08

World Bank Working Papers are published to communicate the results of the Bank's work to the development community with the least possible delay. The manuscript of this paper therefore has not been prepared in accordance with the procedures appropriate to formally-edited texts. Some sources cited in this paper may be informal documents that are not readily available.

The findings, interpretations, and conclusions expressed herein are those of the author(s) and do not necessarily reflect the views of the International Bank for Reconstruction and Development/The World Bank and its affiliated organizations, or those of the Executive Directors of The World Bank or the governments they represent.

The World Bank does not guarantee the accuracy of the data included in this work. The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of The World Bank of the legal status of any territory or the endorsement or acceptance of such boundaries.

The material in this publication is copyrighted. Copying and/or transmitting portions or all of this work without permission may be a violation of applicable law. The International Bank for Reconstruction and Development/The World Bank encourages dissemination of its work and will normally grant permission promptly to reproduce portions of the work.

For permission to photocopy or reprint any part of this work, please send a request with complete information to the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923, USA, Tel: 978-750-8400, Fax: 978-750-4470, www.copyright.com.

All other queries on rights and licenses, including subsidiary rights, should be addressed to the Office of the Publisher, The World Bank, 1818 H Street NW, Washington, DC 20433, USA, Fax: 202-522-2422, email: pubrights@worldbank.org.

ISBN-13: 978-0-8213-7546-4

eISBN: 978-0-8213-7547-1

ISSN: 1726-5878

DOI: 10.1596/978-0-8213-7546-4

Library of Congress Cataloging-in-Publication Data has been requested.

Contents

Foreword	vii
Acknowledgments	ix
About the Authors	xi
Acronyms and Abbreviations	xiii
Executive Summary	xvii
Part I: Comparative Analysis and Conclusions	1
1. Higher Education Differentiation and Articulation in Context	3
Objectives of the Study	4
How the Study was Conducted	5
The Ideas and Issues	5
Framework of Analysis	16
2. Differentiation and Articulation in Sub-Saharan Africa	21
Observations from the Literature	21
Nature of Differentiation	22
3. Drivers and Inhibitors of Differentiation and Articulation	31
Drivers of Differentiation	31
Inhibitors of Differentiation	34
Drivers and Inhibitors of Articulation	36
Summary	38
4. Differentiation and Articulation: Policies and Practices from Other Regions	39
Historical Reference Points: United Kingdom and France	39
Chile	40
Korea	41
Singapore	42
The Bologna Process	43
5. Towards Policy Options for Improved Tertiary Education	45
Perspectives and Interpretations	45
Points for Policy Consideration	49
Topics for Future Research	51

Part II: Country Case Studies	53
6. Cameroon	55
Background	56
The Higher Education Sector	56
7. Ghana	61
Background	62
The Higher Education Sector	63
Relationship between Universities and Polytechnics	65
8. Kenya	69
Background	70
The Higher Education System	70
Differentiation between Universities and National Polytechnics	74
Articulation between/among Universities and National Polytechnics	76
Conclusions and Challenges	77
9. Malawi	81
Background	82
The Higher Education System	82
Systemic Characteristics: Governance, Regulation, and Funding	85
Articulation and Interface between Universities and Polytechnics	86
Conclusions and Main Challenges	86
10. Mozambique	89
Background	90
The Higher Education System	90
Systemic Characteristics	92
Articulation and Interface between the University and Polytechnic Sectors	94
Conclusion: Principal Challenges and Concerns	94
11. Nigeria	97
Background	98
The Higher Education Sector	98
Relationship between Universities and Polytechnics	100
12. Rwanda	105
Background	106
The Higher Education System	106

Differentiation and Articulation	107
Main Challenges and Conclusions	108
13. Senegal	109
Background	110
The Higher Education Sector	110
Articulation and Mobility	112
14. South Africa	115
Background	116
The Higher Education System in South Africa	116
On-going Debates around Differentiation and Articulation	122
Conclusion: Key Challenges	124
15. Tanzania	127
Background	128
The Higher Education System	128
Differentiation between Universities and Polytechnic-type Institutions	130
Articulation between Similar/Different Types of Institutions	130
Main Challenges and Conclusions	130
16. Uganda	133
Background	134
The Higher Education System	134
Differentiation between Universities and the Polytechnic	136
Articulation among Similar/Different Types of Institutions	137
Conclusions and Challenges	137
17. Zambia	139
Background	140
The Higher Education System	140
Articulation and Interface between the University and Polytechnic Sectors	144
Conclusions	144
Appendixes	147
A. Research Methodology	149
B. Selected Annotated Bibliography	151

References 165

LIST OF TABLES

1. Dimensions of Differentiation among Types of Higher Education Institutions 17
2. Dimensions of Articulation among Types of Higher Education Institutions 18
3. Differentiation Profiles for Selected African Tertiary Systems 23
4. Classification of Tertiary Education Systems in Selected Countries 23
5. Structure of Tertiary Degrees Awarded in Anglophone and Francophone
Tertiary Systems 25
6. Summary of Articulation Indicators for Selected Tertiary Education Systems 36

LIST OF FIGURES

1.1 Distribution of Student Population by Type of Institution
(1996, Headcount) 152

LIST OF BOXES

1. Tertiary System Differentiation in Cameroon 14
2. Weak Articulation in Ghana's Tertiary Education System 19
3. Horizontal Differentiation in Tanzania 27
4. Explicit Differentiation Policy in Mozambique 32
5. The Higher Institutes for Technology Studies in Tunisia 34
6. System Articulation in Senegal 37

Foreword

Partnership has become a watchword for the global higher education community in the 21st century. The pace of events, the rapidity of change and the explosion accessibility to information have made it virtually impossible for any single tertiary institution, governmental education agency, or development assistance organization to stay on top of even the few topics that are strategically relevant to its mission. In this area, a division of labor among similarly inclined partners sharing common interests is proving to be an effective mechanism for maintaining ‘manageability’ and institutional efficiency in our increasingly complex and dynamic world.

One such partnership that has endured, evolved and quietly proved productive over the better part of the past two decades involves the Association of African Universities, the Working Group on Higher Education of the Association for the Development of Education in Africa (ADEA), and the World Bank. Formed in 1989, the Working Group was initially housed in and led by the World Bank, and the Association of African Universities carried out its first major piece of commissioned research on African higher education. Since then, these three organizations have regularly contributed information and resources in pursuit of common goals. Frequent interaction and occasional concrete collaborations have nourished a rapid expansion of available bibliography on the topic of African higher education, helped to spark the introduction and diffusion of strategic planning within African tertiary institutions, produced two regional conferences on higher education development in 1995 and 2003, and assisted the emergence of a broad and informed consensus among universities, governments and development partners concerning institutional and policy priorities for African higher education.

The study presented here is but one example of this effective partnership. It brings together the credibility and access of the Association of African Universities, the implementation capacity of the ADEA Working Group on Higher Education, and the extensive dissemination network of the World Bank to provide you with a pioneering policy analysis that surely would have been diminished in the absence of any one of these partners.

Jee-Peng Tan
Education Advisor
Africa Region
The World Bank

Alice Sena Lamptey
Coordinator
Working Group on
Higher Education
ADEA

Akilagpa Sawyerr
Secretary General
Association of
African Universities

Acknowledgments

The three regional reports on which this report is based were written by Njuguna Ng'ethe, Associate Research Professor, Institute for Development Studies, University of Nairobi, (East Africa), George Afeti, formerly Principal, Ho Polytechnic, Ghana (West Africa), currently the Secretary-General of the Commonwealth Association of Polytechnics in Africa, and George Subotzky, formerly Director, Centre for the Study of Higher Education, University of the Western Cape, South Africa (Southern Africa, and project co-ordinator).

The international literature review and the annotated bibliography were drafted by Mark Abrahams, then senior researcher at the Centre for the Study of Higher Education, University of the Western Cape. The final versions of these documents were prepared by George Subotzky.

Prof. Ng'ethe was assisted by Samuel W. Kiiru, Project Assistant in the Institute for Development Studies, University of Nairobi.

Peer reviewers were Sajitha Bashir, Kristian Thorn, and William Saint.

The authors wish to acknowledge the Association for the Development of Education in Africa (ADEA), specifically the Working Group on Higher Education (WGHE) for commissioning and co-ordinating this study. The study also benefited from the comments and suggestions of the Coordinator of the WGHE, Alice Lamptey. For the World Bank, William Saint contributed to data collection, research, and editing.

The views and opinions expressed in this report are, however, those of the authors and not those of the WGHE, ADEA, or the World Bank.

July 2007

About the Authors

Njuguna Ng'ethe is an Associate Research Professor in the Institute for Development Studies, University of Nairobi, Kenya. Professor Ng'ethe, in the last few years, has been researching and writing on higher education in Africa. His most recent publications have been on innovations in African universities and public universities reform in Kenya.

George Subotzky is an Associate Professor and former director of the Centre for the Study of Higher Education at the University of the Western Cape. He is currently the Executive Director: Information & Strategic Analysis at the University of South Africa (Unisa). He has conducted and contributed to numerous studies in higher education policy in South Africa and has published widely.

George Afeti (PhD), a Mechanical Engineer, is the pioneer Principal of Ho Polytechnic, Ghana. He is currently the Secretary-General of the Commonwealth Association of Polytechnics in Africa. He has contributed extensively on higher education, especially on change and innovation in polytechnics.

Acronyms and Abbreviations

AAU	Association of African Universities
ADEA	Association for the Development of Education in Africa
BEE	Uganda Business Education Examinations
BTS	Brevet de Technicien Supérieur
CAE	College for Adult Education
CAMESA	Conseil Africain et Malgache pour l'Enseignement Supérieur
CAPA	Commonwealth Association of Polytechnics in Africa
CHE	Commission for Higher Education
COMESA	Common Markets for Eastern and Southern Africa
COREN	Council for Regulation of Engineering in Nigeria
DEA	Diplôme d'Etudes Approfondies
DoE	Department of Education
DoL	Department of Labor
DST	Diplôme Supérieure de Technologie
DUT	Diplôme Universitaire de Technologie
DVCs	Deputy Vice-Chancellors
EAACE	East African Advanced Certificate of Education
EAC	East African Community
EACE	East African Certificate of Education
ECOWAS	Economic Community of West African States
EI	Education International
ESP	Ecole Supérieure Polytechnique
FCUBE	Free Compulsory Universal Basic Education
FTE	Full-time equivalent enrollments
GATS	General Agreement on Trade and Services of the World Trade Organisation
GDP	Gross Domestic Product
HEAC	Higher Education Accreditation Council
HE	Higher Education
HELB	Higher Education Loans Board
HND	Higher National Diploma
ICTs	Information and Communication Technologies
IoT	Institute of Technology
ITEK	Institute of Teacher Education, Kyambogo
IUCEA	Inter-University Council of East Africa
IUT	Institut Universitaire de Technologie
JAB	Joint Admissions Board
JICA	Japan International Cooperation Agency
JKUAT	Jomo Kenyatta University of Agriculture and Technology
KACE	Kenya Advanced Certificate of Education
KCE	Kenya Certificate of Education
KCPE	Kenya Certificate of Primary Education
KCSE	Kenya Certificate of Secondary Education

KHI	Kigali Health Institute
KIE	Kenya Institute of Education
KIE	Kigali Institute of Education
KIST	Kigali Institute of Science, Technology and Management
KNEC	Kenya National Examinations Council
MES	Ministry of Education and Sports, Uganda
MoE	Ministry of Education
MoEST	Ministry of Education, Science and Technology, Kenya
MSTHE	Ministry of Science, Technology and Higher Education, Tanzania
NAB	National Accreditation Board
NABPTEX	National Board for Professional and Technician Examinations
NBTE	National Board for Technical Education
NCCE	National Commission for Colleges of Education
NCDC	National Curriculum Development Centre
NCHE	National Commission for Higher Education
NCTE	National Council for Tertiary Education, Ghana
ND	National Diploma
NEEDS	National Economic Empowerment and Development Strategy
NEPAD	New Partnership for Africa's Development
NPC	National Polytechnics Commission
NP's	National Polytechnics
NQF	National Qualifications Framework
NRM	National Resistance Movement
NUI	Non-university Institution
NUC	National Universities Commission
NUR	National University of Rwanda
NYS	National Youth Service
PhD	Doctor of Philosophy
PLE	Primary Leaving Education Certificate, Uganda
PUIB	Public Universities Inspection Board, Kenya
RIAM	Rwanda Institute of Administration and Management
RPL	Recognition of Prior Learning
SADC	Southern African Development Community
TACE	Tanzania Advanced Certificate of Education
TCE	Tanzania Certificate of Education
TIE	Tanzania Institute of Education
TSC	Teachers' Service Commission, Kenya
TTIs	Technical Training Institutes
TIVET	Technical, Industrial and Vocational Education and Training
UACE	Uganda Advanced Certificate of Education—Advanced Level
UCE	Uganda Certificate of Education—Ordinary Level
UDSM	University of Dar es Salaam
UJTC	Uganda Junior Technical Education
UNEB	Uganda National Examination Board
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNISE	Uganda National Institute of Special Education

UoN	University of Nairobi
UPK	Uganda Polytechnic, Kyambogo
UTE	Uganda Technical Education
VCs	Vice-Chancellors
VETA	Vocational Education and Training Authority
WGHE	Working Group on Higher Education
WTO	World Trade Organisation
WUCSC	Western University College of Science and Technology

Executive Summary

Differentiation is the process whereby distinct types of tertiary educations emerge in response to a country's need for educational programs that provide diverse types of skills and knowledge to a widening range of students with divergent abilities and interests. *Articulation* refers to the mechanisms that enable student mobility within and among the institutions that comprise the tertiary system, for example, academic credit accumulation and transfer, recognition and equivalence of degrees, recognition of prior learning, and so forth. Differentiation and articulation become important characteristics within tertiary education systems that are shifting from elite to mass access, and that are seeking to provide an increasingly sophisticated national economy with the mix of human resources needed to maximize productivity, efficiency, and overall competitiveness. As globalization has heightened economic competition and tightened the margins for performance, governments have come to realize that educational differentiation and articulation are policy variables that can be manipulated to the benefit of both national and individual interests.

Within tertiary education systems, differentiation occurs “vertically” when distinct types of institutions appear, as the traditional research university is joined by polytechnics, professional institutes, non-research universities, and junior colleges. It also takes place “horizontally” as each of these publicly funded institutional types is complemented by the appearance of new educational providers in the same category that are operated by for-profit, non-profit, religious, international or local government entities, and run on a residential, non-residential or distance education basis. Horizontal differentiation is generally a response to increased demand for student access to higher education. But vertical differentiation is normally a reaction to labor market needs for a greater diversity of graduate skills and levels of training.

This study strives to sketch an initial map of the extent and nature of institutional and program differentiation within African systems of tertiary education. In doing so, it also seeks to chart the patterns of articulation that have emerged—or been consciously put in place—between the different institutional types (such as public universities, private universities, polytechnics, training colleges). The analysis of tertiary education differentiation and articulation is based on field visits to a dozen selected African countries. Its purpose is to improve general understanding of this under-researched but strategically important technical aspect of African higher education at a time when it is becoming an important aspect of education policy.

Overview of Findings

African countries display far more differentiation than articulation within their tertiary education systems. Their systems are quite diverse and can be classified as unitary, binary, trinary, semi-differentiated or fully differentiated, depending upon the number of different institutional types that comprise the tertiary system. In general, the polytechnic sub-systems appear relatively undifferentiated in comparison to the university sub-systems.

Differentiation in higher education systems is clearly apparent within Africa, although the nature and extent of it vary from country to country. These differences originate in the

varieties of colonial experience, political economy and immediate post-independence history. Yet, they also reflect how countries have subsequently been able to position themselves in relation to the internationalization of higher education and to the market forces associated with globalization.

For the most part, articulation within Africa seems to be in its infancy. The mobility of staff and students between university and non-university tertiary institutions suffers from a lack of cooperation and absence of dialogue between the two institutional groups. In fact, an unhealthy rivalry often characterises their relationship. Polytechnic graduates seeking “academic progression” into the university system often encounter a void in which there are no clearly defined articulation pathways to follow, the level to which they are admitted being dependent on the course they wish to pursue and the regulations of the particular university to which they are applying. Credit transfer mechanisms rarely exist between similar polytechnic and university programs. In fact, some universities do not even recognize any prior learning or skills acquired at the polytechnic level in their admission requirements.

Interestingly, articulation and mobility between similar institution types is also rare. Students from private universities have little chance to transfer to public universities. Likewise, student mobility among public universities is frequently not well defined, particularly in Anglophone Africa. In fact, the absence of an easily understood and mutually accepted credit transfer system is a major barrier to the articulation of many African higher education systems.

The situation regarding articulation in Francophone West Africa is different. In Senegal and Cameroon, higher education institutions that deliver sub-degree polytechnic-type qualifications are organizationally linked to the universities and are not seen as entirely separate or autonomous institutions. Thus, top graduates from the diploma-awarding university institutes of technology can be admitted into degree programs at the appropriate level, subject only to passing an entrance examination.

The Prevalence of Binary Systems

Though the tertiary systems are quite varied, evidence suggests that the binary system is dominant, with universities and polytechnics as the two principal institutional types. Most systems began with such a binary structure, and Ghana, Kenya, Malawi, and Tanzania retain them today. However, variations occur around the binary model, with Cameroon, Nigeria, and Senegal being classified as differentiated, Uganda as trinary, and Zambia as unitary. Mozambique and Rwanda seem to be on a transitional path towards fully differentiated systems. As the traditional binary boundary between universities and non-university institutions has become increasingly blurred, some interesting university/non-university institutional hybrids have emerged: for example, the Kigali Institute of Science, Technology and Management (KIST) in Rwanda, the “comprehensives” in South Africa, and the University of Malawi.

This blurring is the result of two main drivers. The first relates to market forces, which create a two-way drift: “academic” drift (the aspirations of non-universities to gain university status), and “vocational” drift, (universities seizing market opportunities by offering vocational courses). Academic drift is evident, for example, in Kenya where polytechnics are in the process of being elevated to university status. Vocational drift is evident everywhere

as universities attempt to make up financial shortfalls by offering high-demand, market-driven vocational programs.

The second driver, especially in complex tertiary education systems such as those of South Africa and Nigeria, is a lack of policy clarity regarding the appropriate boundaries between polytechnics and universities in terms of their mission, purpose, curricula and programs (and the knowledge underpinnings of these). This has allowed the two-way drift to proceed unencumbered by regulation.

The Explosion of Private Universities

A common feature in most of the countries covered in this study is the appearance and multiplication of private providers of university education. This is a significant regional trend. Since 1990 private universities have increased at a much faster rate than public universities. Although the number of public universities has expanded by 66 percent over the past fifteen years—from 113 to 188—the number of private universities has multiplied seven-fold during the same period from 14 to 107.

The rise of private provision in higher education responds to two factors. The first is the high demand for university education. A common feature in the countries covered in this study is that nearly all those who qualify to enter university would much prefer to go to university as opposed to attending another type of institution such as a polytechnic. The result is very high demand for university education even when market conditions (graduate unemployment) indicate that this might not be the most rational thing to do. The second factor is the inability of the public sector to meet this strong demand for university access. Data from all the countries covered in this study indicate that only a small fraction of those who obtain the minimum requirements to enter universities are actually admitted to the public universities. The explanations for this exclusion include: inadequate funding from the government; linking of admissions to available bed space in universities; and insufficient academic staff in the universities.

Drivers of Differentiation

National Policy. A major finding of this study is that government policy documents are beginning to voice the need for differentiated tertiary and higher education systems. In some cases, the policy is prompted by political considerations. In other cases, it is informed by developmental positions, such as the World Bank argument that Africa requires a diversified workforce in order to respond effectively to the continent's development priorities and challenges. Regardless of the underlying motive, higher education differentiation as an explicit policy is evident in most of the countries covered in this study.

However, two shortcomings are often associated with these policies. The first is the tendency to upgrade polytechnics into universities. The danger here lies, not in upgrading the polytechnics into universities, but in doing so without catering for their replacement and the instructional gap they leave behind. The second risk is the policy ambiguity surrounding the establishment of private universities. Though these institutions have mushroomed in the last decade, they may still be regarded in policy circles as the “illegitimate brothers” of their public universities counterparts. They are, therefore, made “welcome” in the context

of increasing access, but they are not fully integrated in higher education planning and policy discussions.

Market Forces. All the studies of reform taking place in the African universities, including this study, have identified the proliferation of market-driven courses and programs, sometimes also referred to as income-generating academic programs, as one of the major changes to take place in African universities in the last decade. Sometimes these programs have been offered at the degree level; in other cases they have been packaged as discreet short courses tailor-made for specific clienteles. Either way, the objective has been the same: to provide instruction for a fee with a large skills component using teaching methods that are closer to technical training than conventional university pedagogies. In the process, they have, at least on the surface, increased program differentiation.

Institutional Reforms. Recent studies of African higher education have documented the reforms that have been taking place in African universities in the last ten years. These reforms are ongoing and a number of them have implications for program differentiation. These include: rapid expansion in the number of universities (both private and public); reforms in university governance, particularly decentralization of governance; introduction of income-generating activities, including introduction of “market driven” courses mentioned earlier, and so forth.

Industry. In theory, industry ought to be a driver of differentiation. Yet, this did not come out in the study. To the extent that industry has a stake in higher education, it resides in its demand for skills rather than what it refers to, sometimes contemptuously, as merely theoretical knowledge. In doing so, industry implicitly recognizes the binary divide between the two types of knowledge. Notably, industry is beginning to take more interest in higher education, especially in (a) governance through representation in governing councils; (b) funding through student scholarships; (c) R & D collaboration; (d) provision of student internships; and (e) joint patenting of innovations. As the industries become more sophisticated, so will their demand for more differentiated skills. Industry is thus a potential driver of higher education differentiation.

Regional Initiatives. Regional higher education policy does not feature in this study for the obvious reason that it has remains at an early stage of development. To the extent that regional higher thinking exists, it is dominated by the issue of student mobility. Yet it is important to remember that the emerging regional economic blocs, if they succeed, will sooner or later demand collective thinking on human development, if only in the context of common markets and the resulting free movement of labor.

Inhibitors of Differentiation

Resources. Higher education administrators, especially deans and departmental chairs, are not only aware of global trends in higher education, a key feature of which is more and more differentiation as successive domains of new knowledge emerge, but they are also frustrated that they are unable to introduce new areas of study and specialization because of longstanding resource constraints. Most departments, for example, operate at less than optimal staff capacity. Research, the key generator of new knowledge areas, is barely funded.

Isomorphism. A main inhibitor of differentiation is institutional isomorphism, or the gradual adoption of a single set of institutional characteristics within a higher education system. Isomorphism takes two forms: *mimetic* (strategic seeking of status) and *normative* (seeking of quality and professionalism). This study finds that isomorphism is evident in some countries where newer universities are fashioning themselves after older ones, or where newer polytechnics are simply copying the programs of older ones.

Undifferentiated Governance and Funding Structures. One finding of this study is that higher education governance structures tend to be similar among universities and equally similar among polytechnics. The effects of this on program differentiation are not obvious, but they are fairly predictable with regard to institutional differentiation. That is, similar governance structures are likely to result in institutions that behave the same way. Indeed institutions sometimes conspire to behave the same way with regard to some contentious issues, such as staff union matters. The uniformity is reinforced by common funding structures, especially with regard to public institutions, all of which are highly dependent on the managers of the public purse whom they cannot afford to “alienate” by “behaving creatively.”

Absence of Size and Shape Debates. In Sub-Saharan Africa, universities articulate poorly with each other. This reflects in part the absence of a national policy dialogue regarding the appropriate shape and size of the higher education system. Higher education oversight bodies such as national commissions or councils for higher education should ideally spearhead this national agenda-setting discussion. However, these bodies are uniformly young or non-existent. As a result, they are yet to establish their leadership credibility with pre-existing (and sometimes suspicious) tertiary institutions. Thus, the important public discussion of the size and shape of national tertiary education systems necessary to build the consensus required to launch substantial system reforms does not take place, unless perhaps it is prompted by a major local crisis.

Drivers and Inhibitors of Articulation

Demand for Access. Greater social demand for higher education and for equity of access has generated an increasing emphasis on the creation of articulation and mobility pathways for students throughout the education and training framework. To this end, a number of countries worldwide have developed integrated national qualifications frameworks (NQF) to facilitate access, mobility and progression within education, training and employment. Central to the construction of an NQF is a coordinated approach to education and training among formal institutions and the workplace. This aims to ameliorate traditional tensions between discipline-based learning, which occurs mainly in institutions, and work-based learning, which occurs mainly in the workplace, but includes professional practice. To this end, the qualifications framework defines levels of qualification against which outcomes-based qualifications and standards can be pegged. This seeks to create equivalences upon which credit accumulation and transfer can occur.

National Policy. Articulation has received far less policy attention than differentiation. Even though almost all countries acknowledge the need for articulation as a means of

producing a more efficient tertiary education system and a less fragmented labor force, the practices indicate otherwise. Even in those few cases where formal articulation routes exist, little evidence of articulation can be found. This is likely to be the result of limited institutional capacities within the tertiary education system—engendering articulation is quite complicated because it involves multiple institutional actors, multiple sub-sets of the educational system, and system-wide student information systems.

Internal Governance Structures. The internal structures of institutions have tended to inhibit articulation amongst and between institutional types. The universities are under no obligation to articulate with polytechnics. This is because of their legal autonomy and the way they jealously safeguard that autonomy. Consequently, they tend to view articulation—even amongst themselves—as a managerial nuisance that is best avoided.

Industry and the Labor Market. This study turned up no evidence that the labor market, in general, or industry in particular, is driving articulation. On the contrary, industry may inhibit articulation with its tendency to partner with specific institutions. The market, on the other hand, seems to be indifferent to articulation so long as it obtains the skills that it needs.

Policies and Practices from Other Countries

In Chile, recent substantial economic gains have been underpinned in part by a far-reaching reform of the higher education sector that included a major diversification of educational institutions. Private tertiary institutions were authorised in 1990 and tertiary education was sub-divided into three levels: universities, professional institutes, and technical training centres. How was this differentiation carried out? One policy initiative was jointly launched by the Ministries of Finance, Education and Labor to create a lifelong learning system for workers and citizens. A second was a competitive grants program that encouraged the overhaul of course content, curricula structure and pedagogy through the provision of financial awards for related equipment and facilities. A third was the introduction of the concept of educational benchmarking with the aim of comparing strategically important courses with world standards of quality. A fourth was the extension of the national student loans and grants program to include shorter term technology training. Finally, certain tax exemptions were provided to workers who sought to update their skills through continuing education.

Korea's economic success has been due to the development of a broad, differentiated and articulated tertiary education system, a strategically oriented R&D program, policy incentives for industry in key export areas, and linkages among higher education, R&D, and industry. Differentiation and articulation have been constant themes in the country's long-term campaign to develop professional education capacities in support of its export industries. In 1971, the Korea Advanced Institute was created at the top of the educational pyramid to provide high quality MSc and PhD programs. In 1976 a sub-system of two-year vocational junior colleges was created as the market demand for higher skill levels became stronger. This was followed in 1979 by putting in place a broader two-year junior college system of both public and private colleges. In 1977, the Korea Science and

Engineering Foundation was set up to fund university research and award long-term research fellowships. Various Government Research Institutes were established in the 1980s with mandates to focus on strategic economic areas such as ship-building, electronics, and automotives. Engineering Research Centres were created on university campuses in 1990, while research and development were promoted through a competitive funding program, tax credits, and customs duty waivers on research equipment. In 1995, the two-year college diploma was replaced by a two-year associate BSc. degree in order to increase attractiveness and emphasize articulation with the four-year degree programs. Today this junior college system hosts 26 percent of tertiary enrollments, and 90 percent of these colleges are privately operated.

Singapore illustrates how it is possible to progressively construct a differentiated and articulated tertiary education system through a sequence of policy initiatives. First, the country's two colonial era universities were merged to form a stronger National University of Singapore in 1980. The next year the Nanyang Technological Institute was established, evolving into a technological university by 1991. It was designed to serve as the human resource cornerstone for an economic growth strategy based on competence in selected new technologies such as medical robotics, microelectronics and optics. During the 1990s ten post-secondary Institutes of Technical Education were established to generate the middle level technical skills to support this effort. This had previously been the role of the nation's five polytechnics, which were re-directed to emphasize continuing education and post-employment professional development programs. Access to tertiary education was expanded by setting up several regional junior colleges that were linked to the national university through student transfer mechanisms. Likewise, strong student performers from the polytechnics were given opportunities to progress into university level studies. At the end of the 1990s, the National University of Singapore initiated a strategic shift to a comprehensive research-intensive university with a strong complement of postgraduate programs. In 2000, the Singapore Management University was opened as a private limited company in partnership with the Wharton School of Business at the University of Pennsylvania in the United States. Part of its mandate is to provide lifelong learning options to working adults. In 2005, the first of three planned regional tertiary-level Institutes of Technical Education was opened. Strikingly, these new regional Institutes are intended to impart practical technical skills to the *lower* 25 to 30 percent of the secondary school cohort that previously had no access to tertiary education. In this way, Singapore has employed the instruments of institutional differentiation and articulation in pursuing human capital formation strategies that have generated a vigorous economy that belies its relatively small size.

Issues for Policy Consideration

Institutional and programmatic differentiation appears to be increasing within African tertiary education—driven by both market forces and government policy. Yet, the extent to which articulation is becoming operational appears to be minimal, even though formal channels for articulation between the university and non-university sub-sectors may exist. Consequently, differentiation and articulation within African higher education systems remain vital but largely unused policy instruments for enhancing equity and contributing

effectively towards national development goals. To change these circumstances, governments may wish to consider the following actions:

1. Encourage increased access in a targeted way through both institutional and programmatic differentiation in order to meet development goals. To maximise diversity of offerings, cost effectiveness and access, the binary divide should be *flexibly* maintained through appropriate regulation to control academic and vocational drift. Prospects for effective regulation are dependent on national conditions. In some cases, such as Mozambique and South Africa, strong centralised national policy frameworks are conducive in this regard. In smaller systems, much greater institutional autonomy is evident, creating bigger challenges for regulation.
2. The dominance of universities in non-Francophone countries should be reversed. Expansion does not necessarily imply diversity and many new universities, rather than non-university institutions, are being established. This means confronting popular aspirations for universities as institutions of first choice, and the persistent attribution of low status to non-university institutions. These perceptions could be changed through: (a) publicly clarifying complementary roles and identities; (b) encouraging and rewarding collaboration; and (c) creating unified supervision and stakeholder bodies.
3. Comprehensive hybrid institutions, that is, combinations of residential and open leaning, could be developed—especially to provide access to rural areas. This is already beginning to happen. However, the challenge will be to maintain quality in the process of differentiation despite ongoing fiscal constraints in most African countries.
4. In view of the problems of articulation and the absence of any meaningful policy dialogue between the two institution-types, the creation of parallel universities with distinct mandates within the higher education system may be the option of the future, as is already happening in Kenya and South Africa. The policy, however, is controversial in that it could leave a “middle level skills vacuum” if the new technical universities fail to cover this level of training. If the polytechnics are upgraded to technical universities offering “skills degrees” and training programs to the highest level possible, the traditional universities will then concentrate on research and the awarding of predominantly “knowledge” degrees.
5. At the national levels, agencies charged with promoting quality standards and the accreditation of higher education programs should strive to establish a mutually acceptable and easily readable credit transfer system to improve articulation within the entire higher education sector. This they can do by specifying minimum credit requirements for the different levels, by developing generic descriptors, and by crafting instruments for measuring and classifying learning outcomes and competences within national qualifications frameworks. The imperatives of articulation across institutions and qualification levels require an overarching national, regional and eventually international framework. This does not, however, imply the “uniformisation” of courses, but rather the creation of convergence in the recognition of achievement levels.
6. The identity of non-university institutions should be made more distinct. One possible suggestion for strengthening non-university institutions and differentiating them from universities is to customize their admission requirements on a

distinct curriculum at the secondary school level that more adequately prepares potential students for vocational training in terms of acquisition of practical pre-career skills. In other words, the curriculum for secondary school students aiming for traditional first degree programs of study should not be the same for those who are better inclined for the more practically-oriented, career-focused education in non-university tertiary institutions. This horizontal differentiation at the secondary school level should not prevent the mobility of students between universities and non-universities, provided the entire educational system is well articulated.

7. The image and reputation of non-university institutions should be enhanced by improving the quality of their training and through effective collaboration with industry in the design of their training packages and the mounting of vigorous campaigns of sensitisation regarding their important role in national development. This will not be an easy task. Contrary to what the polytechnics in Anglophone West Africa would want the public to believe, the HND holder is not appreciated as a graduate with practical skills superior to those of his university counterpart. The polytechnic graduate suffers from lower status.
8. Evidence from this study appears to support the view that articulation between the two institutional types is smoothest in a unitary higher education system with a common supervising authority and with the university at the top of the educational ladder. However, it is doubtful if non-university institutions, particularly the polytechnics, would accept a subordinate status to the universities, after all these years as autonomous higher education institutions.
9. Formal articulation channels must be created and actual articulation encouraged within which emphasis on differentiation and diversity should be retained.
10. Collaboration between universities and non-university institutions must be asked for and rewarded.
11. Linkages between higher education and industry should be strengthened to improve quality and relevance.
12. The private higher education sector should be encouraged to provide complementary systemic institutional and programmatic differentiation. However, its quality and relevance must be assured through appropriate regulation.
13. Debate on the role of higher education in a developmental context should be encouraged. Towards this end, more detailed research on the issues raised should be mounted as a matter of urgency. In particular, program differentiation should be mapped in greater detail. In addition, research on articulation should be given even more attention, given that we know less about articulation than we know about differentiation.

In conclusion, it must be recognized that universities and non-university institutions share the same ultimate goal of contributing to national development, either by advancing knowledge and promoting scholarship, contributing to a knowledge society as it were, or by directly supporting industrial and economic growth through the application of existing knowledge. How effectively these tasks are divided up between the two institution-types should be a parameter that defines the overall efficiency of the higher education system. This is why issues of differentiation and articulation must engage the serious attention of governments and policy makers.

PART I

Comparative Analysis and Conclusions

Higher Education Differentiation and Articulation in Context

At the beginning of the 21st century, higher education in Sub-Saharan Africa is attracting considerable attention following many years of relegation to the background. One reason for this heightened interest is the realization that without adequate provision of higher education, African countries are unlikely to become meaningful players in the generation of knowledge, the key driver of today's global economy. An important manifestation of this growing interest in higher education is the expanding body of literature on the subject (see Annotated Bibliography in this study).¹ Much of this literature covers fairly well understood issues, but some engages barely explored topics that are fairly technical yet urgent from the standpoint of national policy. This study belongs to the latter category. It is a study of differentiation and articulation within the higher education systems of selected Sub-Saharan African countries. As such, it does not deal directly with longstanding issues of higher education access, equity, quality and relevance per se. Rather, it invites the reader to think about these issues in the technical context of differentiation and articulation within national higher education systems.

This study was commissioned by the Working Group on Higher Education (WGHE) of the Association for the Development of Education in Africa (ADEA). It responds to a 1999 evaluation of the WGHE, which recommended an expansion of its focus on higher education to include other tertiary institutions in addition to universities.

One outcome of the 1999 evaluation was that two non-university tertiary representatives were included in the WGHE's new Steering Committee. In addition, the WGHE has

1. See in particular the new publications on African universities under the sponsorship of the Partnership For Higher Education in Africa.

moved to include non-university institutions, specifically Polytechnics and Teacher Training Colleges, in the activities eligible for its funding.

The study strives to sketch an initial map of the extent and nature of institutional and program differentiation within African systems of higher education and, in doing so, to track the patterns of articulation that have emerged—or been consciously put in place—between the different institutional types. Its purpose is not only to inform the work of the WGHE, but to improve general understanding of this under-researched but strategically important aspect of African higher education.

To this end, three regional experts in the field were commissioned to conduct a study in 12 countries from three regions of Sub-Saharan Africa. These were: *West Africa*—Cameroon, Ghana, Nigeria, and Senegal; *East Africa*—Kenya, Rwanda, Tanzania, and Uganda; and *Southern Africa*—Malawi, Mozambique, South Africa, and Zambia. The research team comprised Prof. George Subotzky, (project co-ordinator and author of the Southern African regional report); Prof. Njuguna Ng'ethe (East Africa) and Dr. George Afeti (West Africa). Three regional reports were produced as well as a review of selected international literature and an annotated bibliography. This report is a synthesis of the three regional reports.

Objectives of the Study

The specific aim of this study is to investigate the extent, range and patterns of institutional and program differentiation, as well as the articulation among them, by analyzing non-university institutions in selected African countries across the main geographic and linguistic regions of the continent.

A larger goal of the study is to enable the WGHE to better understand the roles of, and the relations between, university and non-university institutions in higher education systems of Africa and, to some extent, relations among universities as well. The study seeks to inform and support the WGHE's stated intention to engage more with the non-university component of the higher education sector. By helping to fill the knowledge gap in this area, the findings will also be of wider interest to policy-makers, institutional leaders, higher education researchers, development agencies and other stakeholders. In turn, this will hopefully contribute to achieving greater equity, access and mobility within African higher education, and to enhancing the contribution of higher education to development in the region.

To this end, the following activities were undertaken:

1. To conduct a *review of selected international literature* on the topic, with a view to identifying and comparing key international trends in differentiation and articulation, and to identify lessons which may be relevant for the African context;
2. To identify and compare the *extent and range of institutional and program differentiation* in selected African countries and, as far as possible on the basis of this, to develop a typology of institutional differentiation. This process comprises:
 - a) Different interpretations of the specific roles and identities of the different higher education institutional types, the boundaries between them, and the interface among them;

- b) The characteristics by which these types are categorised and identified; and
 - c) The regulation and legal status of these different institutional types, including the extent to which these are standardised, centrally regulated or lightly steered by ministries, statutory bodies and professional associations, with regard to registration, accreditation, assessment, certification, curricula, appointments, accountability, and so forth.
3. To identify and compare the *extent, nature and patterns of interaction and articulation* among the institutional types with particular regard to credit transfer and mobility among *and* between public and private non-universities and between them and public and private universities, as shaped by current institutional practices, national level policy and legal frameworks.
 4. To identify innovative approaches and *issues for policy consideration* arising out of the findings.

How the Study Was Conducted

While the broad subject of this research is differentiation and articulation within national higher education systems of Sub-Saharan Africa, the study focuses primarily on non-university higher education institutions, mainly polytechnics and *technikons*, and their relations with universities. Examining the full range of tertiary institutions, including tertiary level colleges and institutes, regrettably lies beyond the scope defined for the present study. The unit of analysis is the higher education systems in a dozen selected African countries. It does not, therefore, focus on individual institutions, except when these are pertinent to the definitions of the higher education system. A summary of the research methodology is provided in Appendix A.

Given the limited scale and funding of the project, four countries within each of the three Sub-Saharan regions were examined (see Part II for summaries of these case studies). These are:

West Africa:	Cameroon, Ghana, Nigeria, and Senegal
East Africa:	Kenya, Rwanda, Tanzania, and Uganda
Southern Africa:	Malawi, Mozambique, South Africa, and Zambia.

The Ideas and Issues

Differentiation, Diversity and Articulation

Huisman (1996) provides what he calls a “tenable conceptualization” of differentiation and diversity as these concepts relate to higher education. In his view, differentiation alludes to the increase in the number of similar but different institutions within the same higher education system. These different institutions may have different functions and could be structured differently. Diversity refers to the variety of types of institutions emerging within a higher education system. When the institution is unique, it increases diversity. If, however, it duplicates provision and services then it does not add variety, and hence does not

contribute to diversity. From this conceptualization it is clear that a process of differentiation does not necessarily lead to an increase of diversity. Huisman (1996) further distinguishes between *external* diversity (which is a classification of different types of institutions) and *internal* diversity (which is a classification of the different types of programs and disciplines within the institutions).

It is therefore important to note that diversity relates to both institutions and programs. Despite this important definitional distinction between differentiation and diversity, the term “differentiation” is generally used in the literature to signal diversity. In this respect, differentiation can be contrasted with the tendency towards *isomorphism*, which is the imitative and aspirational behaviour which occurs when institutions adopt similar features (notably those of the research university) in order to achieve strategic advantage, higher status and better quality. This is most closely associated with “academic drift” among non-university polytechnic-type institutions, i.e., the process in which they gradually take on the trappings of universities.

File and Goedegebuure (2000) and Meek (2000) discuss the complex definitional issues related to differentiation and diversity. On the one hand, studies of higher education diversity conclude an inevitable movement toward diversity based on, among others, evolutionary theory of development and population ecology (Hannan and Freeman 1993). However, other studies (Pelikan 1992; Scott 1998; Enders and Fulton 2002; Hayes and Wynyard 2002) highlight the power and influence of market forces that accommodate two possible institutional responses to increased market competition: institutions can diversify in an attempt to capture a specific market niche, or they can imitate the activities of their successful competitors (File and Goedegebuure 2000). The latter process, that of imitating competitors, is also called *institutional isomorphism* (Van Vught 1992). This occurs when institutions, in order to survive, adopt the characteristics and practices of other organizations operating in the same environment. Drawing on organizational development literature, File and Goedegebuure (2000) further distinguish between two types of institutional isomorphism: (1) *mimetic isomorphism* that results from insecurity caused by external environmental factors forcing the institution to mimic other more successful competitors; and (2) *normative isomorphism* that develops through heightened professionalism, where professionalism leads to homogeneity and similar practices based on shared standards.

Differentiation and diversity in higher education are treated in all their complexities by various scholars of higher education. Some, like Rhodes (1999), argue that institutions should take on certain characteristics within a differentiated higher education system so that they can appropriately serve and address the challenges facing higher education. These attributes are:

- Institutional autonomy, lively faculty independence and vigorous academic freedom, but strong, impartial, public governance and decisive, engaged presidential leadership.
- Increasingly privately supported, but increasingly publicly accountable and socially committed.
- Campus-rooted, but internationally oriented.
- Academically independent, but constructively partnered.
- Knowledge-based, but students-centred; research-driven, and learning-focussed.

- Technologically sophisticated, but community dependent.
- Quality-obsessed, but procedurally efficient.
- Professionally attuned, but humanely informed.

Morphew (2002) charges that academic drift is an indicator of a higher education system's relative inefficiency. He maintains that diversity in the higher education systems is essential to meet the changing needs of their client populations. As the needs of regions and students evolve, diverse institutions and systems are required in order to provide comprehensive education at a high standard for increasingly different types of students. Academic drift, because it reduces the diversity of institutional types within a higher education system, impacts negatively upon the programmatic diversity of a system.

The World Bank (1997), in dealing with development issues in Africa, also promotes a differentiated higher education system as a means of addressing diverse needs and for purposes of sustainable development. The case for greater diversification of tertiary institutions is argued on both educational and financial grounds. According to the World Bank, traditional university programs do not meet the educational needs and circumstances of many aspiring students, for whom other kinds of courses are more suitable. Examples include occupations requiring a high degree of specific skill; people with practical abilities but little theoretical inclination; late-starters, second-chancers or adult learners; working students; disabled students; and parents with childcare responsibilities. Some of these diversified approaches may also be more cost-effective. For example, undergraduate, short-cycle, or community colleges are often less expensive than traditional research universities. The World Bank believes that a diversified tertiary system provides options for a broader range of students and allows them to make choices based on needs, quality and costs. Sustainability can also be developed when the tertiary system is founded on some degree of cost-sharing, and when student mobility among the different programs is assured. Such an approach maximizes enrollments per unit of public expenditure (World Bank 1997). In arguing thus, the distinction is drawn between *horizontal* differentiation (that is between institutional types) and *vertical* differentiation (that is, activities within institutions).

While horizontal differentiation is driven by increased demand for higher education, vertical differentiation is a reaction to demand for a greater diversity of graduates. Today's developing economy needs not only civil servants, but also a whole host of other professionals such as engineers, pharmacists, and computer scientists. Higher education institutions are adapting and new ones are emerging to provide training and credentials in new areas. Provincial and regional universities often produce the majority of a county's graduates and tend to lie at the heart of the system's expansion. Some institutions offer two-year tertiary level degrees, much like community colleges in many developing countries. Freestanding professional schools provide training in fields such as law, medicine, business, and teaching (World Bank 2000).

The World Bank's task force on higher education further recommends a stratified system that marries the goals of excellence and mass education, allowing both to be achieved within a single system and using limited resources. A stratified system comprises one tier that is oriented toward research and selectivity and another that imparts a more general tertiary level education to large numbers of students (World Bank 2000).

In contrast to its ample discussion of differentiation, the literature is very thin on how "student mobility" and institutional articulation can be assured in a differentiated and

diverse higher education system. Articulation relates to the horizontal and vertical linkages between institutions, programs and levels in a sector (Harris 1996). Cohen and Brawer (1989) also define articulation as the movement of students and their academic credits within and between institutions. Harris (1996) identifies a number of benefits that can be gained through high articulation. These are:

a) For Students:

- Improved access and freedom of movement;
- Lower rates of drop-out or failure without credit;
- Increased program choice;
- The possibility of non-traditional learning experiences being credited towards a degree;
- Opportunities to change concentrations or institutions mid-stream, or to delay final choices whilst still carrying forward relevant credits;
- Less wastage of time, endeavour and money;
- The possibility of moving between institutions in accordance with aspirations; and
- Opportunities to pursue lifelong learning through the flexible accumulation of credits over a long or short time period.

b) For Institutions:

- Proving an effective means of facilitating equity under conditions of inter-institutional and intra-institutional differentiation;
- The possibility of greater inter-disciplinary program linkage across institutions;
- Fewer repeaters and dropouts;
- Less curriculum duplication/overlap
- Increased academic collaboration;
- Increased pass rates; and
- Improved internal institutional efficiency along with the possibility of increasing student numbers.

Harris warns, however, that articulation should not be seen as the solution to all problems in higher education. An upward ‘prestige orientation’ can be produced by an overemphasis on student mobility within a higher education system. This can lead to a loss of status and integrity at the lower levels of provision. The quality of the provision can also suffer because of fragmentation, time needed to adjust to different environments, and the cost in terms of the heavy reliance on administrative systems. Another possible disadvantage of articulation is the pressure towards uniformity in diverse curricula and institutional offerings. In this sense, articulation can be seen to be a counterpoint to the principle of differentiation. Thus, differentiation and articulation co-exist in a tension-filled relationship.

International Patterns Regarding University and Non-University Institutions

The term ‘binary’ emerged in the United Kingdom during the 1970s to indicate that a higher education system is divided into two sub-sectors comprising universities and non-university polytechnic-type institutions. The UK higher education system was widely

held up as a model for a binary system (Huisman and Kaiser 2001). Prior to this, higher education in the UK was provided almost entirely by universities (Barnett 1990). The creation of the binary system of higher education saw the establishment and proliferation of numerous non-university institutions, principally polytechnics, but also a number of other institutes and colleges of higher education. The binary system formed the basis of planning in UK higher education from 1965 until 1991, under governments of both of the main political parties. The following reasons underpinned the choice of this dual system (Pratt 2002):

1. The increasing need for vocational, professional, and industrial oriented courses could not be met by universities;
2. A system based on a ladder concept would lead to demoralization in the public sector;
3. It was desirable that part of higher education remain under social control and responsive to society's needs; and
4. Britain could not stand up to foreign competition by downgrading the non-university professional and technical sector.

Neave (2000) believes that the move towards a differentiated system in the UK was market related. Nonetheless, institutions of higher education acting on their own initiative did not determine the size and shape of this system. Instead, government managed the process. According to Neave, government involvement resulted in a policy of deflection where the traditional function of premier universities was preserved and non-university institutions were established as auxiliaries to meet the expanding demand for professional skills within the private sector. If we retain this interpretation, then clearly institutional segmentation had the un-avowed purpose of channelling mass demand away from the historically elite sector and forcing the non-university institutions to take on the burden of mass higher education. This sentiment is echoed by Teather (1999), who states that:

Binary policies were adopted in Australia and Britain at a time of considerable expansion of demand for higher education. By designating a distinct group of non-university institutions as providing genuinely 'higher' education, the governments of the day were able to channel a significant proportion of the expansion into these institutions. This had the effect of permitting the traditional universities to retain their former elite characteristics to a greater extent than would otherwise have been possible.

Similar demands for increased access to higher education, stemming in large part from massification of the secondary education system, generated the need for post-secondary education that provided a wide range of options that led directly to employment. In the 1960s and 70s, more vocationally oriented tracks appeared in the higher education systems of various developed countries. In addition to the UK polytechnics, these included the university institutes of technology (IUT) in France, the the *Fachhochschulen* in Germany, the general and vocational education colleges (CEGEPs) in Canada, and the community colleges in the United States (Mazeran 2007).

Saint (1992) considers a system of differentiation to be an appropriate response to dealing with an increased demand for access to higher education without prompting proportional growth in public sector budgets for education. The establishment of lower cost alternative institutions differentiated in terms of missions, function and modes of delivery would be, according to him, the most efficient approach. A broader institutional diversification strategy

would include the following types: traditional colleges and universities, community colleges, polytechnics or technical institutes, adult or continuing education programs, productive sector training programs, and distance learning programs. The UK polytechnic experiment was based on a conviction that when higher education systems are more differentiated, they can accommodate a larger and more diverse student body in cost-effective ways.

The emergence of a binary system does not imply that the distinctions will or can be maintained forever. Analyses have pointed out that governmental policies and other environmental influences, as well as organizational strategies and behaviour, have an impact on the relationships between the different sectors (binary or otherwise) of higher education systems (Huisman, and Kaiser 2001). Before looking at subsequent changes in the binary system, let us consider and examine some other international systems.

The Australian binary system was the direct consequence of a 1965 report of the committee of inquiry into the future of tertiary education (the Martin Report). This report recommended a division in the higher education system into a University sub-sector and a Colleges of Advanced Education (CAEs) sub-sector. The latter new sector was created by bringing together a disparate group of largely single purpose institutions, including teachers' colleges, under the umbrella title of CAEs. Two separate funding systems were introduced for each sub-sector. They were administered by two separate commissions supported by two distinct sets of legislation (Gamage 1993).

In the United States, systematic diversity has always been regarded as a guarantee of excellence and the precondition for higher education to respond flexibly to the needs of society (Huisman and Kaiser 2001; Rothblatt 2000). The state of California is probably the best known and perhaps the most effective example of state-wide system planning in the public higher education sector. In general, U.S. higher education exhibits differentiation of public higher education within all states (Altbach 1999). The American academic system is a complex set of institutions that serve many different needs. The system is a hierarchy, with the research-oriented universities having the highest prestige and most influence. However, considerable variety also exists within the system. With more than 13 million students in post-secondary education and more than 3,000 colleges and universities, higher education diversity in the USA is inevitable. The research universities (like Harvard, Berkley, or Wisconsin) occupy the pinnacle of the system. These are the "multiversities" that Clerk Kerr discussed in his classic review of contemporary higher education. The top one hundred American universities dominate research funding from both government and private foundations. They produce a large part of the nation's research output. This hierarchy, according to Huisman and Kaiser (2001), is necessary because a standardised system cannot respond to the educational needs of both the elite and the masses. In order to absorb a more heterogeneous clientele, mass systems must be more differentiated than elite ones.

A system of elite higher education without the balancing force of mass higher education would not be politically or socially viable, and a system of mass higher education without the academic models and values of elite institutions would be unsound educationally and politically (Huisman and Kaiser 2001). A wide variation in admissions and degree standards has emerged as a result of differentiation by function in the United States higher education system. Its purpose is to provide different educational experiences and life chances for different populations. It has also produced a ranking system or pecking order of institutions contending in the marketplace for preferred brand name recognition.

Ogawa (2002) outlines the Japanese version of differentiation that involves the separation of research and teaching. The universities regard undergraduate and postgraduate schools as pure teaching organizations. Separate research organizations have been established to which faculty members belong. While research organizations tend toward fraternization in the nature of their inquiry, teaching organizations offer appropriate organized knowledge (curricula). In a traditional system, a research organization had to be changed at the same time a teaching organization was changed because both were unified. This was at times problematic because new research activities were not always relevant to the set teaching and training curriculum and would therefore be thwarted. To avoid this conflict, teaching and research functions were separated (Ogawa 2002). Instead of “scattered independent organizations,” Japanese higher education has been transformed into loosely coupled systems.

The era of the European Union has ushered in a trend for greater synergy and standardisation in higher education across Europe. Several governments have indicated that structural changes in higher education systems have been inspired by the idea of not wanting their systems to deviate too much from European trends.

In the Dutch higher education system, the higher vocational education stream and the university route are two distinct pathways. At the secondary level, the HAVO/MBO route prepares students for training at *hogenscholen* and the VWO prepares students for university. A similar pattern can be found in the German higher education system where the *Fachhochschulreife* allows students to be admitted to a *Fachhochschule* but not a university. A *Hochschulreife* permits students to go to either a *Fachhochschule* or a university. Admission requirements for the different higher education sectors in Austria, Flanders and Sweden are all the same. Denmark, France, and the United Kingdom have additional requirements for entry into universities, namely, the *concours* in France and A-levels in the United Kingdom (Huisman and Kaiser 2001). Only the universities offer doctoral degrees in the “binary” examples listed above—Sweden and the UK excluded—but candidates with masters’ degrees from other institutions are allowed to register at the university for further study.

Shifts Within and From Binary Systems

Scott (1998) identifies the main change in higher education as the “grand secular shift from elite to mass higher education.” He lists the following dichotomous attributes of the two systems. The elite system is described as being exclusive and steeped in tradition, offering uniform environments and uniform standards. On the other hand, the mass higher education system is perceived as less selective, more inclusive, more diverse (different types of institutions), and offering various processes of education.

Ross (2003) suggests that the Robbins Committee in the UK underestimated the growth of public interest in higher education. The response to the establishment of the polytechnics was strong and numbers increased much faster than expected, particularly for female students. This produced a rapid expansion of the polytechnic sector and a change in its mission and orientation. The polytechnics increasingly embarked on programs similar to those of the universities, and ultimately the student populations and even the curricula were not very distinctive between the university sector and the polytechnic sector.

The White Paper *Higher Education of 1991: A New Framework* ended the binary policy in the UK. All polytechnics and a number of other colleges were granted university status

with the power to award their own degrees. Smith and Webster (1998) echo the above reasons for the demise of the binary system in the UK. They claim that the expansion of higher education provision was accompanied by a squeezing of resources and this manifested itself in growing student poverty, declining academic salaries, falling academic social status, and in the increasingly shabby fabric of universities themselves. On the other hand, Neave (2000) blames the interventionist state in its drive for mass education. The phenomenon of ‘academic drift’ set in very soon after implementation of the binary system. The polytechnics, supposedly differentiated from the universities, in fact sought to emulate them—even to the point of launching fine arts courses. Meanwhile the universities also experienced “vocational drift,” offering vocational courses and short cycle options in competition with the polytechnics (Archer and others 2003). Pratt (2000) makes the following point:

Although, in the end, the polytechnics succumbed to the temptation to acquire conventional university titles in 1992, by the time they did so, the universities also were significantly different from the institutions they were in 1965 when the binary policy was inaugurated. They too had begun to recognize the importance of a vocational emphasis, to accept students with a wider range of entry qualifications, to offer greater choice through modular courses and a greater concern for the student’s learning. It became possible to talk of ‘vocational drift’ within the universities as much as ‘academic drift’ within the polytechnics, and a blurring of boundaries occurred between the two sectors.

Similarly in Australia and Hong Kong, the binary lines in higher education were repositioned. Polytechnics adopted the university title and the number of universities doubled (Teather 1999). The academic programs offered by CAEs were strengthened and they introduced postgraduate programs, including doctoral programs that involved research. The lines between the sectors became indistinct. The only apparent difference was that universities received funds for research whereas CAEs did not. Nevertheless, the CAEs in Australia trumpeted their growing research capacity as part of their demand to be recognized as universities (Gamage 1993).

Aside from the interventionist strategies employed by governments, Meek (2000) asserts that the reliance on market forces to achieve higher education policy objectives, including that of diversity, has backfired. According to him, countries like Australia, New Zealand and the United Kingdom have increasingly incorporated market competition into higher education. Instead of diversifying into new areas in an attempt to capture a specific market niche, institutions imitated the activities of their successful competitors. Two crucial factors influence the direction of higher education diversity: (1) the way in which governments structure the policy environment, and (2) the relative power of academic norms and values within higher education institutions (Meek 2000). Meek further suggests that various factors have encouraged, if not forced, governments towards a market orientation for higher education (2000). These include:

- The substantial costs associated with mass higher education, which have increased governmental concern to realise more value per dollar committed in this sector.
- A clear expectation by government that the higher education sector be more closely tied to the national economy, not only in terms of meeting national labor market needs, but also through the commercialization of its research and teaching activities.

- As a larger proportion of the population expresses interest in acquiring higher education, higher education inevitably becomes more of a political issue.
- Due to an aging population, the burden of social entitlements on the national treasury is rising dramatically, generating pressures to cut government expenditure and demands for greater efficiencies from public sector institutions.
- In all industrialised countries, traditional manufacturing industries are being replaced by the so-called knowledge processing sector, of which higher education is seen to be an integral part.

These factors are, according to Meek, part of a much larger process of economic globalization that has produced a fundamental redefinition of the social value of public service in general and of universities and education in particular. This has heightened political interest in the sector. The university is now asked to be “accountable” to those who pay for it, whether these are large governments, corporations, individual taxpayers or even students. Jarvis (2001) believes that globalization is indeed a primary factor determining the current shape and focus of higher education. For him, universities have ceased to be ivory towers, protected from the pressures of the real world. He believes that universities have tried to respond to some of the social pressures of globalization, but with limited success. Their reactions appear to be almost unreflective, since they do not seem to know what the university should be any longer. That is, they respond automatically and uncritically to the pressures of social change (Jarvis 2001).

Ball (1989) argues that the role of research becomes problematic in the present context of mass higher education. He believes that it is possible to arrange dual funding, that is for research and teaching, in an elite system of higher education. But this is neither possible nor sensible in a mass-based system of higher education. Ball believes that no logic resides in the assumption that the scale of fundamental research must be determined by the scale of higher education.

The current challenges facing higher education institutions are identified by Weber (1999) as:

- The changing environment: globalization and the influence of information technology;
- Shifting missions: responsive and responsible universities; the changing shape of research universities; emergence of competitors to traditional universities;
- Growing student diversity and the need to adapt teaching in response;
- The academic profession: the changing role of teachers; tenure; developing a new generation of staff; and
- Higher education finance: broadening revenue; reducing costs.

Linked to the changing environment for local higher education systems is a growing and diversifying public demand for higher education in countries with an adequate national higher education infrastructure. Established universities in western countries, motivated by decreasing (national) funding for higher education, are searching for new cross-border markets to tap into (Van Vught and others 2002). Educational markets have been established through trade agreements and initiatives of the World Trade Organisation (WTO), in particular the General Agreement on Trade in Services (GATS). In the GATS negotiations,

agreement has been reached to classify primary and secondary education as public consumption goods, with predominantly public rather than individual benefits. However, with regard to higher education, the balance of public and individual benefits is often seen by educational economists as leaning more towards the individual side (i.e., private returns area greater than social returns). Thus, GATS views higher education as a tradable service that should not be protected by tariffs. This expansion of international trade in higher education is also being facilitated by advances in information and communication technologies (ICTs), which are increasingly used to reach out to distant students who are interested in earning a foreign degree while remaining in their own country.

African Experience

In the context of these international trends, most African countries offer, as they have done for decades, a differentiated post-secondary education consisting of a mix of training colleges, technical/vocational institutes, polytechnic-type institutions and universities. At the top of this pyramid are the universities and polytechnics (Sawyerr, 2002). The diverse configurations of the higher education sector in Africa reflect various historical influences along with the contextual—as well as global pressures—brought to bear on this sector (see Box 1). The pressure for mass access to higher education, not only in Africa but across the globe, has swayed governments to introduce policies favouring institutional and program differentiation. In Africa, new types of higher education institutions and differentiated programs have emerged in spite of an increasingly constrained financial environment.

The history of higher education in Africa, from its pre-colonial and colonial roots to the post-independence phase, provides some answers as to the current configurations of institutions on the continent. The pre-colonial higher education institution in Alexandria, Egypt (Lulat 2003), together with a range of Islamic and Arabic educational institutions, were precursors to Africa's later Anglophone, Francophone and Lusophone manifestations of the education systems established by colonial administrations. At first, formal education in the European colonies of Africa was left to missionaries. But as more and more Europeans settled in the colonies, interest in formal education increased. But it was not necessarily extended

Box 1: Tertiary System Differentiation in Cameroon

The higher education sector in Cameroon is differentiated along linguistic lines as well as the nature of programs resulting from the country's two linguistic cum higher education traditions. The higher education system in Cameroon strongly resembles that of France and shares a lot in common with those of Francophone African countries like Senegal. However, British influence is strong in a couple of the institutions, notably the University of Buea, which is a predominantly English-speaking university. Three types of tertiary institutions make up the higher education sector. These are the universities, specialized research and career-focused training institutes and schools, and advanced professional schools or *grandes ecoles*. The government decree of 1993 regarding the organization of the higher education system in Cameroon allows the universities to develop, within their mission and mandate, specialized institutes or centres for scientific and technological studies, research, professional training or further training. Essentially, the higher education system is divided into two groups: the larger university sector and the smaller, highly selective, non-university sector. However, the overall system is richer than a simple binary system.

to the local population, based on the general view that Africans were intellectually inferior and therefore uneducable (Lulat 2003). This view was gradually modified by events—the industrial revolution, the expansion of colonist economies, and the two World Wars—to the point where vocational and industrial training was deemed necessary for Africans.

Subsequently, the British established in Africa a number of higher education institutions, known as the “Asquith Colleges,” through their Inter-University Council for Higher Education. Graduates of the Asquith Colleges received their degrees from the University of London on the basis of the affiliation of the colleges to that university (Lulat 2003). Stronger local demand for higher education was also linked to a rising tide of nationalism in West Africa and an emergence of Pan-African movements (Ajayi, Goma, and Johnson 1996).

Lulat (2003) cites Ashby (1966) who charges that African elites were to blame for the lack of development of higher education in French colonial Africa. African elites in the Francophone colonies considered local institutions to be inferior to those in France and placed greater currency in the opportunity to study in France. The cost of educating Africans at French universities soon became prohibitive. In preparation for eventual political autonomy, the French created overseas branches of French universities in the African colonies. These took the form of institutes of higher education that served as forerunners of national universities (Lulat 2003). These institutes maintained close academic and administrative ties with French universities, even after independence when they became national universities. The primary reason for developing local institutions of higher learning in the post independence era was to produce administrative and technical staff for the civil services, as well as teachers for secondary schools and teacher training colleges. This intention was flavored with a desire to maintain equivalence with European university standards, and each colonial power therefore imposed its own pattern on the institutions it sponsored. Overseas colonial Colleges thus became an avenue of opportunities for younger staff particularly from Britain, France and Belgium, to spend some time in Africa and become experts in African Studies, Tropical Medicine, Agriculture and Technology (Ajayi, Goma, and Johnson 1996). The colonial university Colleges were criticized for their “elitist” orientation, their narrow curricula, and academic irrelevance, all of which contributed to the view that they were “ivory towers.”

The transition to full university status was prompted by the nationalism of African states which attempted to assert their independence from their respective colonial powers. Typically, in most post-colonial African countries, single national universities were established as part of the apparatus of newly independent statehood. The development of the ‘decolonised’ higher education system in South Africa was introduced with the University Act of 1916 enacted by the Union Government to establish the University of South Africa, together with the Universities of Cape Town and Stellenbosch (Ajayi, Goma, and Johnson 1996). These institutions were intended for the white settler community. All subsequent higher education institutions, including *technikons* and colleges, were established along racial lines as separate sub-systems to serve the white, coloured and black racial groups in the country. This structure endured until the demise of apartheid in 1994. The unusually large system of 36 institutions (21 universities and 15 polytechnics) which eventually resulted was the direct outcome of linguistic/cultural rivalries between British and Afrikaner nationalism that were reinforced by the separate development policies of formal apartheid, in which separate (but far from equal) institutions were provided for each major racial and ethnic group (Cooper and Subotzky 2001).

As a result of these circumstances, the extent and type of institutional differentiation has varied widely across different African regions and countries. Saint (1992) suggests that system differentiation in Africa is generally at an intermediate stage. Polytechnics are frequently found and teachers colleges are common, but tend to be accorded a clearly inferior status by students and governments (they are poorly articulated). Even where higher education systems are differentiated in terms of institutional missions, they are rarely differentiated in their financing. African institutions and systems of higher education receive 85 percent or more of their funding from government. The tendency to regard as inferior those institutions which are mainly involved in teacher education, technological or vocational specializations must be eschewed, according to Brown Sherman (1993) because Africa is short of skilled professionals in education, the sciences and technology.

There can be no real consensus for higher education reform without a focus on non-university institutions. The teachers and the facilities for training such persons should be wisely used. Consultations are needed between the universities and other higher education institutions in order to weigh the strengths of these institutions and to consider such possibilities as transfer of credits, sharing of facilities, and even joint programs, where feasible.

The ability of African nations to achieve a coherent mix of research and technical/vocational systems of higher education is doubted by Altbach (1998), who alleges that third world nations are basically consumers of knowledge and dependent upon industrialised nations for advancement in scientific knowledge. While he agrees that it is difficult to generalize, he maintains that third world universities are, without exception, “peripheral” institutions in an international context and that they often lack an orientation toward scholarly production. Brown Sherman (1993) agrees with this point, saying:

Africa has a marginal place in the global economy. Africa’s universities are part of an international academic system and are ‘peripheral’ to that system. One consequence is the considerable intellectual dominance, which impinges on the continent. In line with this is the large amount of research related to the continent done by academics and universities foreign to the continent.

Framework of Analysis

This literature review, Africa’s history and our own field experience suggested the following framework of analysis. First, with regard to *differentiation*, twelve dimensions of differentiation were identified as the most fruitful to investigate. Universities and polytechnics were then compared on these dimensions in order to assess whether observable differences between the two types of institutions could be found. In addition, where fruitful, an attempt was made to apply the dimensions among similar institutional types. These dimensions are listed in Table 1.

With regard to *articulation*, five dimensions were also selected as the most fruitful to look into and the two types of institutions were compared on each of these elements. Again, where possible, these dimensions were analyzed within the same category of institutional types, or sub-types, in order to complete the analytical picture. The dimensions of articulation are presented in Table 2.

Table 1. Dimensions of Differentiation among Types of Higher Education Institutions

Dimension	Features
<i>Institutional mission and mandate</i>	What are the institution's mission, mandates and outputs, especially with regard to nature of knowledge?
<i>Curricular/teaching</i>	Content, teaching emphasis and pedagogical approach
<i>Qualifications</i>	Type of qualifications obtained and purpose
<i>Admissions</i>	What are the selection criteria utilized?
<i>Fields of study</i>	Diversified or similar?
<i>Research</i>	Level and type of research conducted; role of research (e.g., learning, income generation)
<i>Academic Staff Qualifications</i>	Required academic qualifications; any non-academic qualifications?
<i>Orientation</i>	Local versus international; applied versus scientific; knowledge versus competencies
<i>Governance/Regulatory Framework</i>	Levels of autonomy; degrees of accountability; governance structures such as Councils/Boards, Senate, and Faculty Boards; legal instruments such as Individual Acts of Parliament/Charters; General Universities Act.
<i>Financing</i>	Sources of financing. How diversified? Degree of autonomy in financial management.
<i>Quality Control</i>	External or internal; mechanisms employed
<i>Institutional characteristics</i>	Size of enrollments; student characteristics; campus organization; education delivery system employed.

A key observation on Tables 1 and 2 is that in both differentiation and articulation, the primary unit of analysis is the *type* of institution, not the individual institutions. But where the situation on the ground warrants it, an attempt is made to apply the identified dimensions to institutional sub-types; for example, between public and private universities. In some cases, a further attempt is made to assess “similar” institution types; for example, among public universities and among public polytechnics. Do any subtle differences exist between them? Do they articulate with each other? The extent to which the latter occurs varies from region to region and from country to country, depending on data availability and the characteristics of the higher education system in each country. Also, in each of the countries/regions, it was necessary to map the higher education system as a pre-condition for analysing differentiation and articulation. The mapping exercise allows identification of the system's key features, especially whether the system is binary or some other type.

Educational policies and institutional supervisory structures have implications for differentiation and articulation. State oversight structures for non-university institutions vary from country to country. In Ghana, the National Council for Tertiary Education (NCTE) is the sole supervisory agency for both the polytechnics and universities. In contrast, Nigeria maintains three separate oversight bodies for sub-sectors of the tertiary system: the

Table 2. Dimensions of Articulation among Types of Higher Education Institutions

Dimension	Features
<i>Admissions criteria</i>	Same or different criteria; what types of criteria? Jointly managed or individual admissions processes?
<i>Structure and Recognition of Qualifications</i>	Is academic achievement recognized across institutions? Are there similar requirements for similar types of academic awards? Do they recognize each other's qualifications for employment purposes?
<i>Transferability of Credits</i>	Can courses completed at one institution be counted towards the graduation requirements of another institution? Is there a system in place to facilitate the transfer of academic credits?
<i>Academic Staff Mobility</i>	Do academic staff circulate among different types of institutions? With what frequency? In which directions? Are there administrative structures in place to facilitate this mobility?
<i>Collaboration and Partnerships</i>	What is the extent of institutional collaboration in joint research, joint teaching, cross-referencing of courses, sharing of facilities, common services?

National Universities Commission (NUC) for the universities, the National Board for Technical Education (NBTE) for the polytechnics, and the National Commission for Colleges of Education (NCCE) for teacher training colleges. Arguments have been advanced for and against having a single supervising body for the entire tertiary education system. Invariably, where only one body exists, institutional representation on the body is dominated by the universities. In the case of the NCTE in Ghana, for example, the ten polytechnics in the country have only a single representative, compared with one representative apiece for each of the six universities. This unequal representation has fuelled the perception that polytechnics do not receive the attention they deserve or that even if they do, they are neither fully appreciated nor promptly addressed. On the other hand, protagonists of a single supervisory structure believe that having separate bodies can only create obstacles to articulation by accentuating the perceived differences in status between university and non-university institutions. It is instructive that in Senegal and Cameroon, where a ministry of higher education exercises direct oversight responsibility over both institutional types within a unitary university framework, similar perceptions of inferiority or subordination are more subdued.

As will be seen, African countries display far more differentiation than articulation within their higher education systems. The systems studied are quite diverse, being classified as unitary, binary, trinary, semi-differentiated or fully differentiated. However, in various cases these differences exist more in theory than in fact, as instances of academic drift, vocational drift and institutional imitation are common. The polytechnic sub-systems appear relatively undifferentiated in comparison to the university sub-systems, except in the rather obvious sense that the former offer lower-level training than the latter.

For the most part, articulation seems to be in its infancy. The mobility of staff and students between university and non-university tertiary institutions suffers from a lack of cooperation

Box 2: Weak Articulation in Ghana's Tertiary Education System

The two main components of the tertiary education system in Ghana—the universities and the polytechnics—are poorly articulated at present. The two oldest universities in the country (the University of Ghana and the Kwame Nkrumah University of Science and Technology) do not recognize the HND awarded by the polytechnics as an entry qualification to any of their programs of study. However, these same universities recognize their own diploma courses and qualifications for further studies at the degree level. The unfortunate impression created by this policy is that the HND qualification is irrelevant to university studies. However, this position is not shared by all the universities in the country and practices may change as cooperative exchanges develop between the universities and the polytechnics. Evidence of this tendency can be found in the fact that some of the public and private universities have started admitting HND holders into the second or third year of their four-year degree programs, especially in the vocational and business studies areas. Among the well-known universities that currently give credit for polytechnic qualifications in their admission schemes are the University of Cape Coast (public), the University of Education at Winneba (public), the Central University College (private), and the Valley View University (private).

and absence of dialogue between the two institutional groups. In fact, an unhealthy rivalry often characterises their relationship. Polytechnic graduates seeking “academic progression” into the university system often encounter a void of clearly defined articulation pathways to follow, the level to which they are admitted being dependent on the course they wish to pursue and the regulations and requirements of the particular university to which they are applying. Credit transfer mechanisms rarely exist between similar polytechnic and university programs. In fact, some universities do not even recognize any prior learning or skills acquired at the polytechnic level in their admission requirements. Ghana offers an example of such disarticulation, but also shows some progress in tackling the problem (see Box 2).

Interestingly, articulation and mobility between similar institution types is also rare. Students from private universities have little chance to transfer to public universities. Likewise, student mobility among public universities is frequently not well defined, particularly in Anglophone Africa. We conclude that the absence of an easily understood and mutually accepted credit transfer system is a major barrier to the articulation of many African higher education systems.

The situation regarding articulation in Francophone West Africa is different. In Senegal and Cameroon, higher education institutions that deliver sub-degree polytechnic-type qualifications are organizationally linked to the universities and are not seen as entirely separate or autonomous institutions. In fact, it is not uncommon for professors to teach courses at both the sub-degree and degree levels. For this reason, top graduates from the diploma-awarding university institutes of technology can be admitted into degree programs at the appropriate level, subject only to passing an entrance examination.

Differentiation and Articulation in Sub-Saharan Africa

Observations from the Literature

Evidence from the literature is corroborated by the findings from this study. The main conclusions from the literature are, therefore, similar to the conclusions that one would draw from this study. These are as follows.

Differentiation and articulation have become key issues within the recent development of higher education worldwide. The growing literature on this subject stresses the importance of providing varied types of institutions and program offerings to meet the increasingly diverse needs of the changing labor market and student intake. Definitionally, the literature distinguishes between differentiation and diversity. Expansion of systems in terms of establishing more institutions does not necessarily mean differentiation, unless program offerings are sufficiently dissimilar. A distinction can also be drawn between horizontal differentiation across institutional types and vertical differentiation within an institution, with the latter referring to diversity of programs.

The literature suggests that differentiation has been driven mainly by market forces, and by government regulatory frameworks seeking to ensure an appropriate institutional and program mix in order to meet national priorities. Two opposing tendencies are evident: one towards the traditional university type through academic drift and driven by aspirations for higher status, and the other towards institutional differentiation and diversity to accommodate a wider market. The latter includes vocational drift in universities in order to capture more of the lucrative short-term training market.

Patterns of differentiation within countries vary enormously. A growing literature describes the various forms of binary systems which have evolved in different countries. In the UK and Australia, the binary system was established as part of the massification of higher education, and subsequently dis-established as a result of academic drift and

institutional isomorphism. Several other countries have generated different forms of binary and trinary systems. Within the proliferation of new institutional types, cross-border provision and the rise of private higher education, the boundary between university and polytechnic-type institutions has become increasingly blurred.

Articulation is far less documented than differentiation. Much of the literature addresses issues of student mobility. Articulation can be seen as somewhat contradictory to the principle of differentiation (a) in implicitly conveying a lower level of status to the lower levels of provision, and (b) in reducing diversity through the pressure for uniformity and standardisation of program and qualifications mixes.

Post-colonial higher education in Africa has been largely conditioned by colonial rule. In many countries, national universities were established on the basis of colonial precursors. Since then, non-university polytechnic-type institutions have developed. It is clear that to meet the demands of sustainable development, a suitably diverse, differentiated and cost-effective tertiary system is required. On balance, differentiation in Africa seems to be at an intermediate stage, with the non-university institutional types suffering from lower status.

Some elements in the literature are pessimistic about the capacity of African nations to achieve a coherent mix of high-level research-based academic education and technical training. In the view of some, African higher education institutions remain peripheral to the global higher education community. African nations clearly face a tremendous challenge to ensure that their systems of higher education are sufficiently differentiated in order to meet national priorities and the requirements for sustainable development.

Nature of Differentiation

The general finding from the study is that differentiation in higher education systems is apparent within Africa, but the nature and extent of it vary from country to country. Table 3 outlines the differentiation profile for each tertiary system studied. These differences originate in the varieties of colonial experience, political economy and immediate post-independence history. They also reflect how countries have subsequently been able to position themselves in relation to the internationalization of higher education and to the market forces associated with globalization. Thus, South Africa, for example, exhibits a fascinating picture of institutional differentiation quite simply because this was an integral dimension of the apartheid policy. Nigeria too displays considerable institutional differentiation, this time on account of its size, societal complexity and consequent nature of the demand for higher education. As expected, small and historically different countries, such as Rwanda and Malawi, reveal less differentiated and, therefore, less complex higher education systems. On a continuum of differentiation, South Africa and Nigeria would be at one end, while Malawi and Rwanda, and perhaps Senegal, would be at the other end. Not unexpectedly, significant variations were found between the Anglophone and Francophone countries in the forms of differentiation, again on account of the respective colonial/cultural/linguistic foundations of the systems. This general finding is to be expected and is therefore not significant. What would have been significant is a finding that did not reveal variations in the level and extent of differentiation.

Table 3. Differentiation Profiles for Selected African Tertiary Systems

Country	Quality		Public Univ.	Private Univ.	Public Polytechnic or Prof Inst	Private Polytechnic or Prof Inst	Public Tech. Colleges	Private Tech. Colleges
	Buffer Body	Assurance Agency						
Cameroon	1	1	6	20	3	X	X	X
Ghana	1	1	7	28	10	0	n.t.	n.t.
Kenya	1	1	7	17	4	0	n.t.	n.t.
Malawi	0	0	2	2	2	1	X	X
Mozambique	1	0*	3	5	8	6	n.t.	n.t.
Nigeria	2	2	50	25	51	6	46	9
Rwanda	0	0	2	6	4	4	4	4
Senegal	0	0	2	3	15	44	X	X
South Africa	1	1	22	3	0	0	100	350
Tanzania	1	1	8	13	15	X	X	X
Uganda	1	1	4	13	1	X	67	X
Zambia	0	0	2	5	0	0	3	n.t.

* = In process of establishment.
 X = in existence, but data not collected.
 n.t. = not included in tertiary system.

The Prevalence of Binary Systems

Though the systems are quite varied, evidence suggests that the binary system is dominant, with universities and polytechnics as the main sub-systems (see Table 4). Most systems began with a binary structure, and Ghana, Kenya, Malawi, and Tanzania retain them today. However, variations occur around the binary model—with Cameroon, Nigeria, and Senegal being classified as differentiated, Uganda as trinary, and Zambia as unitary. Mozambique and Rwanda seem to be in transition towards differentiated systems.

The traditional binary boundary between universities and non-university institutions is becoming increasingly blurred. Some interesting university-non-university institutional

Table 4. Classification of Tertiary Education Systems in Selected Countries

	Cameroon	Ghana	Kenya	Malawi	Mozambique	Nigeria	Rwanda	Senegal	South Africa	Tanzania	Uganda	Zambia
Type of System Differentiation	D	B	B	B	SD	D	SD	D	D	B	T	U

B = Binary; D = Differentiated; SD = Semi-differentiated; T = Trinary; U = Unitary.

hybrids have emerged: for example, the Kigali Institute of Science, Technology and Management (KIST) in Rwanda, the “comprehensives” in South Africa, and the University of Malawi. This blurring is the result of two main drivers. The first relates to market forces, which create a two-way drift: “academic” drift (the aspirations of non-universities to gain university status), and “vocational” drift, (universities seizing market opportunities by offering vocational courses). Academic drift is evident in Ghana where polytechnics have been agitating for university status, in Nigeria where polytechnics have been offering degrees as affiliates of universities but now want and have been allowed to offer their own degrees, and in Kenya where polytechnics are in the process of being elevated to university status. Vocational drift is evident everywhere as universities attempt to make up financial shortfalls by offering high-demand, market-driven vocational programs.

The second driver, especially in complex higher education systems such as those of South Africa and Nigeria, is a lack of policy clarity regarding the appropriate boundaries between polytechnics and universities in terms of their mission, purpose, curricula and programs (and the knowledge underpinnings of these). This has allowed the two-way drift to proceed unencumbered by regulation. The continuation of the strict binary divide and, in particular, the narrow interpretation of polytechnic training within this, has been contested as technicist and divisive, particularly in South Africa. This tends to inhibit debate on important issues such as equity, access, mobility and the relationship between education and training in general. Though contestation around the binary divide has been more evident in South Africa, compared to the other countries in this study, it is a debate that could benefit other countries as well.

A strong driver of differentiation between universities and polytechnics is the public perception of polytechnic vis-à-vis university education. With very few exceptions, mainly Uganda and South Africa, the overall public perception is that polytechnic education is of much lower status than university education. This perception results from: (i) public misunderstanding of the orientation and philosophy of polytechnic education vis-à-vis university studies; (ii) the correct perception that entry requirements are in general less rigorous for the polytechnics, making it easier to enter a polytechnic than a university; (iii) lack of a clearly defined institutional mandate of the polytechnics; (iv) inadequate human and material resources for effective teaching and learning in polytechnics, often reflecting similar status misperceptions within the government budgeting process; (v) inadequate skills training of polytechnic students; (vi) limited well-paying job opportunities for polytechnic graduates; (vii) ill-defined articulation and credit transfer mechanisms between polytechnics and universities, and (viii) the absence of academic dialogue between university and polytechnic authorities. (We shall say more on drivers later.)

Institutional versus Program Differentiation

As a broad exploratory survey, this study was able to document the nature and extent of institutional differentiation, but was less able to establish the nature of programs differentiation in any detail. This is because an adequate documentation of program differentiation would require different analytical methods. Specifically, it would need to be informed by a detailed content analysis of the programs on offer in order to ascertain whether they are indeed different. This is especially so with regard to programs offered in similar institutional types, such as polytechnics or universities. Table 5 presents the academic award structure for the Anglophone and Francophone tertiary systems.

Table 5. Structure of Tertiary Degrees Awarded in Anglophone and Francophone Tertiary Systems

	Anglophone	Francophone
Universities/ <i>Grandes Ecoles</i>	Phd MA/MSc BA/BSc	<i>Doctorate</i> <i>Maitrise</i> <i>Licence</i>
Polytechnic/ <i>Institut Universitaire de Technologie</i>	Higher National Diploma National Diploma Certificate	<i>Diplome Universitaire de Technologie</i> <i>Brevet de Technicien Supérieur</i>

Universities, for example, are increasingly branding their programs through re-labeling. To go beyond the label in order to ascertain whether the program content is indeed different from those of other universities requires detailed content analysis. The issue of program differentiation has been made even more complex by the current practice of simultaneously splitting and combining program content. Thus an MBA degree could yield several specialized degrees such as Masters in Marketing, Masters in Accounting, Masters in Finance, and so forth. Simultaneously, universities are increasingly combining disciplinary content to create new multidisciplinary programs such as development studies, environmental studies and gender studies. What does this mean in the context of differentiation? It means there is a need to establish whether the simultaneous process of splitting and combining is yielding new knowledge areas. To establish this requires detailed and patient program content analysis.

Proliferation of Non-University Institutions

Though this study has concentrated on the relationship between universities and polytechnics, the researchers were struck by the proliferation of other non-university institutions, a recent phenomenon in most countries.² This dynamic is based on widespread recognition of four fundamental rationales for differentiation: (a) to accommodate increasingly diverse student body; (b) to meet changing labor market needs and national development priorities; (c) cost effectiveness; and (d) increased access, mobility and equity. The higher education landscape in Africa is clearly no longer dominated completely by universities. Indeed it could be said that the post-secondary education which some countries regard as higher education and not simply as tertiary or further education, is now dominated by non-university players.

This is not necessarily a bad thing. Indeed it can be a positive development, given the capacity limitations of universities. However, the proliferation of these institutions poses

2. These field observations are neither supported nor contested by the very limited UNESCO data available on non-university tertiary enrollments in Africa. One of UNESCO's classifications of educational enrollments is for post-secondary but non-university programs (ISCED Level 5B). On this measure, comparative data are available for only 11 African countries between 2000 and 2004. They indicate that non-university tertiary enrollments increased over this period in five countries (Botswana, Burundi, Madagascar, Mauritius, Rwanda), declined in another five countries (Ghana, Kenya, Nigeria, Tanzania, Uganda), and remained essentially unchanged in Mali.

a serious regulatory challenge. It calls for the creation of policy frameworks and quality control mechanisms to rein in such institutions and integrate them into a coherent system. The problem in doing this is that most countries do not have comprehensive human development policies to guide this process. This leaves the door open for anybody claiming to provide “human development” to set up shop within the tertiary system, purely to test the extent of demand.

An Explosion of Domestic Private Universities

A common feature in most of the countries covered in this study is the appearance and multiplication of private providers of university education. This is a significant regional trend. Since 1990 private universities have increased at a much faster rate than public universities. Although the number of public universities has expanded by 66 percent over the past fifteen years—from 113 to 188—the number of private universities has multiplied seven-fold during the same period from 14 to 107 (Darvas 2007:17).

The rise of private provision in higher education responds to two factors. The first is the high demand for university education. A common feature in the countries covered in this study is that nearly all those who qualify to enter university would much prefer to go to university as opposed to attending another type of institution such as a polytechnic. As we have seen, this reflects the high social status accorded to university education and the resulting household pressure “to go to the university.” The overall result is very high demand for university education even when market conditions (for example, graduate unemployment) indicate that this might not be the most rational thing to do. The second factor is the inability of the public sector to meet this demand for university access. Data from all the countries covered in this study indicate that only a small fraction of those who obtain the minimum requirements to enter universities are actually admitted to the public universities. The explanations for this exclusion include: inadequate funding from the government; linking of admissions to available bed space in universities; and inadequate staffing in the universities.

Private providers have stepped in to meet some of this demand. In the context of this study, the private providers have certainly helped to expand access to higher education, but only to a limited extent because of their low enrollments. In most of the countries, private universities outnumber the public universities. This means that if, as institutions, they develop vertically by way of diversifying their programs and increasing their enrollments, they will become increasingly important in both systemic and institutional differentiation. At the moment, private universities tend to offer limited and similar programs, thus contributing little to differentiation. In particular, they tend not to offer science-based programs because these are expensive to mount and student demand in these areas may be somewhat less. In some countries—including Tanzania, Kenya and Uganda in East Africa—private universities are beginning to offer science-based programs. But here again, the programs being offered are quite similar to those available in public universities. Thus, although the private universities have expanded access, it is debatable to what degree they have contributed to systemic program differentiation.

On balance, private universities and other private tertiary education providers are beginning to take shape as an educational force in the region. But they are not yet a major force. However, they are even more undifferentiated horizontally than public universities,

concentrating as they do on offering the less expensive humanities, social sciences, business and ICT programs. As privately operated institutions, they are unaccustomed to working together except on collective responses to regulatory requirements from the government that affect their mutual self-interest. Not only do they not engage in collective discussions amongst themselves, but they also do not seem to value the thought of formally engaging the public universities to identify common ground for possible collaboration. Perhaps the potentially controlling and financially onerous tutorial relationships of public universities that are imposed by governments on private universities are to blame for this resistance.

Differentiation versus Expansion

The proliferation of private universities illustrates an important distinction made in this study. That is, the distinction between differentiation and expansion. Not every expansion produces differentiation. This is especially so with regard to increasing the numbers of institutions. What is evident from the study is that many of the higher education systems studied have been undergoing expansion in the last decade or so, primarily as a response to increasing demands for access. This expansion has taken place in both the public and the private universities. With regard to the public universities, the considerable expansion has often occurred as a political reaction to intense public demand and not as a planned diversification of the higher education system. The result is that programs on offer tend to be similar, and sometimes even copied from, the older and better-established universities.

The resulting institutional isomorphism has offset any increase in market demand for graduates, as the market is flooded with university products holding similar qualifications—even down to the course titles listed in their transcripts. While expansion is a legitimate policy response to the problem of access, it bears repeating that expansion does not necessarily produce differentiation, either in institutional types or in program variety. It is necessary to underscore the distinction between the two because evidence from this study suggests that this difference is not always fully appreciated by policy makers. Even less appreciated is the point that it is not enough to have diverse institutional types; within different institutional types, conscious efforts are also required to develop program differentiation. Evidence from this study indicates that this is not happening quickly enough. One exception is Tanzania, where a significant degree of horizontal differentiation can be observed (see Box 3.)

Box 3: Horizontal Differentiation in Tanzania

The tertiary education system in Tanzania, more than in most of the countries studied, shows significant elements of horizontal differentiation. Each of the eight public universities is intended to specialise in specific aspects of development, e.g., agriculture, architecture and physical planning, distance education, teacher education, medical sciences, postgraduate programs, technology, and wildlife management. Likewise, the thirteen private tertiary institutions reflect a certain 'division of labor' among accounting and finance, business administration, communications, health sciences, social sciences and humanities, technology, theological studies and others. In this way, the Tanzanian tertiary system has largely avoided the institutional *isomorphism* or imitation that characterizes many other systems in the region, thereby enabling expansion with differentiation.

Differentiation through Physical Decentralization

Establishing new universities in different parts of the country is usually a political response to access and equity pressures. In some countries, it has been a deliberate response to the problem of lack of differentiation. Mbarara University was established in western Uganda in order to decentralise university education away from Makerere in the capital city. Likewise, Moi University in Kenya was also established 20 years ago in order to decentralise away from the University of Nairobi, which is located in the national capital some 250 km distant. The University for Development Studies in Ghana and the Northern Campus in Namibia are other cases of physically de-concentrating university education. Most recently, Mozambique has announced the creation of a new public university in Nampula to serve the central region of the country.

To their credit, some of these new universities have gone on to introduce distinctly new programs and pedagogies, thus contributing to institutional and program differentiation. For example, even though both Mbarara and Moi universities offer medical training of the type also offered in Makerere and Nairobi universities respectively, they have done so by using the innovative Problem-Based Learning (PBL) pedagogy. The same can be said of the different medical training pedagogies characterizing the more traditional University of Ghana and the newer University for Development Studies, which espouses a strong community-based orientation. But it bears emphasising that this strategy of differentiation, if carried out without adequate planning or the establishment of coordination structures, can fragment the higher education system rather than diversify it, with immense implications for quality.

Cross-border Provision

A key feature of higher education differentiation within the countries covered in this study is cross-border provision. As a result of the financial constraints that limit the expansion of their physical and academic facilities, the higher education systems of the poorer or more populous countries of Africa are unable to accommodate the enrollment pressures exerted on them by the large numbers of school leavers from their pre-tertiary systems. Cross-border educational activities, including the importation of courses and services and the physical movement of students across borders are, therefore, assuming important dimensions in Sub-Saharan Africa. For example, many Nigerian students now attend Ghanaian universities on a full fee-paying basis. Similarly, Nigerian universities have for a long time been training students from Cameroon and other neighbouring countries. Senegalese higher education institutions receive students regularly from other francophone countries in the sub-region who consider Senegalese qualifications of comparable standard to those obtained from France, but at a lower cost. The situation is repeated in East Africa where many Kenyan students study in Ugandan universities because higher education is cheaper there. South Africa has also become an attractive destination for students from nearly all English-speaking African countries because of its diversified system, demonstrated quality and less expensive higher education compared to Europe and North America.

While the importance of cross-border provision cannot be denied as a way of improving access, it is legitimate to debate the extent to which it is increasing “knowledge diversity” in the country of student origin. The issue is this: quite often students will seek

university education across the border because they cannot access the programs they want, say medicine or engineering, within the borders of their own countries. This may be for any number of reasons, but the most common is cost. Only in very rare cases are they likely to seek education across the border because the program is not available in their own countries. This is because, more often than not, African universities across the continent tend to offer similar programs. What this means is that, in the context of differentiation, cross-border provision can only be considering as widening the range of student choice following a detailed analysis of the programs available both in the country of origin and in the recipient country. Only after that can one conclusively decide whether this kind of provision adds to the differentiation of “national knowledge.”

Off-shore Satellite Campuses

A second type of cross-border provision that is gaining ground in Sub-Saharan Africa is the setting up of offshore or satellite campuses by foreign providers that offer “international” qualifications, most often in computer and business-related disciplines. This type of trans-national higher education provision has far-reaching implications for differentiation and articulation within the host higher education system. While the offshore satellite campuses contribute a degree of differentiation, this is limited to the extent that they avoid the science-based programs. In addition, many of them also offer similar programs. Furthermore, they articulate neither with each other, nor within the domestic providers. This is because they owe their presence mainly to the surplus number of qualified pre-tertiary students who may have missed places in public universities, or wanted to pursue overseas university education, but could not afford to travel abroad. The consequence, as has been seen in Kenya, is that such campuses do not always fulfil locally accepted needs, including any policy requirements to provide a different product.

A major problem with off-shore provision is that the terrain they are occupying has hardly been mapped. Quite often, even regulatory bodies do not have a full picture of who is offering what programs, let alone the details of whether the program label is reflected in the program content. It is apparent that, like cross-border providers, the off-shore providers tend to provide what is already available in local institutions. Their contribution to differentiation thus accrues more in institutional than program diversity. Perhaps their major contribution to differentiation is in modes of delivery, given that a number of them have introduced new delivery methods into the host higher education systems. In addition, they have sometimes perfected the existing delivery systems, such as distance learning. They have also created fairly innovative pathways.

Competent domestic regulatory mechanisms are required to ensure quality and comparability of the foreign diplomas and certificates with domestic qualifications as well as their relevance to the domestic labor market and national development needs. In the case of francophone countries that do not have national quality assurance or accreditation bodies, the issue of quality control and system regulation becomes even more acute.

Drivers and Inhibitors of Differentiation and Articulation

Drivers of Differentiation

The findings identify a number of drivers of differentiation. We now turn to these.

Market-driven Programs

All the studies of reform taking place in the African universities, including this study, have identified the proliferation of market-driven courses and programs, sometimes also referred to as income-generating academic programs, as one of the major changes to take place in African universities in the last decade. Sometimes these programs have been offered at the degree level; in other cases they have been packaged as discreet short courses tailor-made for specific clientele. Either way, the objective has been the same: to provide instruction for a fee with a large skills component using pedagogies that are closer to training than conventional university pedagogies. Public interest in these types of programs, be they in law, business or information technology studies, has been shaped by the perception that skills in these areas will enhance chances of employability.

Universities compete in their offerings of these types of programs. Even though the academic justification for program differentiation does not feature in the discourse on these programs, they have on the surface, at least, increased *programs differentiation*. However, as we have argued earlier in this study, the vocational drift inherent in these programs could also be having the opposite effect: blurring the binary divide between universities and training institutions such as polytechnics. In this way, they could be reducing *institutional differentiation*. In the context of differentiation, therefore, the programs are analytically ambiguous, though on the whole, they have arguably increased program differentiation.

National Policy

A major finding of this study is that government policy documents are beginning to articulate the need for differentiated tertiary and higher education systems. In some cases, the policy is prompted by political considerations. In other cases, it is informed by developmental positions, such as the World Bank (1994; 2000) argument that Africa requires a diversified workforce in order to respond effectively to the continent's development priorities and challenges. Regardless of the underlying motive, higher education differentiation as a policy is evident in most of the countries covered in this study, notably South Africa, Mozambique, Tanzania, Rwanda, Nigeria, and to some extent in the Francophone countries. A summary of Mozambique's policy approach to differentiation is provided in Box 4.

However, two shortcomings are often associated with these policies. The first is the tendency to upgrade polytechnics into universities, a trend that is evident in Uganda, Kenya, Ghana and Nigeria. The danger here lies, not in upgrading the polytechnics into universities, but in doing so without catering for their replacement and the instructional gap they leave behind. This danger might not be evident now. However, it will increase as the polytechnics acquire the autonomy commensurate with their university status, thereby obtaining the freedom to "deviate" from technical training into programs currently catered for by the "non-technical universities." In this case, a gap in skills provision might emerge. Avoiding this possibility will require well-designed regulatory mechanisms of the kind that South Africa university communities are unhappy about.

Box 4: Explicit Differentiation Policy in Mozambique

One of the strategic goals of the Mozambican government, as stated in its *Strategic Plan of Higher Education in Mozambique 2000–2010*, is to diversify institutions, training opportunities and forms of delivery. To achieve these objectives, an explicit guiding principle is to encourage "diversity and flexibility of institutions, courses, curricula and methods of delivery, to ensure responsiveness to changing social, cultural and economic demands." Specifically, the *Strategic Plan* outlines two goals regarding differentiation: (1) to develop a diversified system of public and private higher education institutions; and (2) to encourage innovation and diversity in higher education training programs. To achieve this, the following strategic actions are being undertaken:

- a) Encourage the development of new public and private institutions within a general framework for the higher education sub-system to be established, privileging links between them and the existing technical-professional schools;
- b) Consolidate existing institutions, taking into account their experience, resources and economies of scale;
- c) Conduct an inventory of opportunities, resources, and use or re-conversion of the existing infrastructures to implant and develop tertiary institutions or their branches in the provinces, without jeopardizing the activities of the other educational levels;
- d) Promote a greater variety in the length of courses through introduction of courses with diploma, bachelor and master levels; and
- e) Increase flexibility in higher education programs in order to facilitate student choices and enable them to adjust their studies to their aspirations in terms of career and job opportunities.

Source: Ministry of Higher Education, Science and Technology (2000).

The second risk is the policy ambiguity surrounding the establishment of private universities. Though these institutions have mushroomed in the past decade, there is a sense in which they are still regarded in policy circles as the “illegitimate brothers” of their public universities counterparts. They are, therefore, made “welcome” in the context of increasing access, but they are not fully integrated in higher education planning and policy discussions. Notably, few national policies, if any, have defined the role of private universities in medium and long-term system differentiation.

Internal Institutional Reforms as Possible Drivers

A number of studies on African higher education, particularly those sponsored by the Partnership for Higher Education in Africa, have documented reforms that have been taking place in African universities in the last ten years. These reforms are still going on and a number of them have implications on program differentiation. These include: rapid expansion in the number of universities—both private and public; reforms in university governance, particularly decentralization of governance; introduction of income-generating activities, including introduction of “market driven” courses mentioned earlier, and so forth.

One reform that bears emphasis here is the tendency to create university schools or colleges out of faculties or departments. One motive for this is to provide institutional “space” for the schools to introduce more programs, especially in new knowledge areas. This trend is clearly centred on differentiation. Whether it will succeed in driving further differentiation is, however, yet to be seen.

Industry as a Probable Driver

In theory, industry ought to be a driver of differentiation. But this did not come out in this study. To the extent that industry has a stake in higher education, it is in its demand for skills rather than what it refers to, sometimes contemptuously, as merely theoretical knowledge. Tunisia offers a useful example of how employer demand can be identified and addressed (see Box 5).

In Malawi, tracer studies and rising graduate unemployment and underemployment (especially in the fields of languages and other humanities) indicate a general lack of relevance of the University of Malawi (UNIMA) curricula for the world of work (Chimombo, 2003: 418). In particular, graduates of UNIMA participating in the tracer studies felt that vocational studies were too academic in nature, and did not pay sufficient attention to the demands of the professions. Part of the problem reportedly lies in the weak linkages between industry and the university.

In this context, industry is beginning to take more interest in building a better working relationship with higher education. Most often, this takes the form of (a) employer representation in governing councils; (b) industry funding through student scholarships; (c) R & D collaboration; (d) provision of student internships; and (e) joint patenting of innovations. As the industries become more sophisticated, so will their demand for more differentiated skills. Industry is thus a potential driver of higher education differentiation. It is worth noting here that industry could also become an inhibitor of differentiation if it begins to demand liberal arts training as an alternative to the current disciplinary focused training.

Box 5: The Higher Institutes for Technology Studies in Tunisia

In Tunisia, a labor market survey in 1990 demonstrated a severe lack of middle managers, which was estimated at 70 percent of the job market. At the same time, two studies analyzed the types of skills that employers were looking for and concluded that the current educational system was less relevant than it could be. This led to a 1992 government decision to create a new type of tertiary institution—the Higher Institute for Technology Studies—which began operation in 1995. The mission of the Institutes was three-fold: to train middle managers, to offer professional development and continuing education for people already in the work force, and to provide technical support services to the economic sectors. The Institutes were set up under the Ministry of Higher Education as non-university institutions. They were designed to have strong ties with the economic sectors through their governance arrangements (employers participate on governing boards, scientific councils and advisory committees), through teaching (30 percent of classes are taught by business professionals), and through work placements. Notably, a new type of instructor, the technologist-teacher with business understanding, has been crafted to teach in these Institutes. Courses last for two and a half years. Coursework includes integrated learning, practical problem-solving, two work placements, and a final-year applied project. After ten years, Tunisia has 22 Institutes with 30,000 students. A recent study concluded that the student success rate is 88 percent and that 82 percent of graduates find jobs within six months.

Source: Mazeran (2007).

This is not happening yet, but there are signs that it could be at the horizon (Ng'ethe, Galabawa, and Muwanga 2006).

Regional Policies as Drivers

Regional higher education policy does not feature in this study for the obvious reason that it has remains at an early stage of development. To the extent that regional higher thinking exists, it is dominated by the issue of student mobility. Yet it is important to remember that the emerging regional economic blocs, if they succeed, will sooner or later demand collective thinking on human development, if only in the context of common markets and the resulting free movement of labor. What will this mean for higher education? Will it, for example, mean that each region will be required to identify education and skills gaps and plan how best to fill the gaps at a regional level? It is a safe bet that the regional thinking would be a driver for rationalization of higher education in the region, a process that would lead to more regional differentiation than is the case at the moment. In this context, cross-border provision would not be driven primarily by local access concerns, but also by availability of a different higher education product across the border that is also marketable within the region.

Inhibitors of Differentiation

Global Trends vs. Resource Constraints

A perpetual observation by higher education administrators, especially deans and departmental chairs, is that they are not only fully aware of global trends in higher education, a key feature of which is more and more differentiation as new knowledge domains emerge,

but they are also frustrated that they are unable to introduce new areas of study and specialization because of resource constraints. Most departments, for example, operate at less than optimal staff capacity and, as we have observed in this study, research, the key generator of new knowledge areas, is barely funded, except by donors. In this context, the move by some universities to increase program differentiation by creating schools is unlikely to bear fruit in the absence of more resources.

The Problem of Isomorphism

This study indicates that one of the inhibitors of differentiation is institutional isomorphism, or the gradual adoption of a single set of institutional characteristics within a higher education system. As indicated in Chapter One, isomorphism takes two forms: mimetic (strategic seeking of status) and normative (seeking of quality and professionalism). A certain amount of isomorphism might not be a bad thing as new institutions seek mentoring from older and more experienced ones. However, isomorphism will undermine differentiation if the new institutions lose sight of their separate missions and distinct mandates and engage in unimaginative copying.

This study finds that isomorphism is evident in some countries where newer universities are fashioning themselves after older ones, or where newer polytechnics are simply copying the programs of older ones. Isomorphism is likely to be worse in poorly regulated higher education systems because the individual institutions have the liberty by default to stray from their original mandates—assuming that they were established with different mandates from those of older institutions.

Undifferentiated Governance and Funding Structures

One of the findings of this study is that higher education governance structures tend to be similar for universities and similar for polytechnics. While the effects of this on program differentiation are not obvious, they are fairly predictable with regard to institutional differentiation. That is, similar governance structures are likely to result in institutions that behave the same way. Indeed institutions sometimes conspire to behave the same way with regard to some contentious issues, such as staff union matters. The problem is reinforced by common funding structures, especially with regard to public institutions, all of which are highly dependent on scarce public resources, which they cannot afford to “alienate” by “behaving creatively.”

Absence of Shape and Size Debates

A notable absence from most of the countries covered in this study is a higher education “size and shape” debate of the kind that has been taking place in South Africa. The South African higher education community might not have been fully happy with the outcome of the debate, but it did lead to resourceful thinking on what ought to be the objectives of higher education both in redressing historical wrongs and in achieving stated national development objectives.

To the extent that this debate is taking place in other countries, it is still confined to a few policy experts and higher education specialists, the main forum being the occasional

workshop. Part of the problem is that higher education is insufficiently researched, and the research that does exist is often not disseminated beyond academic audiences. This means the corpus of knowledge has not reached the critical mass necessary to fuel popular discourse. Because of this, the role and benefits of higher education in producing both scientific knowledge and practical skills remains poorly understood by the general public.

The need for a “shape and size” debate is more compelling when one takes into account the demographics summarised at the beginning of each of the country reports and compares these with university enrollments. Quite clearly, the enrollment figures are minuscule compared to the share of the population who ought to be in university. The political solution of “uncontrolled” expansion of higher education might be popular, but is likely to fail the development test of producing differentiated knowledge and skills. The size and shape debate would help establish the various dimensions and priorities for higher education, including its political and developmental parameters.

Drivers and Inhibitors of Articulation

An overall finding of this study is that we know more about differentiation than we do about articulation. Table 6 compares some of the more common indicators of system articulation across the countries studied. Based on the limited information available, it is possible to glean from the research a few observations on drivers and inhibitors of articulation.

Table 6. Summary of Articulation Indicators for Selected Tertiary Education Systems

	Unified System Oversight Body	Recognition of Qualifications Structure	Admissions Criteria for Tertiary Institutions	Student Mobility/ Transferability of Credits	Staff Mobility	Collaboration; Partnerships in National Tertiary System
Cameroon	No	Yes	Similar	Yes	Yes	Rare
Ghana	Yes	No	Similar	No	No	Rare; A*
Kenya	No	No	Dissimilar	No	Limited	Rare
Malawi	No	No	Dissimilar	Yes	No	Rare
Mozambique	No	No ¹	Similar	In progress	Yes	Rare
Nigeria	No	No	Dissimilar	No	Limited	Rare; A*
Rwanda	No	No	Dissimilar	Limited	No	Rare
Senegal	No	Yes	Similar	Yes	Yes	Rare
South Africa	Yes	Yes	Similar	Yes	Yes	Occasional
Tanzania	No	No	Dissimilar	No	No	Rare
Uganda	Yes	Limited	Similar	Limited	Limited	Rare
Zambia	No	No	Dissimilar	No	No	Rare; A*

*A = required affiliation of private colleges with public universities.

¹planned for 2008.

National Policies as Drivers versus Institutional Practices

A quick look at national higher education policies suggests that the issue of articulation has not received as much attention as that of differentiation. Perhaps this is a reflection of the inherent tension between articulation and differentiation, an issue we discuss elsewhere in this report. Within this tension, most of the countries covered in this study are tackling the issue of differentiation, but few are addressing articulation. Even though almost all countries acknowledge the need for articulation as a means of producing a non-fragmented and more productive labor force, the practices indicate otherwise. Thus, even in those cases where formal articulation routes exist—and these are few—little evidence of articulation can be found. One exception is Senegal (see Box 6). We suspect the reason for this is that engendering articulation is a great deal more complicated because it involves multiple institutional actors and multiple sub-sets of the educational system.

Internal Structures/Governance of Institutions

The internal structures of institutions have tended to inhibit articulation amongst and between institutional types. The universities are under no obligation to articulate with polytechnics. This is because of their legal autonomy and the way they jealously safeguard that autonomy. Consequently, they tend to view articulation—even amongst themselves—as a managerial nuisance that is best avoided.

Industry and the Market as Possible Drivers

This study turned up no evidence that the market, in general, or industry in particular, is driving articulation. On the contrary, industry tends to inhibit articulation with its

Box 6: System Articulation in Senegal

The first two years of university studies in Senegal are *multidisciplinary* and oriented towards the acquisition of basic knowledge in either the sciences or the humanities. At the end of two years, successful students may opt to continue for one additional year to obtain a bachelor's degree or take a competitive selection examination to enter an Advanced Professional Engineering School (a *Grande Ecole*) for three years in order to qualify as an engineer. Alternatively, holders of the secondary level *baccalaureate* certificate may enter an advanced college of technology for two years' study leading to the award of a University Diploma in Technology or DUT. The DUT certificate is in many respects similar to the Higher National Diploma (HND) qualification offered in Anglophone African countries. Like the HND, the DUT is a vocationally oriented qualification for the world of work in essentially the production, technology and service sectors. But in contrast to the situation in English-speaking Africa, the DUT is a university diploma and the colleges that offer this qualification are affiliate units or institutes of a parent university. Holders of the DUT may, on passing a very rigorous entrance examination, be admitted to a *Grande Ecole* or the Advanced Polytechnic School in Dakar or Thiés to study for a higher qualification or degree in the same discipline. Thus, in spite of the diversity in course offerings, qualifications and admission requirements, articulation within the higher education system in Senegal has clearly defined pathways for academic progression and mobility of students. Recognition of prior learning and formalised credit transfers across institutions are two of the unique and important articulation mechanisms of the Senegalese higher education system.

tendency to partner with specific institutions. A scholarship is thus awarded to take up studies in a particular institution and for a specific program. The same is true of research and development where the details of the partnership are sometimes a closely guarded secret. The market, on the other hand, tends to be indifferent to articulation so long as it obtains the skills that it needs.

Summary

Though elements of horizontal differentiation are beginning to emerge among universities, this is less true with regard to articulation. Considerable differentiation is evident between the university systems and the polytechnics in all the countries, which reflects the prevailing binary higher education system. However, emerging tendencies towards academic drift among polytechnics and vocational drift among universities are observed. Articulation between the universities and the polytechnics is incipient but far from fully evolved. The polytechnic sub-systems are largely undifferentiated, and the extent to which they articulate among themselves is unclear.

Differentiation and Articulation: Policies and Practices from Other Regions

Are there any lessons in differentiation and articulation that the higher education systems covered in this study can learn from other regions of the world? Glimpses into the United Kingdom and French higher education systems (countries with strong educational and colonial ties to Africa), the experiences of trend-setting nations such as Chile, Korea, and Singapore, together with the recent Bologna Process, may provide useful insights.

Historical Reference Points: United Kingdom and France

After operating a binary system for decades, the UK government took the bold decision in 1992 to convert all of its polytechnics into universities. At the time of this policy change, British polytechnics were well-resourced institutions of higher learning that awarded HNDs, centrally certified degrees and, in some cases, postgraduate qualifications. Yet, the polytechnics suffered from a public perception of inferiority. But since their conversion to university status, these new or modern universities (as the former polytechnics are now called) have carved a niche for themselves in the UK labor market, by working closely with industry and commerce. As a result, they have gained in popularity and prestige. They still offer HNDs and career-focused degrees, but as autonomous university institutions they can guarantee a seamless academic progression route to the highest level possible for holders of vocational qualifications.

The higher education system in France is organized essentially in two sectors, namely the university sector and the non-university sector. Contrary to the higher education system in Anglophone Africa, it is the non-university sector that is more prestigious because

its highly competitive admissions and small enrollments make it elite. The university system is composed exclusively of the public universities and has the largest student population. There are no private universities in France. On the other hand, the non-university sector includes well-regarded institutions of higher learning in engineering, business and management (the *Grandes Ecoles*) which may be either public or private. Admission to the *Grandes Ecoles* is very competitive and includes a rigorous selection examination. In contrast, the secondary school leaving certificate (the *baccalaureate*) is the only qualification required by law for admission to the university.

It is important to note that the French equivalent of the Anglophone polytechnic-type institutions, the *Instituts Universitaire de Technologie* (IUT), belong to the university system. The IUTs are integral units of the universities and therefore have the same status. The public higher education system is rigidly controlled by the ministry of education, leaving no room for the type of course duplication and unhealthy rivalry characteristic of the systems in Anglophone Africa. Public universities deliver national qualifications on behalf of the State, and members of the teaching staff are assessed for promotion on a national basis. Articulation and mobility for both staff and students is therefore extremely fluid. The higher education system in Francophone Africa remains a structural copy of the French system.

Chile³

Market liberalization and a series of regional trade agreements have given exports a central role in the Chilean economy. This gain has forced the labor force to confront major challenges in improving its productivity and quality. Although significant progress has been made in the education sector (for example, 12 years of education is compulsory), opinions differ on whether the country's education system is now good enough to provide for long-term needs and contribute to a sustainable national development effort. The system's potential is limited by a shortage of educational institutions with the capabilities to actually offset social and personal disparities among students that derive from inequities in the system itself. This lack of differentiated instructional capacities constrains the country's efforts to continue upgrading labor force productivity and national competitiveness.

Chile's substantial economic gains, however, have been underpinned in part by a far-reaching reform of the higher education sector that included a major diversification of educational institutions. Private tertiary institutions were authorised in 1990 and tertiary education was sub-divided into three levels: universities, professional institutes, and technical training centres. System expansion led to a doubling of enrollments that brought in a more diverse and less well-prepared pool of students. Concerned that the numbers of higher technicians from the technical training centres were not keeping up with the numbers of engineers and the proportions were becoming unbalanced, the Ministry of Education worked to make the technician sub-sector more attractive by improving course quality, improving pathways of articulation among institutions, and expanding the

3. This section is condensed from Mazeran (2007), pp. 42–52.

student grant program. It was rewarded by a 25 percent increase in technician enrollments between 2000 and 2004.

What specific interventions led to this achievement? One was the “Chile Qualified” program launched by the Ministries of Finance, Education and Labor to create a lifelong learning system for workers and citizens. This included a voluntary quality assurance program for technical education, continuing education opportunities for technical instructors, better definition of technical training streams to allow for improved articulation among streams and accreditation of prior learning, the creation of learning networks among educational institutions, employers and professional associations, and an expansion of work-based learning programs. A second was a competitive grants program that encouraged the overhaul of course content, curricula structure and pedagogy through the provision of financial awards for related equipment and facilities. A third was the introduction of the concept of educational benchmarking with the aim of comparing strategically important courses with world standards of quality. A fourth was the extension of the national student loans and grants program to include shorter term technology training. Finally, certain tax exemptions were provided to workers who sought to update their skills through continuing education.

Present challenges focus on institutionalizing quality assurance mechanisms for technical education, improving articulation among all educational streams, creating a forum in which key stakeholders can better coordinate efforts around their respective interests, establishing a public information system to enable students to make better career choices, and developing a national qualifications framework for vocational skills.

Korea

Differentiation and articulation have been constant themes in Korea’s long-term campaign to develop professional education capacities in support of its export industries. In response to a growing labor demand for technicians, the government set up in 1963 a series of five-year professional institutes that offered three-year vocational programs at the secondary level and two-year vocational programs at the tertiary level. At the top of the educational pyramid, the Korea Advanced Institute was created in 1971 to provide high quality MSc and PhD programs. After 1976 a number of the five-year professional institutes were converted into two-year vocational junior colleges as the market demand for higher skill levels became stronger. This was followed in 1979 by a broader two-year junior college system of both public and private colleges. Links between colleges and industry were fostered through research cooperation, field practice, staff exchanges for lectures and consulting, and contracted training activities. In 1995, the two-year college diploma was replaced by a two-year associate B.A. degree in order to increase attractiveness and emphasize articulation with the four-year degree programs. This junior college system was a major contributor to the massification of tertiary education in Korea. Today, it enrolls 853,000 students (26 percent of tertiary enrollments) in 158 junior colleges, some 90 percent of which are privately operated (Mazeran 2007:56).

Other complementary initiatives reinforced these skills development undertakings (Sonu 2007). The Korea Science and Engineering Foundation was set up in 1977 to fund university research and award long-term research fellowships. Various Government

Research Institutes were established in the 1980s with mandates to focus on strategic economic areas such as ship-building, electronics, and automotives (Chung 2007). Many of these were successful in attracting diaspora talent back to Korea. Engineering Research Centres were created on university campuses in 1990. At the same time, research and development were promoted through a competitive funding program, tax credits, and customs duty waivers on research equipment.

To a large extent, Korea's economic success has been due to the development of a broad, differentiated and articulated tertiary education system, a strategically oriented R&D program, policy incentives for industry in key export areas, and linkages among higher education, research and development, and industry.

Singapore

Singapore is a small city-state surrounded by very large neighbours. Yet it has generated an economy that belies its size and has achieved this largely on the basis of its human capital formation strategies. Singapore illustrates how it is possible to progressively construct a differentiated and articulated tertiary education system through a sequence of policy initiatives.

First, the country's two pre-existing colonial era universities were merged to form a stronger National University of Singapore in 1980. The next year the Nanyang Technological Institute was established, evolving into a technological university by 1991. It was designed to serve as the human resource cornerstone for an economic growth strategy based on competence in selected new technologies such as medical robotics, microelectronics and optics. During the 1990s a network of ten post-secondary Institutes of Technical Education was established to generate the middle level technical skills to support this effort. This had previously been the role of the nation's five polytechnics, which were re-directed to emphasize continuing education and post-employment professional development programs. Access to tertiary education was expanded by setting up several regional junior colleges that were linked to the national university through student transfer mechanisms. Likewise, strong student performers from the polytechnics were given opportunities to progress into university level studies. At the end of the 1990s, the National University of Singapore initiated a strategic shift to a comprehensive research-intensive university with a strong complement of postgraduate programs. In 2000 the Singapore Management University was opened as a private limited company in partnership with the Wharton School of Business at the University of Pennsylvania in the United States. Part of its mandate is to provide lifelong learning options to working adults. At the same time, teaching pedagogy in the country's tertiary institutions was re-oriented towards problem-based, interdisciplinary learning with a strong practice orientation developed in collaboration with industry. In 2005 the first of three planned regional tertiary-level Institutes of Technical Education was opened. Strikingly, these new Institutes are intended to impart practical technical skills to the *lower* 25 to 30 percent of the secondary school cohort that previously had no access to tertiary education. In 2006 the two national universities were awarded greater institutional autonomy and corporate status, and higher education funding was re-shaped as a more competitive and performance-based process. In 2006 the University of Nevada at Las Vegas was invited to open BSc and Executive Masters programs in

Singapore focusing on hospitality management and hotel administration. In 2007 the University of New South Wales in Australia has been authorized to set up a branch campus in Singapore. In this way, a differentiated yet articulated tertiary education system was progressively assembled over two decades in support of a national goal of economic competitiveness.

The Bologna Process

The Bologna process to establish a European Higher Education Area (EHEA) by 2010 is an evolving example of international cooperation in higher education. With various dimensions of differentiation and articulation, emerging and developing countries can draw lessons from it. Certainly, it would be unwise to transport wholesale the European experience in higher education to Africa. Yet the Bologna Declaration of 1999 contains certain challenges and objectives that transcend geopolitical and economic distinctions.

The Bologna process seeks to achieve “greater compatibility and comparability of the systems of higher education in Europe” by adopting a system of comparable qualifications and a credit transfer system that promotes student mobility. It also seeks a more cooperative approach to the various dimensions in higher education, including curricular development, inter-institutional collaboration and integrated programs of study, training and research (Bologna Declaration 1999). As of May 2005, the number of signatories to the Bologna Declaration has risen to 45 nations, compared with the 29 European Ministers for Higher Education who initialled the original document in 1999. Clearly this is a train that everyone is eager to ride.

The Bologna process recognizes that a common qualifications framework, based on a system of quality assurance, joint standards, mutual reliability and transparency, is a prerequisite for the mobility of students and staff across national boundaries. As Birger Hendriks, an official of the German Ministry of Education recently put it, “quality assurance is a cornerstone of the Bologna process” (Hendriks 2005). Notably, these same dimensions of quality and mutual recognition of qualifications are also necessary to promote internal articulation between the various levels of higher education within national boundaries. In both Ghana and Nigeria, for example, there is a deep suspicion within the universities of the quality of the HND qualification delivered by the polytechnics. The universities frequently cite, though not openly, the generally lower admission grades of polytechnic students and the lower academic qualifications of their instructors as two of the major factors militating against the adoption of a common credit system for polytechnic and university courses.

Quality assurance at all levels of the higher education system in Africa emerges, therefore, as one of the principal requirements for greater articulation within and between the systems examined in this study. In the Eastern Africa region, the three East African Community member-states (Kenya, Uganda and Tanzania) have recently (mid-2006) signed a protocol enabling the regulating Commissions/Councils for Higher Education and the Inter-University Council for East Africa to formally engage each other with a view to developing collaborative regional approaches to higher education. Among the key issues to be harmonised is quality assurance.

Towards Policy Options for Improved Tertiary Education

Perspectives and Interpretations

Higher education has a key role to play in advancing the development priorities of the continent. At a time when efforts to address these priorities are being renewed in the form of the African Union and NEPAD, it is particularly important to review the role and contribution of differentiated non-university higher education institutions and their articulation with the university sector.

Within increasingly competitive national and international environments, two opposite trends are evident. One is driven by isomorphic imitative institutional behaviour striving to reach the status of the research university model. The other inclines towards greater institutional differentiation, driven by a variety of contemporary factors. These include new demands from the changing labor market for varied graduate output and a growing social demand for access to higher learning (the so-called 'massification' of higher education), with the consequent influx of non-traditional learners. These pressures have generated the need for a more flexible range of programs and institutional types that spans academic, general vocational and occupation-specific pathways at different qualifications levels.

As a result, institutional *differentiation* has become a feature of many higher education systems. In some cases, institutional differentiation is rigidly manifest in a binary divide that separates university and non-university polytechnic-type institutions. This split derives from long-standing curricular divisions between education and training, between academic and vocational streams, and between high-level knowledge assumed to be appropriate for 'thinkers' and practical-oriented training intended for 'doers.' This structure corresponds to, and helps to reproduce, the broad division of labor and social stratification between the elite and the masses, which in colonial contexts was overlaid by race and gender.

As part of these trends, most African countries offer, as they have done for decades, a differentiated post-secondary education consisting of a mix of colleges, trade schools, vocational centres and technical institutes. At the top of this educational pyramid one finds the polytechnics and universities (Sawyer 2002). The diverse configurations of the higher education sector in Africa reflect various historical influences, as well as the national and global pressures brought to bear on this sector. The emergence of mass higher education, not only in Africa but also across the globe, has swayed governments to introduce policies favouring institutional and program differentiation. In Africa, new types of higher education institutions and differentiated programs have come forward despite an increasingly constrained financial environment.

As part of this differentiation process in educational provision, the traditional divisions between academic education and work-oriented training have increasingly been dissolved by several recent developments. First and foremost, in the new market-oriented higher education environment, public and private institutions are increasingly defining new niche areas, missions and functions in relation to market opportunities. This has resulted in the widespread occurrence of both *academic drift* (that is, the tendency of non-university polytechnic-type institutions to aspire to and offer university-level programs) and *vocational drift* (that is, the tendency of universities to seek new market opportunities by offering job-specific certificate and diploma vocational qualifications). In addition, amidst the proliferation of new organizational forms and the widespread utilization of the new information and communication technologies (for example, virtual, corporate, and distance education universities), it is increasingly difficult to retain a coherent definition of the university. This has generated the notion, as Scott (2000) has put it, of the “post-modern university,” which captures the view that no simple definition of the university suffices in the midst of the emerging multiplicity of ever-differentiating institutional forms. In addition, the demands of the knowledge-driven economy, high-tech innovation and complex social problems have generated new modes of inter-disciplinary and trans-disciplinary knowledge production. As a result, the traditional disciplinary-based curricular boundaries have become more obscured, as have the boundaries between basic, applied and strategic research.

Although differentiation has become a key education policy issue and has been strongly advocated in current reform discourses, the concept still lacks clarity. The precise identity, role, appropriate boundary and form of regulation between the different institutional types and the program offerings which underlie these continue in search of consensus. As a result, the epistemological and organizational foundations of university and non-university education remain an under-theorised area in the literature.

In Sub-Saharan Africa, universities articulate poorly with each other. This is perhaps the result of “youthful territoriality.” More importantly, it could be a reflection of the absence of a national policy dialogue regarding the appropriate shape and size of the higher education system. Higher education oversight bodies such as national commissions or councils for higher education should ideally spearhead this national agenda-setting discussion. But these bodies are uniformly young or non-existent. As a result, they are yet to establish their leadership credibility with pre-existing (and sometimes suspicious) tertiary institutions.

In spite of the increasing knowledge that has been recently accumulated about universities in Africa, a dearth of knowledge surrounds the non-university sectors. In addition, considerable lack of clarity characterizes the precise identity and role of university and

non-university institutional types and the articulation linkages and boundaries between them. With the proliferation of public and private institutional types, and the rise of borderless higher education provision, the dividing line between university and non-university types is blurring. As indicated, academic and vocational drift occurred on both sides of the binary divide. Non-universities continue to aspire towards university status, while universities are seizing market opportunities by offering popular job-specific certificates and diplomas. A key issue is how the notions of “university” education and “polytechnic-type” training should be operationalized in the African context.

Regarding *articulation*, greater social demand for higher education and for equity of access has generated an increasing emphasis on the creation of articulation and mobility pathways for students throughout the education and training framework. To this end, a number of countries worldwide have developed integrated national qualifications frameworks (NQF) to facilitate access, mobility and progression within education, training and employment. Central to the construction of an NQF is an integrated approach to education and training among formal institutions and the workplace. This aims to ameliorate traditional tensions between discipline-based learning, which occurs mainly in institutions, and work-based learning, which occurs mainly in the workplace, but includes professional practice. To this end, the qualifications framework defines levels of qualification against which outcomes-based qualifications and standards can be pegged. This seeks to create equivalences upon which credit accumulation and transfer can occur.

Implementation of these progressive intentions is a formidable challenge, if the South African experience is anything to go by. Following extensive debate about qualifications standards and a range of other issues, the South African National Qualifications Framework has just been thoroughly reviewed. A South African government discussion document, in response to the review, noted “with some notable exceptions little progress has been made in enabling learners to transfer their learning credits from one context to the other” (Young 2003). It acknowledges “it is true that all learning is not portable, that unit standards and qualifications are not automatically transferable across career paths, and that moving between one learning context and another requires the adaptation of skills and the integration of new knowledge” (Young 2003). Likewise, recent research (Breier 2003) has approached the progressive claims of recognition of prior learning with greater circumspection, based on a deeper understanding of the contrasting structures of academic and workplace-based ‘practical’ knowledge.

Tension between Differentiation and Quality

This study did not look into the relationship between differentiation and quality assurance. However, from the literature and our own observations of African higher education systems, it is evident that there can be an inherent tension between differentiation and quality. This is because, the more differentiated the system of higher education, the more likely that quality will be affected negatively, unless detailed planning has gone into the process of differentiation. A key plank in this planning is the development of the necessary human resources and physical infrastructure. A second element that could create tension between differentiation and quality is that of quality assurance through regulatory mechanisms. Clearly, the more differentiated a system is, the more competences it will demand from its quality assurance/regulatory agencies. Given that most quality assurance/regulatory agencies

we have observed in this study are still struggling to find their footing,⁴ if they exist at all, a case can be made for matching the rate of differentiation with the rate at which the quality assurance/regulatory agencies acquire the requisite competences.

Tension between Differentiation and Articulation

We note in conclusion that a fundamental conceptual tension is apparent between the purposes and intentions of differentiation and articulation—a key consideration for the purposes of this study. This is not to question the relevance and validity of both differentiation and articulation, but pursuing both simultaneously as policy goals can produce a conceptual tension.

Simply put, the issue is as follows. The primary rationale for differentiation is to provide the range of graduate outputs needed to meet the varied requirements of the contemporary labor market, and at the same time to accommodate an increasingly diverse student population. These goals are achieved by providing a differentiated range of program and qualifications mix at a variety of institutions. Articulation, on the other hand, is an equity-driven principle to facilitate access to “higher” university-type qualifications for students entering the system at “lower” polytechnic-type qualifications. Encouraging articulation, as a normative goal, can thus be seen to be inconsistent with the principle of differentiation. This is because an unmediated emphasis on articulation would obstruct the purpose of differentiation, as the required number and range of graduate outputs at the intermediate and vocational levels would be reduced. In reality, articulation must necessarily remain selective, because only a limited numbers of students are able and motivated to pursue the process. In addition, normatively emphasising articulation runs the risk of widening the reputation gap between academic and vocational elements. Unavoidably, the “higher” qualifications offered at universities will tend to attract higher status.

Towards Tertiary Education Systems

The literature and this study affirm that differentiation and articulation are key features in the definition of any system of education. This is particularly so with the higher education system, as opposed to basic or secondary education because higher education is almost by definition meant to be differentiated education. Compared to the others, it is intended to be specialized. In this regard, one of the painful conclusions of this study is that true higher education systems are yet to fully emerge in the countries covered in this study. What exist now are incomplete systems characterised by almost discreet institutional types. Until the institutions and institutional types are sufficiently differentiated and sufficiently articulate with each other, the national systems will, at best, be classified as fragmented systems. For this reason alone, this study is strategically timely. While limited in its scope, it will hopefully fulfil its aims to inform the ADEA Working Group on Higher Education in its activities,

4. For an in-depth analysis of existing capacities for quality assurance, see: World Bank, 2007, *Higher Education Quality Assurance in Sub-Saharan Africa*, Africa Region Human Development Department, World Bank, Washington, DC.

to add to our knowledge in this area, and to provide a point of departure for future research and analysis. To these ends, we therefore recommend the following:

Points for Policy Consideration

In general, institutional and programmatic differentiation appears to be increasing—driven by both market forces and government policy. But the extent to which articulation is becoming operational appears to be minimal, even though formal channels for articulation between the university and non-university sub-sectors exist. Consequently, differentiation and articulation within African higher education systems remain vital but largely unused policy instruments for enhancing equity and contributing effectively towards national development goals.

1. Participation and access should be encouraged but in a targeted way through both institutional and programmatic differentiation in order to meet development goals. To maximise diversity of offerings, cost effectiveness and access, the binary divide should be *flexibly* maintained through appropriate regulation to control academic and vocational drift. Prospects for effective regulation are dependent on national conditions. In some cases, such as Mozambique and South Africa, strong centralised national policy frameworks are conducive in this regard. In smaller systems, much greater institutional autonomy is evident, creating bigger challenges for regulation.
2. The dominance of universities (other than in Francophone countries) should be reversed. Expansion does not always imply diversity and many new universities, rather than non-university institutions, are being established. This implies confronting popular aspirations for universities as institutions of first choice, and the persistent attribution of low status to non-university institutions. This could be advanced through: (a) publicly clarifying complementary roles and identities; (b) encouraging and rewarding collaboration; and (c) creating unified supervision and stakeholder bodies.
3. Comprehensive hybrids and combinations of residential and open learning should be developed, especially to provide access to rural areas. This is already beginning to happen. Quality must be maintained in the process of differentiation despite ongoing fiscal constraints in most African countries.
4. Given the problems of articulation and the absence of any meaningful policy dialogue between the two institution-types, the creation of parallel universities with distinct mandates within the higher education system may be the option of the future, as is already happening in South Africa and indeed happened in the United Kingdom more than ten years ago. This policy has also been adopted in Kenya. The policy, however, is controversial in that it could leave a “middle level skills vacuum” if the new technical universities fail to cover this level of training. If the polytechnics are upgraded to technical universities offering “skills degrees” and training programs to the highest level possible, the traditional universities will then concentrate on research and the awarding of predominantly “knowledge” degrees. Even then, it will still be necessary to have transparent, mutually

recognized, easily understood and comparable national qualifications frameworks that would bridge the two systems. This will not only enhance the prospects of articulation within the entire higher education system, particularly with respect to the provision of life-long and continuing professional education opportunities, but also underscore the notion of complementarity inherent in the concept of knowledge and skills. At the national levels, agencies charged with promoting quality standards and the accreditation of higher education programs should strive to establish a mutually acceptable and easily readable credit transfer system to improve articulation within the entire higher education sector. This they can do by specifying minimum credit requirements for the different levels, by developing generic descriptors, and by crafting instruments for measuring and classifying learning outcomes and competences within national qualifications frameworks. The imperatives of articulation across institutions and qualification levels require an overarching national, regional and eventually international framework. This does not, however, imply the “uniformization” of courses, but rather the creation of convergence in the appreciation of achievement levels.

5. The identity of non-university institutions should be made more distinct. One possible suggestion for strengthening non-university institutions and differentiating them from universities is to customize their admission requirements on a distinct curriculum at the secondary school level that more adequately prepares potential students for vocational training in terms of acquisition of practical pre-career skills. In other words, the curriculum for secondary school students aiming for traditional first degree programs of study should not be the same for those who are better inclined for the more practically-oriented, career-focused education in non-university tertiary institutions. This horizontal differentiation at the secondary school level should not prevent the mobility of students between universities and non-universities, provided the entire educational system is well articulated.
6. The image and reputation of non-university institutions should be enhanced by improving the quality of their training and through effective collaboration with industry in the design of their training packages and the mounting of vigorous campaigns of sensitisation regarding their important role in national development. This will not be an easy task. Contrary to what the polytechnics in Anglophone West Africa would want the public to believe, the HND holder is not appreciated as a graduate with practical skills superior to those of his university counterpart. The polytechnic graduate suffers from lower status.
7. Evidence from this study appears to support the view that articulation between the two institutional types is smoothest in a unitary higher education system with a common supervising authority and with the university at the top of the educational ladder. However, it is doubtful if non-university institutions, particularly the polytechnics, would accept a subordinate status to the universities, after all these years as autonomous higher education institutions.
8. Formal articulation channels must be created and actual articulation encouraged within which emphasis on differentiation and diversity should be retained.

9. Collaboration between universities and non-university institutions must be asked for and rewarded.
10. Linkages between higher education and industry should be strengthened to improve quality and relevance.
11. The private higher education sector should be encouraged to provide complementary systemic institutional and programmatic differentiation. However, its quality and relevance must be assured through appropriate regulation.
12. Debate on the role of higher education in a developmental context should be encouraged. Towards this end, more detailed research on the issues raised should be mounted as a matter of urgency. In particular, program differentiation should be mapped in greater detail. In addition, research on articulation should be given even more attention, given that we know less about articulation than we know about differentiation.

In this regard, the Association of African Universities (AAU) is well placed to initiate a policy dialogue between the universities and regional associations of polytechnics and other non-university tertiary institutions. These representative bodies include the Conference of Polytechnic Principals in Ghana, the COHEADS (Rectors of Polytechnics) of Nigeria, the National Board for Technical Education of Nigeria, and the Commonwealth Association of Polytechnics in Africa (CAPA). Increasingly, non-university institutions are playing important roles in the economic development of their countries, and in this they are beginning to follow the Asia pattern. Their contributions to overall human capital formation may be more beneficial if these are channelled and gently steered to fill the human resource development gaps in the university system. The cost of inaction on this front will be costly duplication of courses and training programs and unnecessary rivalry with the universities.

Finally, it must be recognized that universities and non-university institutions share the same ultimate goal of contributing to national development, either by advancing knowledge and promoting scholarship, creating a knowledge society as it were, or by directly supporting industrial and economic growth through the application of existing knowledge. How effectively these tasks are divided up between the two institution-types should be a parameter that defines the overall efficiency of the higher education system. As the tidal wave of increased enrollments in primary education generated by Education for All campaigns surges through secondary education to crash against the door of tertiary education, the creation of diverse institutions and programs will help to accommodate the rising demand for tertiary access. This is why issues of differentiation and articulation must engage the serious attention of governments and policy makers.

Topics for Future Research

As noted at the outset, this study was cast as a preliminary mapping exercise in the application of two important policy variables for tertiary education—differentiation and articulation—which have been poorly appreciated and rarely understood in Sub-Saharan Africa. The intent was to blaze a trail into this relatively unstudied area of African tertiary

education in the hope that others might follow. Much therefore remains to be done in this area. Among the topics that strike us as priority candidates for follow up investigation are the following:

- Articulation mechanisms linking secondary and tertiary education.
- Complementary understanding of the roles, forms of integration, and articulation of other non-university institutions beyond polytechnics (teacher training colleges, technical institutes, etc.).
- Deeper analysis of francophone articulation mechanisms and their associated management capacity requirements in order to derive lessons learned of relevance to Anglophone universities.
- Comparative assessment of existing module credit and transfer systems in Africa and a few selected non-African experiences to identify good practices for future reference in fostering better system articulation as interest and experimentation with credit transfer begins to expand in Africa.
- Projections of the impact of increased primary enrollments under Education for All on tertiary education over the next twenty years.

Country Case Studies

In the following pages, a short background is provided on relevant aspects of the history, social structure and political economy of each of the countries analyzed. Next, the higher education system in each country is described, with particular emphasis on the extent and nature of non-university polytechnic-type institutions. Where appropriate to the main focus of this study, namely the non-university polytechnic-type institutions, descriptions of the missions of the university and college sub-sectors are included.

The term ‘polytechnic’ is used here to describe all non-university *higher* education institutions. These should be carefully distinguished from non-university *further* education institutions, including colleges, which offer qualifications at intermediate levels that are below higher education. As evident in the chapter, a common problem and challenge is the distinction between higher and further education, which is blurred in different ways in all education systems.

Unlike the Southern Africa and the Eastern Africa regions, the West and Central Africa region covered in this study is unique in that it includes two Francophone countries, namely Cameroon (officially a bilingual country) and Senegal. This introduces a comparative cultural-linguistic and historical dimension to the issues of articulation and differentiation in West Africa that is more pronounced than in East Africa region where Rwanda is becoming bi-lingual and more aligned with systems in neighbouring countries.

Cameroon

Population		16,322,000
Tertiary graduates per 100,000		526
Tertiary gross enrollment ratio		4.2%
Public universities	Number:	6
	Enrollments:	85,790
Private universities	Number:	2
	Enrollments:	na
Public polytechnics and professional institutes	Number:	11
	Enrollments:	na
Private polytechnics and professional institutes	Number:	10
	Enrollments:	na
Public post-secondary colleges	Number:	na
	Enrollments:	na
Private post-secondary colleges	Number:	Na
	Enrollments:	na
Open university	Enrollments:	—
National oversight body		Council of Higher Education and Scientific Research, 1974
National quality assurance agency		National Commission on Private Higher Education, 1991
National qualifications framework		none
Comprehensive legislation		1992/93

Source: Njeuma in Teferra and Altbach (2003); World Bank data; Darvas (2007).

Background

Geographically, Cameroon belongs in Central Africa. However, for the purpose of this study, Cameroon is considered within the study coverage of West and Central Africa. With a surface area of 475,442 square kilometers, the country is about twice the size of Ghana but only half that of Nigeria.

The history of the Cameroonian higher education system has been influenced by the country's colonial history. Initially a German colony, the country was ceded to France and Britain by the League of Nations in 1918 as a protectorate territory, following the defeat of Germany in World War I. France was allocated 80 percent of the territory and Britain 20 percent. As would be expected, the French and the British introduced their own systems of governance and education in the parts of the country they controlled, setting the tone for the concept of bilingualism in independent Cameroon and in the higher education system in particular. The country obtained independence in 1960, and is now a multiparty democracy, although the current President, Paul Biya, is one of Africa's longest serving heads of state.

About 70 percent of the total population of 16 million is engaged in agriculture, 13 percent is employed in industry and commerce, and 17 percent in the other sectors of the economy. Cameroon is an exporter of crude oil, cocoa beans and lumber. The GDP per capita is about US\$1800.

The Higher Education Sector

The higher education sector in Cameroon is differentiated along linguistic lines as well as the nature of programs resulting from the two linguistic cum higher education traditions. In addition, the Francophone sub-sector displays its own differentiation as reflected in three types of tertiary institutions. Therefore, the overall system is richer than a simple binary system. The system displays some articulation among the different institutional types, especially after 1993 when the government introduced a credit transfer system.

The higher education system in Cameroon strongly resembles that of France and shares a lot in common with those of Francophone African countries like Senegal. However, the English influence is strong in a couple of the institutions, notably the University of Buea, which is a predominantly English-speaking university. Three types of tertiary institutions make up the higher education sector. These are the universities, specialized research and career-focused training institutes and schools, and advanced professional schools or *grandes écoles*. The government decree of 1993 regarding the organization of the higher education system in Cameroon allows the universities to develop, within their mission and mandate, specialized institutes or centres for scientific and technological studies, research, professional training or further training. Essentially, the higher education system is divided into two groups: the larger university sector and the smaller, highly selective, non-university sector.

The beginnings of the higher education system date back to 1961 with the establishment of the National Institute for University Studies or *Institut National d'Etudes Universitaires*. This institute later became the Federal University of Cameroon and finally the University of Yaounde in 1967. However, the current higher education landscape is largely

the product of the 1993 government reforms, which created six full-fledged universities out of several smaller university centres originally attached to the University of Yaounde. This re-structuring provided greater access and diversification of courses and educational choices (Njeuma and others 1999). In a sense, the reforms also introduced elements of institutional differentiation into the higher education system.

Linguistic Differentiation

Tertiary institutions in Cameroon pride themselves in the bilingual characteristic of their course offerings and pedagogical activities. Cameroon is the only country in West Africa that officially uses English and French as the languages of instruction at the university level. However, the French language has a wider geographical spread, with more than 80 percent of the country French-speaking. In principle, lectures may be delivered in English or French, depending on the preference of the teacher. Students may write their examinations in French or English. But in most higher education institutions, French is the dominant language of instruction and *the qualification structure is based on the French system*. Bilingualism therefore has important implications for institutional differentiation and articulation in Cameroon since the repartition or spread of course offerings is not uniform across the higher education landscape, the country having opted for a strategy of institutional specialization. This situation imposes a language factor on candidates in their choice of institutions and programs of study at the tertiary level. But it is not clear how this impacts the preparation of students at the pre-tertiary level.

Bilingualism and institutional specialization have the potential of categorising the human capital of the country along language and regional affinities—unless a significant proportion of students among the larger French-speaking population should prefer the Anglo-Saxon type of higher education, training and qualification.

Organization of the Higher Education System

The total enrollment of students in the public higher education system is about 60,000, the majority being university students (Njeuma 2003). The universities in Cameroon consist of specialized schools including, in some cases, a teacher training college and one or more faculties. Of the seven full universities, six are state-owned and one is privately owned and belongs to the Catholic Church. Four of the public universities are bilingual; one is French-speaking and the other is English-speaking. The universities in Cameroon have to a large extent achieved some measure of specialization or rationalization in their course offerings. The University of Buea concentrates on languages, translation and interpretation; the University of Douala on business-related courses and the training of technical teachers; the University of Dschang on agriculture; the University of Ngaoundere on food science and technology; the University of Yaounde I on medicine and engineering; and the University of Yaounde II on the humanities, including law, economics and international relations.

University education is organized in three cycles exactly as in Senegal and other francophone countries. The first cycle ends after three years in a *licence* or a bachelor's degree; a further year's study (at least) beyond the *licence* leads to the award of a *maitrise* or a master's degree or postgraduate diploma in English-speaking universities. These qualifications mark the end of the second cycle. A *doctorate* degree is conferred after four years of study

beyond the *maitrise*. Between the *maitrise* and the *doctorate*, at the end of the first year of the third cycle of university education, French-speaking universities award a *Diplome d'Etudes Approfondies* (DEA). In summary, it takes three years to obtain a bachelor's degree, one to two years for the master's degree, and three to five years for the doctorate degree.

Course offerings in the universities have been undergoing a shift to more professional and job-oriented programs in the fields of computer science, administration, accounting, banking and finance. This shift in emphasis has been driven by the rising level of graduate unemployment and the increasing demand of students for employable and marketplace skills. The university reforms of 1993 also encouraged the institutions to develop programs that are more professional and relevant to job market needs (Ministry of Higher Education 1993).

The basic qualification for admission into all higher education institutions is the *baccalaureate* or the General Certificate of Education (GCE) Advanced Level qualification. The secondary school system in the English-speaking areas of the country consists of five years of study for the General Certificate of Education "Ordinary" level, and an additional two years for the "Advanced" level qualification that is a requirement for university admission. In the French-speaking regions, the *baccalaureate* is the school-leaving certificate that opens the door for university admission. Although a good *baccalaureate* is normally sufficient for entering the first cycle of university education, admission into the professional schools is very competitive. *Applicants*, in addition to having a good *baccalaureate*, must also pass an entrance examination. This rigorous selection process applies also to sub-degree level education and training in technical and vocational programs like the *Brevet de Technicien Supérieur* (BTS).

The BTS is a post-baccalaureate high-level technician qualification that is awarded after two years of study and subject to passing a nationally organized examination. An important requirement for writing this examination is proof of having undergone a period of industrial attachment. The BTS is a narrow-based diploma that is geared towards specific professions in a wide range of disciplines, including mechanical, electrical and civil engineering; accounting and management; computing and computer hardware maintenance; insurance, banking and international marketing; tourism, catering and hotel management.

University Institutes of Technology

A broader-based technology education and training course leading to the award of a *Diplome Universitaire de Technologie* (DUT) can be pursued in an *Institut Universitaire de Technologie* (IUT), translated as University Institute of Technology. The DUT is comparable to the Higher National Diploma (HND) awarded by polytechnics in Anglophone countries in Africa. However, unlike the HND, the DUT is a university diploma that is awarded by an IUT that is part of a university. The DUT, like the BTS, is also a two-year post-baccalaureate program. The DUT program, however, has more theoretical content and covers a broader range of subjects. DUT students are prepared for careers in technology in the production and service sectors of the economy and in applied industrial research. As part of their training, the students are expected to undertake individual or group projects and submit project reports as well as undergo several weeks of practical attachment in industry. It is possible for DUT and BTS graduates to continue further studies in some business and engineering professional schools, but they must first pass a competitive entrance examination.

The IUT de Bandjoun (attached to the University of Dschang) offers both DUT and BTS programs in electrical engineering, telecommunications and network engineering, business information technology, business management, secretarial studies, accounting and commerce. The IUT de Douala, which is part of the University of Douala, specialises in production engineering, industrial information technology, energy and thermodynamics, industrial maintenance, logistics and transport, computer engineering, and management of small and medium enterprises. The national character of the DUT and BTS qualifications is underscored by the fact that the results of the final examinations and the list of successful candidates are declared and published under the signature of the minister responsible for higher education.

Private Tertiary Institutions

Private participation in tertiary education is a recent development. It consists largely of short fee-paying professional courses in business and management studies, journalism, information technology, hotel management, and electronics. Most of the twenty or so private institutions are in essence tutorial colleges that prepare their students to write external examinations organized by the Ministry of Higher Education or by foreign institutions. They are in general poorly endowed, lack qualified full-time teachers, and yet charge fees that are, in some cases, more than ten times those of the public universities. In order to address these concerns, the Ministry of Higher Education has taken a number of measures to regulate the operation of private institutions. These include the obligation on the part of the proprietors to obtain prior approval and authorisation from the ministry, not only to operate as a tertiary institution, but also for the courses and programs of study the institutions intend to offer. These regulations took effect from April 2001.

Supervision and Governance

Although the Minister for Higher Education has oversight responsibility for all the public and private tertiary institutions, the universities exercise considerable autonomy in their academic and teaching activities. The English-speaking University of Buea is headed by a Vice-Chancellor who is both the academic and executive head of the institution, but not chairman of the governing council. In contrast, rectors of the French-speaking universities chair their university councils and academic boards in addition to serving as chief executives of their institutions. The dominance of professors and heads of academic departments in the governance and management structure of the universities amply demonstrate their internal autonomy. Professional schools, on the other hand, are governed by management boards that include representatives from relevant ministries, industries and the private sector. This no doubt is designed to bring workplace experience and knowledge to bear on the teaching and learning activities of these schools.

Funding

State funding of universities has been in decline since the early 1990s (Njeuma 2003). As in Senegal, the higher education system is heavily controlled by the State, to the extent that the Ministry of Education can stop the payment of student fees approved by the university

authorities. According to Njeuma et al (1999), attempts in the past by the University of Buea to institute a fee of US\$33 per student for infrastructure development were halted by the government (perhaps in anticipation of resistance by students), although there was general understanding and agreement among parents on the need to charge this fee. Public higher education institutions can charge only fees approved by government. Apart from the student registration fee (which is only about 10 percent of the fees charged by some private institutions), no tuition fees are charged. Tuition fees are therefore not a discriminating or inhibiting factor in the choice of programs of study offered by public higher education institutions.

Although student registration fees have gone up considerably in the last five years and now account for about 30 percent of the recurrent expenditure of some universities, the higher education system continues to grapple with the problems of inadequate funding, which include shortage of physical infrastructure and poor academic facilities. However, because polytechnic-type institutions like the *universities of technology are part of the university structure*, the kind of skewed funding in favor of the universities (and to the disadvantage of the polytechnics) observed in Anglophone West Africa does not appear to be a matter of concern in Cameroon.

Ghana

Population		22,113,000
Tertiary graduates per 100,000		446
Tertiary gross enrollment ratio		3.5%
Public universities	Number:	7
	Enrollments:	63,576
Private universities	Number:	28
	Enrollments:	8,000
Public polytechnics and professional institutes	Number:	12
	Enrollments:	24,353
Private polytechnics and professional institutes	Number:	0
	Enrollments:	
Public post-secondary colleges	Number:	NA
	Enrollments:	
Private post-secondary colleges	Number:	NA
	Enrollments:	
Open university	Enrollments:	0
National oversight body	1993	National Council for Tertiary Education
National quality assurance agency	1993	National Accreditation Board
National qualifications framework		
Comprehensive legislation	1991	
	1993	Polytechnic Law (PNDCL 321)

Source: World Bank data; Darvas (2007).

Background

Ghana was the first colonised country in sub-Saharan Africa to gain independence from Britain in 1957. Under its first President, Dr. Kwame Nkrumah, the country made significant strides in infrastructure development and education at all levels until a coup d'état toppled his regime in 1966. After a long period of political instability and military rule, the country returned to constitutional democracy in 1992. Since then, multiparty elections have been held every four years, resulting in a peaceful transition from one ruling party to another in 2000.

The total area of the country is 239,460 square kilometers. Compared with the countries considered in this study, Ghana is only slightly larger than Senegal, is half the size of Cameroon and only one-quarter the size of Nigeria. The 2002 population census puts the total population at about 21 million, with a life expectancy of about 56 years. The population growth rate is 2.7 percent and 41.3 percent of the population is under 15 years. The main exports are cocoa beans, gold and timber.

The economy is dominated by the agricultural sector, which employs about 60 percent of the labor force and contributes about 40 percent to the Gross Domestic Product (GDP). The contribution of the services sector is about 32 percent, followed by industry at about 29 percent (ISSER 1999). The GDP growth rate has ranged between 4.5 and 5.7 percent for the past decade, but has not been high enough to meet the expectations of the Government's Poverty Reduction Strategy and national economic development plans, which aim at an annual growth rate of 7–8 percent. The GDP per capita is about US\$2200, but the per capita national income is only US\$450.

The educational reforms of 1987 introduced a 6-3-3-4-school system, comprising six years of primary, three years each of junior and senior secondary, and four years of university education. The reforms sought to diversify the secondary school curriculum to provide for not only academic instruction but also cultural, vocational and technical subjects. The reforms also effectively reduced the length of pre-tertiary education from 17 to 12 years. In Ghana, basic education covers the first nine years of education up to junior secondary school level and is compulsory and (in theory) free, as espoused in the national free, compulsory and universal basic education (FCUBE) policy. In practice, however, the notion of "free" is understood to mean non-payment of tuition fees, and parents are obliged in most cases to provide for the educational needs of their children. According to the Ghana Statistical Service (2002), 42.1 percent of the adult population of 18 years or more are illiterate. Out of a population of about 4.7 million in school (3 years and older), about 2.5 million are in primary school. However, 23.3 percent of the children of school going age (6–24 year group) were out of school in the year 2000.

The government has recently proposed amendments to the current education system, following the Report of the Education Reform Review Committee, on the grounds that the current system suffers from several weaknesses and that the system "has failed to meet expectations in terms of its coverage, quality, equitableness and economic utility" (Ministry of Education, Youth and Sports 2004). According to the *Government White Paper* on the Report, the senior secondary school duration is to be extended by one year to four years by 2007 and renamed Senior High School with differentiated streams in general, vocational, technical, and agricultural education. According to available statistics, only 40 percent of junior secondary school graduates make the transition to the first year of senior

secondary school, and only about the same percentage of senior secondary school graduates are able to find places in the higher education institutions. The educational pressures are therefore not only on enrollments but also on survival and attrition rates from one level to the other. In order to respond to these pressures, the government has established a National Council for Technical and Vocational Education and Training to implement a national post-basic Technical and Vocational Education and Training (TVET) system, and to sensitise the public on the government's "new vision" for TVET in the country. The government has also decided to "resource the polytechnics to enable them to offer degree programs" (Ministry of Education, Youth and Sports 2004).

The Higher Education Sector

For the past fifteen years, the tertiary education system in Ghana has been binary in character. Before then, polytechnics were regarded as pre-tertiary institutions. The institutions in the respective university and polytechnic sub-sectors display little differentiation among themselves. However, the system as a whole evidences some differentiation between the university sub-sector and the polytechnic sub-sector, though some aspects, such as admission to the Higher National Diploma in polytechnics and admission for degree programs in universities, are similar. Articulation between universities and polytechnics is generally low.

The higher education system that Ghana inherited at independence was typical of what Britain bequeathed to all its former colonies, with its emphasis on the humanities and a clear bias for training natives to take up administrative positions in the civil service. This was more or less the character of the first university institution, the University College of the Gold Coast that was established by the British in 1948. Technological and professional teacher education at the tertiary level only really took off in 1961 with the upgrading of the Kumasi College of Technology to university status as the Kwame Nkrumah University of Science and Technology and the establishment of the University College of Cape Coast (now the University of Cape Coast) in 1962. These developments in the higher education sector were driven in part by the Education Act of 1961, which had a profound effect on the entire education system at the time.

The higher education system in Ghana is defined to include all post-senior secondary school institutions of learning. At the moment, however, only the universities, university colleges, institutes of professional studies and the polytechnics constitute the tertiary education sub-sector. Teacher training colleges are not yet considered as tertiary, although they are in reality post-secondary institutions. The process of upgrading the teacher training colleges to tertiary-level diploma-awarding colleges of education has only just begun. For the moment, therefore, the higher education system in Ghana is binary, consisting of university and non-university tertiary institutions, which do not include teacher-training colleges.

Until 1992 when the government announced major reforms to the tertiary education system, higher education in Ghana was synonymous with university education. The polytechnics operated at the pre-tertiary level, offering mainly technician level qualifications in engineering and related disciplines as well as certificates in business education. The higher education system in its current binary configuration is thus a decade-and-a-half old. Perhaps this is one reason why the universities are regarded as the more prestigious tertiary education institutions—to the detriment of the polytechnics.

Total enrollment in the public universities in 2004 stood at 63,576, compared with 24,353 for the polytechnics and only about 8,000 for all the 28 accredited private tertiary institutions (Effah 2004). Available statistics show that out of the total tertiary enrollment of about 95,000 students, only about 38 percent study sciences and engineering. The science and technology to business and humanities enrollment ratio works out to 34:66 for the public universities and 41:59 for the polytechnics in the 2003/2004 academic year. These ratios are in sharp contrast to the government policy of achieving a science and technology enrollment of 60 percent at the tertiary level. Given the high capital outlay for technology-oriented programs, it is not surprising that none of the private universities offers courses in engineering or medicine. The high concentration of students in information technology and business-related courses appears to be a reflection of the increasing demand by students for career-oriented and job-specific training at the tertiary level.

Universities

Ghana currently has seven public universities (three of them having attained full university status only in 2004) and nine private university colleges, not counting the 19 other private theological and tutorial colleges that have satisfied the accreditation requirements to operate as tertiary-level institutions. University education in Ghana dates back to 1948 when the premier public university, the University of Ghana, located in the capital city of Accra, was established as the University College of the Gold Coast and affiliated to the University of London. The development of private universities, or more appropriately *privately-controlled* universities, is a recent phenomenon. Regulated private participation in tertiary education effectively began in 1993 with the promulgation of the Law (PNDCL 317) that established the National Accreditation Board (NAB). The Board is the independent government agency for quality assurance in tertiary education. Specifically, the Board is responsible for the accreditation of both public and private institutions with regard to the requirements for their proper operation and the maintenance of acceptable levels of academic or professional standards in their programs of study and the determination of the equivalences of diplomas and other qualifications, whether Ghanaian or foreign. The NAB has been instrumental in the granting of Presidential Charter to the three new public universities, which in effect allows them to award their own certificates, diplomas and degrees. These institutions are the University of Education, Winneba (formerly affiliated to the University of Cape Coast), the Ghana Institute of Management and Public Administration and its Greenhill College, and the University of Mines and Technology, Tarkwa, which for a long time had been the School of Mines under the Kwame Nkrumah University of Science and Technology at Kumasi.

Polytechnics

Polytechnic education at the tertiary level is a relatively recent development in Ghana. Prior to 1993 when the Polytechnic Law (PNDCL 321) was enacted, the six polytechnics existing at the time operated as technical colleges that offered mainly sub-tertiary courses and qualifications. Now the country has ten polytechnics, one in each of the ten administrative regions of the country. All are state-owned and are vocational in orientation, offering applied programs in the sciences, technology and business management leading

to the award of the Higher National Diploma (HND). The HND is a 3-year postsecondary qualification that is centrally certified by the National Board for Professional and Technician Examinations (NABPTEX). NABPTEX is a legally mandated examining body that is backed by an Act of Parliament (Act 492 of 1994) and is responsible for developing the HND curriculum, review of syllabuses, conduct of examinations and the award of diplomas.

The aims and objectives of the polytechnics are clearly spelt out in the Polytechnic Law. The mission and mandate of the polytechnics are to:

- Provide tertiary education in the field of manufacturing, commerce, science, technology, applied social sciences, applied arts and such other areas as may be determined by the authority responsible for higher education;
- Encourage study in technical subjects at the tertiary level; and
- Provide opportunity for development, research and publication of research findings.

The core business of the universities, on the other hand, is research: the search for new knowledge and the dissemination of knowledge. Teaching and extension services or the transfer of technology are supposed to be important secondary activities of the universities. However, for reasons not unrelated to lack of modern research facilities and inadequate funding, teaching has become the main activity of the universities in Ghana.

Relationship between Universities and Polytechnics

A general lack of understanding surrounds the different but complementary roles of polytechnics and universities in national development. The fact that polytechnic education is aimed at imparting technical knowledge, skills and attitudes to train a productive workforce as against the research-oriented goals of university education is not fully appreciated by a significant number of key players within the tertiary education sector, including students and even policy makers. Several reasons account for this absence of clarity in the roles of the universities and polytechnics.

Although the polytechnics do not yet offer degree qualifications, *admissions criteria for HND courses are similar to those for entry into degree programs at the universities*. In effect, for admission to HND or degree studies, the minimum academic requirement is a pass in six subjects at an average grade of D, which translates into an aggregate point score of 24 in six subjects at the senior secondary school leaving examination (This has been the case until 2005, when the universities moved up the aggregate score to 20). In practice, the universities are the first choice institutions for further studies by the majority of school leavers, while the polytechnics are second choice for most students who are unable to gain admission to university. Consequently, the students with the best grades generally enter the public universities. Although the private universities also suffer, to a certain degree, from this loss of prestige associated with the comparatively lower admission grades of their students, it is the polytechnics that have come to be considered as second-rate universities.

This situation is not helped by the fact that the minimum academic qualification for lectureship positions in either the university or the polytechnic is a Masters degree. And because conditions of service and remuneration packages are better at the universities, the first choice institution for potential lecturers at the tertiary level is again the university.

The relationship between the polytechnics and universities is therefore characterised by unhealthy rivalry and competition: competition for both students and teachers, with the polytechnics at a clear disadvantage.

Articulation and Mobility

The widespread misunderstanding of the differences in orientation and philosophy between *university and polytechnic education is perhaps the main reason for the poor articulation between the two higher education systems in Ghana*. Indeed, the two oldest universities in the country (the University of Ghana and the Kwame Nkrumah University of Science and Technology) do not recognize the HND awarded by the polytechnics as an entry qualification to any of their programs of study. However, these *universities recognize their own diploma courses and qualifications* for further studies at the degree level. The unfortunate impression created by this policy and the message that goes out with it is that *the HND qualification is irrelevant to university studies*. However, since this position is not shared by all the universities in the country, one may assume that the situation will change as cooperative exchanges develop between the universities and the polytechnics. This view is strengthened by the fact that some of the public and private universities have started admitting HND holders into the second or third year of their 4-year degree programs, especially in the vocational and business studies areas. Among the well-known university institutions that currently give credit to polytechnic qualifications in their admission schemes are the University of Cape Coast, the University of Education at Winneba, the Central University College, and the Valley View University.

Apart from a couple of university academic staff who, on their own initiatives, have spent their sabbaticals in some of the polytechnics, staff interchange between the universities and polytechnics is limited. One of the most important factors militating against the smooth mobility of staff within the tertiary education system is the disparity in remuneration and other conditions of service between university and polytechnic lecturers, even when they hold the same or comparable academic qualifications. For this reason, the polytechnics have always been at the losing end, as some of their well-qualified lecturers periodically leave to take up better-paid teaching appointments in the universities. Academic staff movement within the system is therefore unidirectional and dictated mainly by pecuniary considerations which favor the universities.

The relationship between the universities and polytechnics can therefore be described as *distant and non-cooperative*. In spite of this, some polytechnics have worked out ad-hoc arrangements with at least one university to enable their students undertake laboratory work using the facilities of the university for a fee. These interactions do suggest that conditions may exist for fruitful cooperation between polytechnics and universities. What is required is willingness on the part of both the universities and polytechnics to work together on the basis of mutual respect and a clear understanding of their complementary roles in the formation of human capital for national development. In this dialogue, the association of heads of universities, known as Vice Chancellors Ghana, and the Conference

of Polytechnic Principals have a lead role to play. Government policies will also be required to create the enabling environment and framework for cooperation between the universities and polytechnics.

Supervision and Governance

The management structure of the universities and polytechnics is based on an elaborate committee system of administration with the Governing Council of each institution as the highest statutory organ. This Council oversees the activities of the institution and is responsible for the appointment and dismissal of the head of the institution, the determination of the educational character and mission of the institution, and for matters relating to finance and development. Issues of an academic nature are, however, the responsibility of the academic boards.

The minister for tertiary education has ministerial oversight responsibility for all tertiary institutions. In discharging this responsibility, the minister is advised by the National Council for Tertiary Education, which also exercises a supervisory role over all tertiary institutions, including the allocation of government funds to the institutions and the development of norms and standards relating to quality assurance of the programs of study and the effective management of the financial resources of the institutions.

Public universities and polytechnics in Ghana, therefore, have identical systems of governance and are subject to a regulatory framework that is similar in many respects. The institutions have a large degree of academic freedom and autonomy, but there have been some “unwelcome” ministerial intrusions over non-academic issues such as student fees and unnecessary intervention in disputes between students and management of the institutions regarding academic matters. The most recent assault on the academic autonomy of the polytechnics was an unsuccessful attempt in 2002 by the ministry of education to revise the examination grading system of the polytechnics in favor of protesting students, in blatant disregard of the legal authority of NABPTEX (the examining body) and the academic boards of the institutions.

Research

It is often noted that the feature which distinguishes a university from other tertiary institutions is research. Without research, the university will not be able to fulfil its core mission of generating new knowledge. On the other hand, research at the polytechnic level is geared towards the application of existing knowledge and the use of adaptive technology to find practical solutions to the challenges of economic and industrial productivity. Research output in Ghana, as in other African countries, is in decline (Ajayi, Goma, and Johnson 1996). This is due mainly to the heavy teaching workloads of academic staff at the undergraduate level because of the growing numbers of students, inadequate funding to support research activities, and lack of academic leadership.

In Ghana, university and polytechnic lecturers receive the equivalent of \$250 per annum as individual research allowances. But because lecturers are not required to show evidence of research activities that they have undertaken with this allowance, it is not clear if these funds are used to support individual research efforts or merely serve as a salary top-up. In any case research activity in the polytechnics, because of their young history as tertiary

institutions, is handicapped by the dearth of academic leadership and the absence of a research culture, which is accentuated by inadequate research facilities, an absence of research incentives, and the lack of experienced older researchers to mentor younger colleagues.

Funding

Government funding is skewed in favor of the universities. In 1998, public expenditure per university student or unit cost per year was US\$918 as against only US\$230 for the polytechnics. In 1998 the polytechnics received only 8 percent of the tertiary education budget. This figure has subsequently increased to 14 percent in 2002, corresponding to a unit cost of about US\$300 (Afeti 2002).

Kenya

Population		34,256,000
Tertiary graduates per 100,000		354
Tertiary gross enrollment ratio		2.6%
Public universities	<i>Number:</i>	7
	<i>Enrollments:</i>	90,000
Private universities	<i>Number:</i>	14
	<i>Enrollments:</i>	9,000
Public polytechnics and professional institutes	<i>Number:</i>	5
	<i>Enrollments:</i>	22,018
Private polytechnics and professional institutes	<i>Number:</i>	0
	<i>Enrollments:</i>	
Public post-secondary colleges	<i>Number:</i>	38
	<i>Enrollments:</i>	56,982
Private post-secondary colleges	<i>Number:</i>	800
	<i>Enrollments:</i>	45,000
Open university	<i>Enrollments:</i>	0
National oversight body		Commission for Higher Education (1985)
National quality assurance agency		[same]
National qualifications framework		
Comprehensive legislation		Universities Act of Kenya (1985)

Source: Ministry of Education (Kenya); World Bank data; Darvas 2007.

Background

A former British colony and protectorate, Kenya obtained independence in December 1963 and became a republic one year later in 1964. The country has had three presidents since independence: Jomo Kenyatta (1963–1978), Daniel arap Moi (1978–2002) and Mwai Kibaki (2003 to the present). Kenya is currently a multi-party democracy following nearly 40 years of one-party authoritarianism that affected all public institutions, including those in the education sector.

The country has population of about 32 million, with the capital city of Nairobi serving as home to an estimated population of over 2 million inhabitants (Kenya 1999). In 2002, in what critics saw as a popular move on the part of the president, the towns of Mombasa, at the coast, and Kisumu, to the west and bordering Lake Victoria, were elevated to city status. Each of the three cities houses a national polytechnic while three of the six public universities are located in around Nairobi (University of Nairobi, Kenyatta University, and Jomo Kenyatta University of Agriculture and Technology). Nairobi is also home to almost all of the private universities in the country. One public university is located in Kisumu (Maseno University), while the remaining two public universities are located in Nakuru town in central Rift Valley (Egerton University) and Eldoret town in the northern Rift Valley (Moi University).

Of the four member states of the East African Community (Kenya, Uganda, Tanzania and Rwanda), Kenya has the largest economy. This is due to Kenya's colonial history, which resulted in a more advanced industrial sector. Much of Kenya's population depends on farming for a living. About 70 percent of the country's population is employed in agriculture, which accounts for 30 percent of the country's GDP.

English is the official language, with Kiswahili as the national language. This is in addition to about 42 indigenous languages spoken by each of the 42 ethnic groups in the country. Christians comprise about 87 percent of the population, followed by 10 percent Muslims and 3 percent African traditional religions.

The Higher Education System

In Kenya, the tertiary education sub-sector is composed by 24 universities (7 public and 17 private), 4 non-university polytechnics (all public), and numerous other types as described later. Of the 17 private universities, 6 are fully chartered, 5 operate with Letters of Interim Authority, and the other 6 have been issued with Certificates of Registration. The last two categories are pending progression into fully chartered universities. In addition to universities and polytechnics, the tertiary system contains a number of teacher training colleges, institutes of science and technology, government owned and supported medical training colleges, and trade and agricultural institutions providing three-year vocational training at diploma level and two-year certificate courses. This is in addition to numerous private commercial colleges.

This study focuses only on the universities and non-university national polytechnics. In this regard, Kenya's higher education system can be described as comprising a binary system made up of 23 universities and 4 non-university national polytechnics. The universities enroll 60,000 students while the four national polytechnics teach 7,000 students. These enrollments are clearly low in view of the size of the country's population.

Universities

The Kenyan university system displays some, though not much, horizontal differentiation. The institutions also display some vertical differentiation. Both horizontal and vertical differentiation are, however, only beginning to emerge and even then within a context of considerable mimetic and normative isomorphism. The system also displays poor articulation. The University of Nairobi has the highest level of vertical differentiation due to the diversity of programs it offers at different levels. As the “mother university,” this university has, by far, the highest number of programs, nearly all of which are given at both undergraduate and postgraduate levels. In addition, quite a number of teaching departments sponsor diploma level courses.

University education in Kenya dates back to 1956, when the University of Nairobi was established as the Royal Technical College of East Africa in affiliation with the University of London. As stated above, Kenya currently has six public universities (Nairobi, Kenyatta, Jomo Kenyatta, Egerton, Moi and Maseno). The development of private universities is a recent phenomenon dating from 1985, when the Universities Act of 1985 and Legal Notice No. 56 on the Universities’ Rules of 1989 came into effect. Of the seventeen private universities, six are fully chartered. Another five private universities operate under Letters of Interim Authority, which are similar to temporary permits. These institutions are yet to meet all the registration requirements set up by the Commission for Higher Education (CHE), the body in charge of registration and maintaining standards in higher education institutions in the country. An additional group of six belong to the category of “registered” universities. These are institutions that operated as *de facto* “universities” long before the CHE was established, but do not yet have charters. They offer degree education programs as affiliate university colleges of other (mainly overseas) universities, pending government approval of their own charters that would grant them powers to award their own degrees.

Three of the six public universities in Kenya (Kenyatta, Maseno and Moi) are of the “traditional” type. The other three—the University of Nairobi, the Jomo Kenyatta University of Agriculture and Technology (JKUAT), and Egerton University—can be traced to “technical” origins. However, the University of Nairobi has long outgrown its narrow technical roots and is now a comprehensive university. Moi University, whose foundation in 1984 was based on a technical mandate, has also rapidly evolved into a comprehensive university, although one of its colleges, the Western University College of Science and Technology (WUCSC), remains technical in nature. The Jomo Kenyatta University of Agriculture and Technology (JKUAT) is the only public university that has preserved its technical orientation, but it too did not evolve from a former polytechnic. Rather, it was founded as a constituent college of Kenyatta University. Egerton University has likewise retained some of its technical elements (based in agricultural sciences) though it can no longer be described as a technical university. Three of the private universities are also essentially technical in nature, but with different areas of specialization. These are: (i) Kiriri Women’s University of Science and Technology (KWUST) that provides science and technical education for women, (ii) Strathmore University, established in 2004, which seeks excellence in ICT and business management sciences, and (iii) the Aga Khan University, which has distinguished itself as a medical university that offers advanced nursing programs at diploma and bachelors levels as well as Post Graduate Medical Education (PGME).

The University of Nairobi, initially known as the Royal Technical College of East Africa, was the first higher education institution in Kenya. In 1958 the College was upgraded into the second international university college in East Africa, before being renamed the Royal College of Nairobi and later upgraded into a university college in 1961. At that time, the Royal College of Nairobi offered a Bachelor of Arts, a general Bachelor of Science, and a Bachelor of Science in Engineering in association with the University of London. At Kenya's independence in 1963, the Royal College became the University College of Nairobi and joined with Makerere College in Uganda and Dar es Salaam College in Tanzania to form the University of East Africa. The University of East Africa broke up in 1970 and the University College of Nairobi became known as the University of Nairobi.

Currently, the University of Nairobi is the largest and the most prestigious public university in Kenya, accounting for about 25 percent of the total 60,000 publicly supported university students. The other five public universities (Kenyatta, Moi, Egerton, Maseno and Jomo Kenyatta) share another 60 percent of the student enrollment, while the country's 17 private universities enroll the remaining 15 percent of university student enrollments. It is noteworthy that although the country produces about 300,000 graduates from secondary schools annually and some 40,000 manage to qualify for university admission, just 10,000 are actually admitted into the public universities by the Public Universities' Joint Admissions Board, which administers admissions for all public universities. The remaining three out of four qualifying students are forced to either seek admission into the private (and more expensive) universities or enter other higher education institutions. A small proportion seeks admission to overseas universities. Since 1998 a third option also exists: admission into public universities through what is variously referred to as the "Module II," "Self-Sponsored," or "Parallel" degree program. This mechanism allows universities to admit self-sponsored (tuition-paying) students, often on a part-time basis, so long as they meet the minimum admission requirements. This mechanism has arguably improved access and to some extent equity, though it has also resulted in overstretching of university facilities and human resources. It has also, again arguably, seemingly had a negative effect on quality in spite of the additional budgetary resources it provides.

It is also important to understand that, with the exceptions noted above, all of the public and private universities have evolved with the University of Nairobi as their model. Both mimetic and normative isomorphisms are, therefore, evident in the Kenyan university system. In this regard, only a few universities have charted a course that is consciously different from that of the University of Nairobi. Consequently, most universities offer almost the same undifferentiated type of education programs. This leaves little room for diversity or for horizontal differentiation. In spite of this, some vertical differentiation is beginning to emerge, although still with a considerable degree of isomorphism. In this context, the University of Nairobi retains the lead in terms of popularity with students, as indicated to this study by one registrar who also happens to be a member of the Joint Admissions Board.

Non-University Polytechnic-type Institutions

The system of non-university polytechnic-type institutions displays substantial horizontal differentiation, but little vertical differentiation. It also possesses very poor articulation. The system reflects a certain amount of isomorphism—in this case mimetic—in that the National Polytechnics try to emulate the Kenya Polytechnic, which is the oldest of the polytechnics.

Kenya has four national polytechnics (Kenya, Mombasa, Kisumu and Kitale), one technical teacher training college (the Kenya Technical Teachers' College), 17 institutes of technology, 20 technical institutes, and 600 youth polytechnics.

The history of some of the institutions goes back to Christian missionaries who set up vocational training schools in East Africa as a way of securing cheap and affordable technical labor from the Africans. One important factor in the development of polytechnics is that in the colonial period (before 1963) Africans were excluded from "academic scholarship" and were thus mainly relegated to rural and industrial manual education (vocational and lower-level technical education) for service to the white settlers. This "education" was characterized by heavy evangelization amidst minimal literacy instruction. Not surprisingly, at the time of independence, Africans hurried to throw off the "yokes" of vocational education in order to receive the academic education and higher-technology instruction from which they had systematically been denied access. The effect of this "rush for education" was that most of the vocational institutions were converted into "technical" schools that offered both academic and technical subjects. The 1970s saw the government encouraging all those without substantial formal education to join vocational training institutions (especially polytechnics) as a way of acquiring trade skills. The effect of this was to create a rich variety of technical institutions that fall into five main categories: (i) Youth Polytechnics, (ii) National Youth Service, (iii) community-based Harambee Institutes of Technology (now known as Institutes of Technology), (iv) Technical High Schools (now known as Technical Training Institutes), and (v) the National Polytechnics. For the purposes of this study, only the four National Polytechnics will be investigated.

National Polytechnics

Kenya has four national polytechnics, which are located in different parts of the country: The Kenya Polytechnic is in the capital of Nairobi, Mombasa Polytechnic in the port city Mombasa, Kisumu Polytechnic in the Lake Victoria city of Kisumu, and Eldoret Polytechnic in the Rift Valley town of Eldoret. All have different histories but offer similar curricula. However, the Kenya Polytechnic is unique due to its location. This institution is very popular with students, because it is located in the capital city. Its location has also influenced its curriculum in that it has been forced to respond to such demands as training in ICT and business management, compared to the other three which find it difficult to attract the kind of student population willing to take such courses at levels that would make the courses self-sustaining.

Some of the national polytechnics existed long before independence. The Mombasa Polytechnic, for example, was started in 1948 to provide vocational education to Muslim youth in the coastal area. Kenya Polytechnic was established 12 years later in 1960. Both are now government-funded institutions under the Ministry of Education, Science and Technology. Admission is offered to secondary school leavers who graduate from the polytechnics with Certificates, Diplomas and Higher National Diplomas, depending on the length of training. In recent years, the four national polytechnics have started offering demand-driven short courses emphasizing vocational skills, especially for people already in employment. Similar courses can be found elsewhere in the other types of institutions. Therefore, though they increase program diversity at the institutional level, they do not contribute to systemic diversity.

The Kenya Polytechnic hosts a variety of departments, namely Building & Civil Engineering, Electrical & Electronics Engineering, Information & Liberal Studies, Institutional Management, Mechanical Engineering, Surveying & Mapping, Applied Science, Health Sciences & Biotechnology, Business Studies, Computer Studies, Enterprise Development & Graphic Arts. The other polytechnics (Mombasa, Eldoret and Kisumu) are essentially similar to the Kenya Polytechnic. This polytechnic isomorphism has been deliberately created by the government through the Polytechnics' Act, which seeks to harmonise polytechnic training by requiring that all polytechnics stick to a prescribed curriculum, essentially modeled after that of the Kenya Polytechnic.

The four institutions, therefore, offer more or less similar training at Certificate, Diploma and Higher National Diploma (HND) levels. To qualify for HND admission, one has to have acquired an ordinary diploma in the same area of study. The HND is a three-year post-secondary school qualification, centrally certified by the Kenya National Examinations Council (KNEC), the legally mandated examining body backed by an Act of Parliament. The task of developing curriculum and reviewing the syllabi is the responsibility of the Kenya Institute of Education (KIE), the body that is legally mandated to oversee curricula development in all levels of education, except the universities. In line with the general public preference for academic as opposed to practical/vocational education, no investor has yet put up a private polytechnic in Kenya. All the four national level polytechnics are state-owned and benefit from government funding in addition to fees levied from students.

What emerges from this system, therefore, is a picture of substantial horizontal but little vertical differentiation. Although a variety of institutional types exists, each institutional type offers essentially the same curriculum. This is also true of institutions within the same category. Encouragingly, some as yet unsystematic articulation can be observed, especially among the Institutes of Technology, the Technical Training Institutes, and the four National Polytechnics. For example, students can easily transfer from one institutional type to another upon completion of one stage of training. They can also transfer from one institution to another within the same institutional category—at any time during their training. It is important to note, however, that recent developments at this system level could work against horizontal differentiation. For example, because of public demand, some of these institutions have started offering non-vocational but popular professional courses such as accounting and business management. Some technical institutions have even entered into the area of laboratory technology despite not having been established as medical training institutions. This new development, while increasing vertical differentiation within each institution, poses the danger of reducing horizontal differentiation in that these institutions could conceivably start concentrating on the popular professional courses that are also available in other types of institutions.

Differentiation between Universities and National Polytechnics

On balance, considerable horizontal differentiation is found in Kenya between universities and national polytechnics, though as stated earlier, some of the polytechnics are beginning to offer what might be perceived as academic, as opposed to “skills providing” courses. On their part, the universities are also beginning to put forward what are essentially

“skills providing” short courses in response to public demand. At any rate, universities have always provided a fair number of programs that are “skills oriented” in character, such as nursing and agricultural extension. Thus, evidence of academic and vocational drift is apparent. Greater detail on differentiation between universities and polytechnics along a number of dimensions can be found in the Eastern Africa regional report. Here, we confine ourselves to a few key observations.

A considerable amount of research is taking place in the public universities and also in some private universities. But the volume of research output is generally low compared to that of universities in developed countries. The reasons for this situation are well known and include poor funding, heavy teaching loads, poor equipment, etc. In Kenya, public university and polytechnic lecturers do not receive any allowances for research. However, the universities occupy a more competitive position to attract research funding from foundations and other sources. Though this means that Kenyan universities have to struggle in order to meet one of their prime aims in national development, it also means that they are better placed than polytechnics to undertake research. The situation is beginning to change for the better as the National Assembly is in the process of proposing a bill that would provide research funds from the government. Polytechnics, though, are unlikely to benefit from this research funding bill since research is not normally accepted as one of their mandates. Considering the two types of tertiary institutions together (i.e., universities and National Polytechnics), the conclusion is that they could and should articulate more in research, with the universities providing the theoretical foundations and the polytechnics contributing the applied “innovative” orientation.

With regard to governance, two observations are in order. First, as in other Anglophone countries, Kenyan universities are run by departmental chairs, deans, senates and university councils. In all public universities, the Vice-Chancellors appoint the departmental chairs, while the staff members of faculties elect the deans of faculties. Senates, on the other hand, are usually composed of deans, departmental chairs, college principals and an elected faculty representative. Students are also represented in university senates by two of their elected leaders (usually the Chair and the Secretary of the student association). Normally, the Vice-Chancellor chairs senate meetings. The government appoints the members of university councils. With each university now having its own chancellor, however, this could change and it is possible that the chancellor could emerge as the new appointing power for university councils. Prior to 2004, the President of Kenya was the Chancellor of all public universities, in addition to being the appointing authority for all the Vice-chancellors of public universities. This situation changed in 2004 when, for the first time, public universities started publicly advertising for the post of the Vice-Chancellors. The effect of this with regard to producing differentiated governance in universities is yet to be seen.

Second, all the public universities profess some form of decentralization through colleges and schools though in reality all practice a considerable amount of centralization on many aspects of university life. In addition, the government still has considerable say in the running of the institutions, including imposing uniform practices, for example, with regard to procurement procedures. This is in spite of the fact that each university has been created by individual Acts of Parliament. This situation is unlikely to change until the general Universities Act and the individual University Acts are reformed to provide more autonomy to public universities. Some differentiation exists between university

governance and polytechnics governance, but in the end, the government exercises considerable control in both. Concerning institutional governance, then, little differentiation is observed among universities.

In this respect, private universities have more differentiated self-regulating governance regimes. The Commission for Higher Education has some supervisory role over the running of private universities but is not overly intrusive. More differentiation in the governance of public universities will hopefully be one outcome of the activities of the Public Universities Inspection Board (PUIB) established in 2005.

Articulation between/among Universities and National Polytechnics

In general, poor articulation is found between and among universities and polytechnics in Kenya. First, let us begin with the admission criteria. Public university admission in Kenya is centralized and non-differentiated. At the same time, it articulates poorly with admission into the polytechnics. The Joint Admissions Board (JAB) controls admission of students into public universities. Under JAB, only fresh graduates from secondary schools, with an aggregate mean of C+ and above, qualify for admission. For private universities, the situation is different since a number of these institutions also provide university bridging courses to students who fail to attain the mandatory aggregate mean grade of C+ but happen to have other qualifications from polytechnic non-university institutions. For example, Kabarak University, a private university, admits students with Kenya Certificate of Secondary Education (KCSE) C plain or equivalents, or a Diploma for degree programs in such areas as BSc. in computer science, B.Com, among others. However, the expansion of university admissions to self-sponsored students in public universities has also started to pave way for a closer university-polytechnic articulation and open the way for greater student mobility. Unlike in the past, public universities (through the Self-Sponsored Program, also known as “Module II”) do now admit Polytechnic and other College Diploma graduates for degree programs, though such students may have failed to qualify for direct JAB university admission after the KCSE examinations.

Second, no formal mechanism exists for credit transfer either among universities or between universities and polytechnics. Currently, the public universities are working on mechanisms for credit transfers among themselves. But there is no public discussion on credit transfers between public and private universities, or between the universities and the polytechnics. On this matter, the Ministry of Education, Science and Technology has indicated that it is working towards establishing some policy. The Assistant Minister, in-charge of Higher Education, when responding to a question in Parliament stated that the government plans to put in place a system for credit transfer, especially from the national polytechnics to the universities (June 9, 2005). This, he said, was one of the proposals contained in the Ministry’s Sessional Paper No. 1 of 2005 on Education.

With the current liberalization of university education in the country, it is likely a matter of time before the polytechnic HND gains recognition and accreditation for university admission. This view is further strengthened by the fact that at the University of Nairobi’s Faculty of Engineering, the national polytechnic graduates, especially those from the Kenya Polytechnic, have already begun to gain admissions for B.Sc. in Engineering degree courses. But this admission is rather “grudging” in that the HND holders are exempted from only

one-third of the total number of units taught at the Faculty. This is despite the fact that most graduates from the national polytechnics would argue that they are entitled to be exempted from at least half the number of units, given that they have invested three years in post-secondary education by the time they acquire the HND qualification.

Third, some articulation, though limited, is demonstrated between universities and national polytechnics with regard to lateral mobility by academic staff. In fact, teaching staff can and do move between the two types of institutions. This is so because the basic qualification for lecturing in the two types of institutions is a Masters degree. This kind of mobility occurs on an *ad hoc* basis and is determined by the different terms of service, including remuneration, offered by the two types of institutions. It is the prerogative of individual universities to hire lecturers, whereas the government—under the Ministry of Education, Science and Technology through the Teachers' Service Commission—hires lecturers in polytechnics. In this arrangement, universities' terms of service are much better than those offered by the polytechnics, even when lecturers have similar qualifications. A university lecturer also accorded a higher social status than a polytechnic lecturer. This means that to the extent that lateral mobility takes place between the two institutional types, it is inevitably the polytechnic lecturers who seek to move to the universities, and not the vice-versa. This was certainly the case until the freezing of employment at public universities, effected in the late 1990s. Before then, most of the highly qualified polytechnic lecturers were always on the look out for teaching appointments in universities. Because no structured mechanism is available for facilitating staff movements, this means that the relationship between the two types of institutions, in this regard, is also unstructured.

We have already noted that articulation among universities is poorly defined even though efforts are underway to address this shortcoming. Public universities have structured, lateral staff mobility, in that lecturers can always move from one public university to another. This is especially so starting from 2004, when salaries for lecturers across the different public universities were harmonised. Following the harmonisation, lecturers feel free to move, especially on promotion. In some cases, however, they have been known to move to a lower rank because of prestige and other social reasons.

The most distinguishing articulation feature between public and private universities is that, for a very long time, private universities have benefited from the services of lecturers from public universities, most of whom they employ on part-time basis. This is so because, more so than public universities, private universities do not seem to have staff development programs. However, in spite of the noticeable reliance on staff from public universities, there is no formal articulation mechanism between private and public universities. In fact, no articulation mechanisms of any nature are in place to facilitate credit transfers for students. Further details on articulation among and between different types of institutions can be found in the Eastern Africa regional report.

Conclusions and Challenges

One finding from this country case study is that major horizontal differentiation is found between universities and polytechnics in Kenya. These are two very different types of institutions, for example, when compared to other countries such as South Africa, which has

degree-granting *technikons*. As a result, limited mobility of both staff and students is observed from the polytechnics to the universities. This consequently makes polytechnics dead-end institutions in terms of further academic achievement, which is another factor that discourages some prospective students from joining polytechnics. Instead, they prefer universities.

Related to the above is the misfortune that, for the last 42 years since independence, Kenya has not had a human resource development policy in place. This has enabled education and training programs to be mounted that are not matched with the country's development priorities. Uganda is already beginning to register progress in this area through the government's sponsorship, to university, of only those students who seek skills required by the country. This somewhat controversial policy is emphasizing science and engineering over other academic fields.

Given that polytechnics are expected to provide more practical skills than the universities, one would also expect the number of polytechnics to be more than double that of universities. In the case of Kenya, however, the situation is quite the opposite, with 23 universities and only 4 national polytechnics. This is a situation that requires urgent attention.

It is also necessary to underscore the government's intentions to convert both the Kenya and Mombasa Polytechnics into universities of technology that will offer degrees in technology in addition to certificates, ordinary diplomas, and higher diplomas. In the same vein, the government is working out mechanisms for credit transfer that will enable polytechnic diploma-holders qualify for two-year technical degree programs. A review of the current legislation in universities is also being undertaken to assess the feasibility for universities to put in place credit transfer structures from the polytechnics and institutes of technology as well as other institutions. While we endorse this effort, we also urge the emerging policy not to lose sight of middle level training needs.

Other signs of growing system articulation are also apparent. The Higher Education Loans Board (HELB), which formerly catered only for university students, is now beginning to extend its financial assistance to students in all tertiary institutions. Likewise, the Commission for Higher Education will soon receive an expanded mandate for ensuring educational quality in all tertiary and research institutions, not just the universities as is presently the case.

Several challenges are evident. One, public universities need to differentiate themselves from each other more than is the case at present. Two, public universities must persuade themselves that they gain no automatic prestige from seeking to become a comprehensive university along the lines of the University of Nairobi. Instead, they must face the challenge of discovering their own competitive niche and branding their products, thus moving away from the practices of mimetic and normative isomorphism. Three, private universities, on their part, are faced with the challenge of differentiating themselves, not only from each other, but also from the public universities. Few have ventured into sciences and technology. They, too, therefore, have an isomorphism problem of their own though, in their case, it is difficult to discern the origin of the model they are replicating. Four, at the policy level, the risk of turning the polytechnics into technical universities without catering for their replacement is increasingly apparent. Five, a final challenge to differentiation is that Kenya has yet to formulate a comprehensive human resources development policy and program. Until this is done, it will always be difficult

to pass judgment as to an acceptable and desirable level of differentiation in tertiary education institutions. In short, such a policy would go a long way towards outlining the shape and size of the nation's tertiary education system.

Some of the challenges facing differentiation also apply to articulation. First, public universities need to define modes of credit transfers. Wisely, they are currently addressing this issue. Second, public and private universities face the challenge of establishing mechanisms to enable staff exchanges, credit transfers, joint research, and other collaborative activities. Third, both types of institutions have yet to address their relationship with the national polytechnics, even though there are a few indications that this is beginning to happen on an *ad hoc* basis.

Malawi

Population		12,884,000
Tertiary graduates per 100,000		39
Tertiary gross enrollment ratio		0.3%
Public universities	<i>Number:</i>	2
	<i>Enrollments:</i>	7,350
Private universities	<i>Number:</i>	4
	<i>Enrollments:</i>	805
Public polytechnics and Professional institutes	<i>Number:</i>	2
	<i>Enrollments:</i>	NA
Private polytechnics and Professional institutes	<i>Number:</i>	1
	<i>Enrollments:</i>	NA
Public post-secondary colleges	<i>Number:</i>	5
	<i>Enrollments:</i>	2,375
Private post-secondary colleges	<i>Number:</i>	3
	<i>Enrollments:</i>	161
Open university	<i>Enrollments:</i>	NA
National oversight body		None—discussions underway
National quality assurance agency		None
National qualifications framework		None
Comprehensive legislation		University of Malawi Act (1965; amended 1998) University of Mzuzu Act, 1997

Source: Chimombo (2003); World Bank data; Darvas (2007).

Background

Malawi, a former British protectorate, gained independence in 1964 under Hastings Banda, leader of the Malawi Congress Party (MCP). In November 1970 the constitution of Malawi was amended to make Banda the president for life, effective the following year. The vast majority (80 percent) of its population of about 10.5-million live in rural areas, but it has one of the densest populations in Africa.

Malawi is among the poorest and most underdeveloped nations in the world. It is subject to persistent drought and is, as a result, heavily dependent on development assistance. Like many African nations, the spread of AIDS has created a social and economic crisis with life expectancy now around 37 years. Economically, the country is heavily dependent on agriculture, which constitutes 92 percent of export earnings. Many Malawians work as migrant labourers in South Africa and other countries. The largest city is the former capital, Blantyre, with a estimated population of 2 million in 1998. In 1975, Lilongwe became the capital, with an estimated population of 1 million.

Prior to the first multi-party elections in May 1994, all members of parliament belonged to the MCP, the only recognized political party. Under Banda, Malawi undertook a vigorous program of economic development. Controversially, he developed extensive trade relations with the white minority government of Rhodesia and maintained friendly relations with the Mozambique colony. In 1967, he signed a trade pact with the apartheid government and was the first black African head of state to visit South Africa. This reconciliatory policy towards South Africa aroused severe criticism from black African leaders. However, Malawi's economic growth was continuously inhibited by foreign debt, drought, and the massive influx of Mozambican refugees produced by civil strife in that country during the late 1980s.

The first post-independent parliamentary elections were held in 1978, with only the MCP participating. The majority of incumbents were defeated. Participation in the 1983, 1987, and 1992 elections was also restricted to the MCP. Bakili Muluzi, a prominent business executive and former Cabinet member of the United Democratic Front (UDF), was elected president in 1994 and won a second five-year term in 1999.

The Higher Education System

The two public universities are the University of Malawi (established in 1965 at Zomba in the immediate post-independence era, now with about 5,561 students) and the recently established Mzuzu University (see below for details). In addition, a range of teacher training colleges, technical colleges, nursing and agricultural institutions provide professional and vocational training in these areas at both the higher and further education levels.

Higher education in Malawi presents what might be called an “*emerging*” binary system, comprising 4 university institutions (2 public and 2 private) and 3 non-university polytechnic-type institutions (2 public and 1 private). Course offerings among the latter tend to emphasize management and information technology.

The University of Malawi

From the outset, the mission of the University of Malawi (UNIMA) has been to support the economic and cultural development of the nation by providing medium- and high-level graduates for the civil service and the small private sector.

UNIMA initially comprised five institutions: the Bunda College of Agriculture, Chancellor College, the Institute of Public Administration, the Soche Hill College of Education, and the Malawi Polytechnic. Since then, some of these have been merged. In 1979 the Kamuzu College of Nursing was opened, and the College of Medicine was added in 1995. The establishment of the Polytechnic within the structure of UNIMA amounts to the creation of a binary institution (similar to the current emergence of the South African comprehensive institutions). This makes eminent sense in the developing country context, particularly in those countries with small higher education systems in which the national university plays a central role, and in which human and financial resource constraints prohibit the simultaneous expansion and differentiation of higher education provision.

UNIMA's long term goal is to complete a process of decentralization so that the five constituent colleges become separate universities in time. The decentralization and provision of higher education at the provincial level thus represent an important driver in the process of differentiation in developing countries. This applies particularly to polytechnic-type education and training that potentially generates greater opportunities for employment. The advantages of *differentiation through decentralization* are that increased autonomy potentially increases the space for initiatives which respond to local conditions and needs. Those closest to the ground in regional locations are more likely to create programmatic responses which are relevant to their contexts than those that are shaped by centralised bureaucracies. However, the success of decentralization initiatives depends on sufficient enabling conditions, in particular the availability of adequate *human and financial resources* along with the infrastructure essential to ensure efficiency and effectiveness. An additional risk is that uncoordinated decentralization will lead to the needless duplication of management and administrative structures.

The academic programs of UNIMA provide for undergraduate and postgraduate studies. These include general formative education in social science, science and the humanities, as well as professional training in agriculture, education, medicine, nursing and engineering. Undergraduate programs are offered at the diploma and degree levels. Program contents were tightly controlled from the outset as part of stringent political suppression during the long period of one-party dictatorship. As a result, "UNIMA has always been reluctant to offer courses that raise consciousness and arouse criticism against authorities" (Chimombo 2003).

Tracer studies and rising graduate unemployment and underemployment (especially in the fields of languages and other humanities) indicate a general lack of relevance of UNIMA curricula for the world of work (Chimombo 2003). In particular, graduates of UNIMA participating in the tracer study felt that vocational studies were too *academic in nature, and did not pay sufficient attention* to the demands of the professions. Part of the problem lies in the weak linkages between industry and the university. These areas are usually addressed directly by non-university polytechnic-type institutions. The extent to which interaction with industry occurs within the Polytechnic component of UNIMA might

usefully be given attention. Clearly from all accounts, the higher education system in Malawi needs greater *differentiation* in order to meet these challenges. During the 1980s, a shift from liberal education towards greater specialization resulted in the introduction of degree programs in engineering at the Polytechnic. This is noteworthy, as most polytechnic-type institutions throughout the world do not offer degrees. It appears that the other polytechnic-type institutions in Malawi only award certificates and diplomas. However, there is currently a move towards offering degrees in these institutions as well. Thus, both academic and vocational drift is evident in Malawi—with the university offering career-oriented vocational programs through its Polytechnic component, and the other polytechnics seeking to expand into degree programs.

In the case of the UNIMA Polytechnic, the stated normative goal is to consult closely with local communities in order to address local needs and in this way to break the ivory tower syndrome. The extent to which such consultation takes actually place is unclear, as is the output of problem-based research at the universities and polytechnics.

Participation rates for higher education in Malawi are particularly low, with only 0.3 percent of the 18 to 24 years of age cohort enrolled. In terms of the *2000–2012 Policy Investment Framework for Malawi* (Ministry of Education 1997b), the goal is to raise the participation rate to 1 percent. Likewise, to improve equity, a second goal is to increase students from disadvantaged groups to at least 15 percent of enrollments. In addition, while student/teacher ratios could be increased at UNIMA, it is clear, as Chimombo (2003) observes, “enrollments cannot expand without an increased investment in teaching and other learning facilities.” This suggests not only the *expansion* but also the *differentiation* of higher education provision. Among the strategies identified to address these challenges is greater utilization of distance education. This in itself implies a measure of institutional differentiation. Although not specifically recognized, these growth targets imply the need for institutional and program differentiation in order to meet the needs of a larger and more varied student constituency.

Mzuzu University

The opening of Mzuzu University (MU) as the second university represents a major development in Malawian higher education. It is noteworthy that the rationale for the establishment of this institution presents an interesting departure from the usual rationale for differentiation. The common aim of institutional and program differentiation is to increase diversity within the system. The purpose for doing so is normally to provide greater access to a wider *variety of increasingly non-traditional and often under-prepared students* to a sufficiently broad range of programs and qualification levels to meet changing labor market needs and the demands of national development.

MU’s main mission is to *expand access* to higher education, particularly through the provision of distance education. However, it focuses on just a single national priority: secondary teacher training. Its founding is interpreted by some as the outcome of “the increase in democracy that Malawi experienced in the mid-1990s under its new government” (Chimombo 2003). The significance of this new institution was that “the university hoped to make a fresh start and thereby avoid some of the problems that existed at the University of Malawi.” It was further expected that the university “would lead to competition with the existing university and encourage and promote excellence in the delivery of higher education

in the country” (ibid.). Reports suggest that these expectations are unfortunately not being met. “It is ironic that a whole new university should have started offering subjects that were already being offered at UNIMA” (Chimombo 2003).

Consequently, it seems that the decision to establish a second university may have been based more on political reasons than on education sector strategy considerations. In particular, the need for diversification of institutional and program offerings to accommodate excess social demand and to address development needs appears not to have been the prime reason. In fact, the duplication of program offerings in this case directly nullifies the principle of differentiation. The rationale for this institutional duplication is even more questionable given the severe constraints in the financing of higher education in Malawi. As indicated above, this example highlights the distinction between institutional *expansion* and institutional *differentiation*. In short, adding new tertiary institutions does not necessarily lead to system diversification.

Other Non-University Polytechnic-Type Institutions

Little information was obtained on the other non-university polytechnic-type institutions in Malawi. It appears that they offer certificate and diploma qualifications, mainly in a narrow band of information technology and management fields. Enrollments are generally very small. Admission to the polytechnics is on the basis of the general education school-leaving qualification plus affordability, as there is considerable social demand for a small number of higher education places. Admission to the universities is on the basis of academic merit.

Because Malawi inherited a colonial elitist and very academic higher education structure, strong popular aspirations target university entrance, as opposed to the polytechnics. This attitude now seems to be shifting as recent experience shows that polytechnic qualifications lead to greater immediate job opportunities and more direct service to the nation in terms of addressing development problems and needs. In response, the universities have started to develop ‘parallel’ programs, which are client and need driven. This is another manifestation of vocational drift.

Technical education is offered in three government and three government-aided technical colleges, which offer four-year apprenticeships followed by three-year alternating institutional and industrial training. There are also some private bible colleges providing specialized education.

Systemic Characteristics: Governance, Regulation, and Funding

Governance of the universities and polytechnics is handled separately. Universities are established by individual acts of parliament. Currently, the intention is to promulgate a Higher Education Act, which would abolish the individual acts and incorporate all institutions into a single legislative framework, governed by a common code of conduct. It is also intended to establish a *Council on Higher Education (CHE)*, which would, among other things, take responsibility for quality assurance. At present, the Ministry of Education is the sole regulatory authority.

In contrast, the polytechnics are legally established by means of a ministerial order. Government approval for the setting up of polytechnics is provided on the basis of an

application of intention. Unlike the University of Malawi, the private polytechnics appear to enjoy a fairly high degree of autonomy, with Management Boards providing accountability. Government acts only where necessary, especially regarding *program approval*.

Funding for universities consists of government grants plus a student loan scheme to cover increasing cost recovery through fees. The private polytechnics are funded by their owners and student fees, with no government support forthcoming.

As yet, no association of heads of higher education institutions has been formed, although informal consultation and lobbying occurs.

Articulation and Interface between Universities and Polytechnics

No obvious relationship can be discerned between the universities and polytechnics. Some limited staff support is provided by the universities for the polytechnics. However, when the Council on Higher Education is put in place, it is expected to ensure that, given the severe resource constraints facing the nation, existing facilities are effectively utilized and not duplicated.

A formal access route exists which allows polytechnic graduates to pursue degree studies. Accordingly, courses and qualifications acquired in polytechnic institutions are recognized and credited by the universities. For example, every two years, the Ministry of Education supports its polytechnic diploma-holders to acquire BEd degrees.

Conclusions and Main Challenges

The main challenge facing the development and expansion of Malawian higher education is that the provision of higher education is expensive and therefore needs to be carefully planned. For this reason, institutions need to be accountable for previous public fiscal resources and the achievement of goals needs to be carefully monitored. In both cases, transparency is an absolute necessity in order to eliminate the “amateurism” and nepotism, which appear to be occurring.

Specifically, achieving a more differentiated and articulated system requires dialogue between the universities and polytechnics. The purpose of this would be to create increased complementarity by identifying gaps and duplications in current provision. The relationship between the university and polytechnic sub-sectors would need to be legally defined in order to eliminate Ministerial arbitration on these matters. The overall aim of government would be to put in place a binary system, which would *ensure sufficient differentiation* in order to provide for all levels of management and professional graduate output. For this reason, it might usefully seek to maintain the binary divide but in a flexible way that would allow academic and vocational drift where appropriate.

While some evidence of both *vocational and academic drift* is observed, Malawi’s system constitutes a de facto binary system. But this is not based on strict institutional lines, as the UNIMA Polytechnic is part of the federal university structure. If the process of decentralization proceeds as intended, a stricter binary divide, along institutional lines, is likely to develop. For this reason, the system can be characterised as an ‘*emerging*’ binary

system. The extent to which further academic and vocational drift will occur or be restricted by government remains to be seen.

In the light of the fact that financial constraints have made it “increasingly difficult for the university to implement its programs” (Chimombo, 2003: 419) it can be assumed that the process of institutional and program differentiation in the public sector has been directly inhibited by lack of human and financial resources.

From the available evidence, it appears that in spite of various *pressures for differentiation*, this is not being identified explicitly as a strategic objective in public educational policy. Despite the establishment of the second university and the move towards decentralization that might lead to institutional and program differentiation, UNIMA will continue to play a central role in national development. In particular, limited resources constrain the expansion and differentiation of higher education in the country. As a result, the process of differentiation may have to pursue on a dual strategy. The first is to encourage the expansion of private institutions to provide a complementary range of differentiated programs at different qualifications levels to meet social demands, labor market needs and development priorities. The second is, within the public sector, to focus on program differentiation in the form of the provision of ‘binary’ university and polytechnic-type programs within a single institution—as is now the case with UNIMA. As indicated, this makes sense in the developing country context and in particular in those countries with small higher education systems in which the national university plays a dominant role.

Mozambique

Population		19,792,000
Tertiary graduates per 100,000		112
Tertiary gross enrollment ratio		1.0%
Public universities	<i>Number:</i>	3
	<i>Enrollments:</i>	30,179
Private universities	<i>Number:</i>	5
	<i>Enrollments:</i>	5,825
Public polytechnics and professional institutes	<i>Number:</i>	8
	<i>Enrollments:</i>	1,911
Private polytechnics and professional institutes	<i>Number:</i>	6
	<i>Enrollments:</i>	5,318
Public post-secondary colleges	<i>Number:</i>	0
	<i>Enrollments:</i>	
Private post-secondary colleges	<i>Number:</i>	0
	<i>Enrollments:</i>	
Open university	<i>Enrollments:</i>	0
National oversight body		National Council for Higher Education (2003)
National quality assurance agency		In progress. Currently a Working Commission for Quality Assurance and Accreditation
National qualifications framework		In progress; planned for 2008
Comprehensive legislation		Law of Higher Education (2003)

Note that the above categories do not translate neatly from the Mozambican nomenclature.

Source: Mouzinho and others (2003); Darvas (2007); World Bank data.

Background

After a long and bitter struggle against the Portuguese colonial power, Mozambique gained independence in 1975. Under colonial rule, economic development was severely neglected. Consequently, the economy is heavily dependent on the export of cheap raw materials and the labor force is largely untrained and illiterate. While Mozambique possesses substantial mineral resources, they remain largely undeveloped. Mozambique has a population just under 20 million (2001 estimate). Maputo is the main port, largest city and capital, with an estimated population of around 1.5 million. Other major cities are Beira (around 500,000) and Nampula (around 300,000).

Independence was shortly followed by an exceptionally brutal civil conflict between government forces and the RENAMO resistance movement, which was supported by then Rhodesia and subsequently the apartheid government of South Africa under a strategy of destabilization aimed at neighbouring countries. Health and education systems were destroyed and, in many areas, agricultural production ceased.

At the end of this conflict, Mozambique was classified as the poorest country in the world. Consequently, a major reconstruction effort was undertaken to rebuild its social and economic infrastructure. Because it was starting from such a low baseline, economic growth became the fastest in Africa, with fiscal deficits and inflation remaining low, and foreign investment growing rapidly—particularly from post-apartheid South Africa and the tourism industry. Nonetheless, the benefits of this growth have not been evenly distributed across the nation. As a result, widespread poverty persists, with almost 70 percent of the population (about 16.5 million) living below the level of absolute poverty. The economy remains vulnerable to changing external conditions and dependent on development assistance, which provides 40 percent of the annual budget.

In the post-independent era, the government has undertaken in a vigorous education campaign to offset the almost total exclusion of the indigenous population from access to education under Portuguese rule. Expansion of primary and secondary education has been a priority, but the limited number of trained teachers and the ravaging effects of the civil war have slowed progress in this area.

Following the demise of apartheid, a new relationship emerged between Mozambique and South Africa. Considerable investment and cooperative ventures are in progress and assistance for clearing landmines was provided. White South African farmers have leased land to improve agricultural productivity and employment.

The Higher Education System⁵

Higher education in Mozambique began in 1962 with the provision of programs for settlers' children by branches of Portuguese universities (Chilundo, 2003). In 1968, the University of Lourenço Marques was established and its initially limited range of program offerings was gradually expanded. After independence in 1975, the university became the first national university of Mozambique and was renamed Eduardo Mondlane University

5. The following sections are drawn largely from Arlindo Chilundo (2003).

(UEM) in 1976. Various reform initiatives were subsequently undertaken to meet the growing social demand for university education and to align the university mission with national development priorities. These included rapid program differentiation and curriculum restructuring to meet the new circumstances.

In 1985 the Higher Pedagogical Institute was set up. Its appearance “heralded a new era in the history of higher education in Mozambique, the era of plurality. UEM was no longer the only higher education institution in the country” (Chilundo, 2003:463). This institution was upgraded to university status in 1995 and subsequently opened branches in the cities of Beira and Nampula. Thus, *institutional and program differentiation became a central feature of the development of higher education in the country*. In the next year, the Higher Institute for International Relations was founded. Co-ordination for this new plurality of institutions and programs was provided by the establishment in 1991 of the National Council for Higher Education. The vocational Nautical School of Mozambique, established in 1985, began offering higher education courses in 1991, and the Academy of Policy Sciences was founded in 1999.

Mozambique’s transition to a market economy in 1987 provided opportunities for private higher education initiatives. Consequently, the Higher Polytechnic and University Institute and the Catholic University of Mozambique were founded in 1995, followed by the Higher Institute of Science and Technology a year later, the Mussa Bin Bique University and the Higher Institute for Transport and Communications in 1999. The rapid proliferation of private provision along with the high tuition fees they are able to command can be seen as “the result of the high social demand and the inability of the public sector to respond” (Chilundo 2003).

Governance, Regulation and Funding

Until 1999 the Ministry of Education supervised higher education through the National Council for Higher Education. The system is now co-ordinated and regulated by the Ministry of Higher Education, Science and Technology, which was established in 2000.⁶ Universities and non-universities are regulated in a similar way. No difference is apparent in entry criteria between the university and polytechnic sectors.

The registration of polytechnics is handled on the basis of a proposal submitted to the Ministry of Higher Education. The economic viability of the institution is investigated by the National Council for Higher Education. On the basis of this assessment, recommendations are made to Cabinet to approve or reject the application. Currently, programs are accredited by the Ministry according to its assessment of quality. A quality assurance and promotion framework is currently being developed for the eventual accreditation of both university and polytechnic programs.

The sector enjoys a high level of institutional autonomy within what is regarded as a lightly steered governance approach. The Ministry’s role is seen largely as a coordinating one. But as Chilundo (2003) observes, “although the Law on Higher Education states that higher education institutions are autonomous, the precise degree of autonomy has often been a matter of dispute.” For the purposes of this study and the issue of programmatic

6. This responsibility has since reverted to the Ministry of Education.

differentiation, it is important to note that “although most of the financial resources of the public higher education institutions come from the state, within the framework of the law governing higher education, Eduardo Mondlane University and other public institutions are free to introduce and terminate specific academic programs” (Chilundo 2003).

Public higher education institutions are financed by the Ministry of Planning and Finance on the basis of negotiations with individual institutions. Private institutions are financed mainly by tuition fee income, supplemented in some cases by considerable donor funding. Government supports polytechnics financially by means of soft loans of US\$250,000 each. These are awarded on the basis of applications which demonstrate innovation. In addition, a scholarship fund provides financial aid to students who are free to attend an institution of their choice. In terms of fields of study, the polytechnics offer a mix of technological and non-technological vocational programs, with the emphasis on the latter. Some are single purpose and others are multipurpose institutions.

Regarding qualification levels, the polytechnics generally offer degree programs in addition to certificate and diploma qualifications, with one of them providing an MBA as well. The predominant focus is on teaching (up to 80 percent), although some polytechnics are attempting to increase research activities. Government encourages these institutions to address local development concerns, particularly in rural locations.

With respect to reputation, the polytechnics enjoy significant status and prestige, as entrance to both universities and polytechnics is dependent upon the completion of 12 years of schooling. While popular aspirations are still directed towards attending university, polytechnics are increasingly perceived to provide greater immediate access to employment.

A single stakeholder association of university and polytechnic rectors exists. Its role in policy-making is to discuss policy developments and lobby on behalf of its constituency.

Systemic Characteristics

The role and mission of Mozambican universities follow the traditional focus on a theoretical and formative curriculum. While the non-university institutions emphasize vocational, career-oriented programs, they also provide some theoretical content, especially in professional institutes such as the Institute for International Relations.

Academic drift is apparent from the non-university sector towards the universities, but not the other way around. This presents problems for the clear classification of university and non-university polytechnic-type institutions. Government is therefore concerned to maintain the *binary divide through regulation*.

Current government policy is to encourage differentiation, especially with regard to the public polytechnics located in the provinces, whose mission is to address local development priorities and to increase employment opportunities through career-oriented programs.

Despite an overall emphasis on internal and external efficiency, one of the strategic goals of government, as stated in its *Strategic Plan of Higher Education in Mozambique 2000–2010*, is to diversify institutions, training opportunities and forms of delivery. To achieve the main objectives of the plan, a key guiding principle is to encourage “diversity and flexibility of institutions, courses, curricula and methods of delivery, to ensure responsiveness to changing social, cultural and economic demands” (Ministry of Higher Education, Science and Technology 2000).

Two elements of the Strategic Plan generate a need for differentiation and articulation. These are the aims (a) to increase equity by expanding opportunities of access to higher education to meet the variety of labor market and social needs; and (b) to respond to the changing economic, social, cultural and technological needs arising from the country's rich diversity of linguistic and ethnic groups and from the rapidly developing market economy.

The Strategic Plan recognizes that the expansion of higher education implies institutional differentiation. Accordingly, it "is necessary to define other types and forms of higher education institutions, such as higher institutes, polytechnics, and higher schools, amongst others." Likewise, the Plan identifies one aspect of the role of the State in the expansion and development of higher education as "promoting the articulation between higher education institutions and research institutes, amongst others" (Ministry of Higher Education, Science and Technology 2000).

To achieve the goal of expanding higher education physically and geographically, the government aims to "create new public higher education institutions or branches/extension campuses of existing higher education institution's in the provinces where they do not exist" (Ministry of Higher Education, Science and Technology 2000). In addition, it aims to encourage the creation of new private tertiary institutions.

Specifically, the Plan outlines two goals regarding differentiation:

1. To develop a diversified system of public and private higher education. To achieve this, the following strategic actions to be undertaken:
 - f) To encourage the development of new public and private institutions within a general frame of the higher education sub-system to be established, privileging the links between them and the existing technical-professional schools, with support of the existing higher education institutions;
 - g) To consolidate existing institutions, taking into account the experience, the resources and the opportunities of the scale economy;
 - h) To make an inventory of opportunities, resources, and use or re-conversion of the existing infrastructures to implant and develop tertiary institutions or their branches in the provinces, without jeopardizing the activities of the other educational levels.
2. To encourage innovation and diversity in training opportunities in higher education. The strategic actions are:
 - a) To promote a greater variety in the length of courses through introduction of courses with diploma, bachelor and master levels;
 - b) To increase flexibility in higher education programs, to ease the students' choice and the adjustment of studies to their aspirations in terms of career and job opportunities.

To achieve these aims, the following prior requirements are identified:

- Develop flexible and quick mechanisms of curricular reform, definition and approval of new courses, etc.;
- Introduce a realistic system of equivalencies between academic credits, courses and qualifications;

- Invest in learning materials, equipment and infrastructures necessary for an effective use of new learning materials;
- Consult with or otherwise involve employers and professional organizations in curricular revisions and reforms, for elaboration of in-job training programs, etc.

The extent to which these policy goals are adopted and successfully implemented remains, of course, to be seen. Differentiation and articulation are notably central elements of the program of higher education reform as stated in the Strategic Plan. Within this, decentralization and the role of private higher education institutions are pivotal.

Articulation and Interface between the University and Polytechnic Sectors

Generally, relations between the university and polytechnic sectors in Mozambique are regarded as complementary. However, a competitive element is evident as institutions chase market shares of student enrollments.

Articulation currently depends on initiatives by the individual institutions, but government is in the process of developing a credit accumulation and transfer scheme (CATS) in order to ensure student mobility between the two sectors. It is intended that by 2006, a national CATS will be in place. At present, some polytechnic qualifications are not recognized by universities.

In present practice, it appears that articulation is currently not occurring to any great extent. One exception is that students obtain a 3- or 4-year polytechnic qualification and then transfer to what are perceived to be more prestigious university institutions in order to obtain a subsequent degree qualification.

No general formal co-operative exchange agreements exist between the sectors apart from one arrangement between the Pedagogical University and a private polytechnic.

Conclusion: Principal Challenges and Concerns

Mozambique is in the process of rapid growth and development as part of the socio-economic reconstruction of the nation following years of colonial rule and a devastating civil conflict. Higher education has a key role to play in this. A major contribution expected from higher education is the simultaneous expansion and differentiation of the system to meet both social and economic development needs. In doing so, a key challenge is the decentralization of higher education provision to offset the heavy concentration of resources and activities in the capital and larger cities, and to offer broader public access to a range of institutions and programs that will foster local and regional social and economic development. Decentralization and differentiation are thus closely linked.

The principal concern of government relating to institutional and program differentiation is to ensure educational quality. This is particularly so in the light of the rapid expansion of the polytechnics and the pressing practical development priorities prevalent in rural locations. The formal provision of higher education programs in the regions is one

thing. Ensuring that they produce sufficiently high quality graduate outputs, research and community outreach activities to contribute effectively to regional development is quite a separate undertaking. The major constraint in all this is the limited availability of both financial and human resources, the latter especially in view of the difficulty of attracting teaching staff to the provinces.

Clearly the provision of a differentiated range of programs and the establishment of a differentiated array of institutions is central to the development strategy for higher education in Mozambique, and to their contribution to national development priorities.

Nigeria

Population		131,530,000
Tertiary graduates per 100,000		981
Tertiary gross enrollment ratio		8.1%
Public universities	<i>Number:</i>	50
	<i>Enrollments:</i>	384,000
Private universities	<i>Number:</i>	23
	<i>Enrollments:</i>	60,000
Public polytechnics and professional institutes	<i>Number:</i>	97
	<i>Enrollments:</i>	382,206
Private polytechnics and professional institutes	<i>Number:</i>	11
	<i>Enrollments:</i>	3,600
Public post-secondary colleges	<i>Number:</i>	63
	<i>Enrollments:</i>	114,500
Private post-secondary colleges	<i>Number:</i>	9
	<i>Enrollments:</i>	NA
Open university	<i>Enrollments:</i>	32,000
National oversight body		National Universities Commission (1974)
		National Board for Technical Education (1977)
		National Commission for Colleges of Education (1977)
National quality assurance agency		[same]
National qualifications framework		National Business and Technical Education Board
Comprehensive legislation	<i>[date]</i>	National Policy on Education (1998)

Source: World Bank (2006); Darvas (2007).

Background

Nigeria is a big country, in every sense of the word. The land area is 923,768 square kilometers with a coastline of 850 kilometers and national borders to the West, North and East running at about 4,000 kilometers. The country is neighbored on the West by the Republic of Benin and on the East by Cameroon, with Chad and Niger sharing the northern boundary line. With an estimated population of more than 130 million people, Nigeria is by far the most populous country in Africa, and has the largest concentration of black people anywhere in the world. In fact, one in five Africans is a Nigerian.

Nigeria is a major oil exporting country, with crude oil accounting for 96 percent of its foreign exchange earnings. The majority of the population is engaged in agriculture, which accounts for about 70 percent of the labor force, compared with the share of industry at 10 percent and the services sector at 20 percent. However, in terms of contribution to GDP, the ratios are: agriculture 45 percent, industry 20 percent and the services 35 percent. Although Nigeria is a rich country, the GDP per capita is estimated at only US\$900 in 2002 because of its huge population.

Formal education is based on the 6-3-3-4 system: 6 years of primary school; 3 years of junior secondary school; 3 years of senior secondary school, and 4 years of university education leading to a first degree. The literacy rate is 57 percent. Some 47 percent of the population are below 15 years, indicating the enormous pressure on the primary and secondary school systems. Annual primary school and secondary school enrollments are over 3.5 million and 1.5 million, respectively.

Nigeria operates a federal system of government comprised of 36 state governments and a central government. The country gained independence from Britain in 1960. It subsequently experienced a painful civil war in the late 1960s, the scars of which are yet to heal completely. After a peaceful transition from military to democratic rule in 1999, the current President, Olusegun Obasanjo, was re-elected to a second-term of office in 2003.

Nigeria is a strong regional economic power. This makes it a major political and military player in Africa. The country's capital, Abuja, hosts the headquarters of the Economic Community of West African States, ECOWAS. President Obasanjo is a principal architect and strong advocate of the New Partnership for Africa's Development, NEPAD, an organization that seeks to engineer a common strategy for Africa's economic growth. On the domestic front, President Obasanjo has formulated a National Economic Empowerment and Development Strategy (NEEDS) to grow the Nigerian economy.

The Higher Education Sector

The higher education system in Nigeria is large and complex, rivaled in size by only South Africa. The system displays considerable diversity, thereby defying the binary division found within most of the systems reviewed in this study. However, it retains certain binary characteristics in the sense that universities award primarily degrees, while the other higher education institutions award only diplomas and certificates. However, this binary distinction is beginning to disappear because some polytechnics have been legally authorized to award degrees. The system displays little articulation between university and non-university institutions.

At the time of independence in 1960, the only university institution in Nigeria was the University College in Ibadan. It was established in 1948 by the colonial authorities and awarded its degrees jointly with the University of London. The University of Ghana was established at the same time (known then as the University of the Gold Coast) under similar conditions. Ghana and Nigeria share a lot of similarities in the organization of their higher education systems. This is perhaps not surprising, since both countries inherited at independence the educational system and structure of their common colonial power, Great Britain. Yet, significant differences can be observed as well. The first is the size of their respective tertiary education systems. In terms of number of institutions, Nigeria has the largest higher education system in Sub-Saharan Africa. In 2005, Nigeria had a total of 73 public and private universities and 51 polytechnics, seven of which are private. This compares with Ghana's seven public universities, nine private university colleges and ten public polytechnics. Ghana has no private polytechnic. Total enrollments, not counting students in the colleges of education, are about 1,035,000 for Nigeria and only 95,000 for Ghana. However, these figures should be set against the population figures for both countries and their tertiary enrollment ratios. Ghana's population of 21 million is only about 15 percent of Nigeria's estimated population of 130 million. The tertiary enrollment ratio for people in the age group of 18–25 years is nearly 6 percent for Nigeria and 3 percent for Ghana.

Components of the Higher Education System

Apart from its size and numbers, the higher education system in Nigeria is very diverse. The system consists mainly of the universities, polytechnics and "monotechnics," colleges of education and advanced teachers' colleges. In addition, about 100 schools of nursing and other professional training institutions enroll an estimated student population of 120,000 (Isyaku 2000). The duration of study programs varies from two years in the case of the National Diploma and the Higher National Diploma in the polytechnics, to three years in the case of the teacher education programs in the colleges of education, and to four years in the case of bachelor's degree programs in the universities. As will be shown later, very little articulation exists between the university and non-university tracks. Consequently opportunities are rare for vertical or horizontal movement among them by students.

Of the 73 universities in Nigeria, 50 are public and owned by the federal or state governments, while 23 are privately owned. According to Prof. Peter Okebukola, Executive Secretary of the National Universities Commission (NUC), the total university enrollment in 2004 was 735,000, out of which the private universities account for about 60,000 (8 percent). Seven of the 51 polytechnics are privately owned while the federal government operates 17 and the state governments manage another 27 (Jibril 2003). The polytechnics enrolled about 300,000 students in 2004. The federal and state governments also own other specialized technical colleges (called "monotechnics") that have much lower enrollment figures. In terms of the total tertiary student population, the university sub-sector accounts for about 58 percent compared with only 28 percent for the polytechnics and 14 percent for the colleges of education. In terms of institutional numbers, private participation in tertiary education in Nigeria is 31 percent for the universities and 14 percent for the polytechnics. In terms of enrollments, however, the percentages are far less because of the

tuition fees the private tertiary institutions charge and the fact that they are yet to build academic reputations comparable to those of the older and better-resourced public institutions. Although nearly one third of Nigerian universities are privately owned, they account for only 8 percent of the total university enrollment.

The polytechnics in Nigeria offer two-year postsecondary courses leading to the award of National Diploma (ND) certificates in various disciplines, including engineering, marketing, accounting, secretarial studies, printing technology, architecture, fashion design, and hospitality management. Holders of ND certificates who have had at least a year's working experience may enroll for a further 2 years of study to obtain a Higher National Diploma (HND) certificate, normally in the same discipline. Some polytechnics also offer one-year post-HND programs leading to the award of what they call "Full Professional Diploma" that qualifies successful graduates for membership registration with the relevant professional bodies.

At the moment, the polytechnics do not award their own degrees, although some (notably, Kaduna Polytechnic and Yaba College of Technology) award technology education degrees in affiliation with two universities. The Kaduna Polytechnic runs B.Ed. (Technology) degree programs in areas such as Automobile Technology, Building Technology, Electrical/ Electronics Technology, Metal Work and Wood Work Technology in affiliation with the Federal University of Technology, Minna. The Kaduna Polytechnic also offers a two-year post-HND program, which qualifies graduates to study for master's degrees in some universities and is recognized by the Council for Regulation of Engineering in Nigeria (COREN). The Yaba College of Technology offers B.Ed degree programs in Business Education, Industrial Technical Education, and Science Education in affiliation with the University of Nigeria, Nsukka.

Relationship between Universities and Polytechnics

Reports indicate that the polytechnics have not been entirely satisfied with the existing affiliation arrangements where, in practice, all teaching and learning activities for the degree programs take place in the polytechnics, polytechnic lecturers teach and supervise the students, conduct tutorials, set examination questions and mark the examinations. The mentor universities only monitor the exam questions and students' answer scripts, issue academic transcripts and award the degrees under their seal. For this, the affiliated polytechnic is expected to pay the mentor university affiliation fees in the order of 200,000 Naira (about \$1500), an amount that some consider excessive. The polytechnics consider this type of affiliation, which they claim relegates them to a subordinate position, downgrading and a mild assault on their prestige.

In order to address the issue of degree studies in the polytechnics, the Federal Ministry of Education appointed a committee in 1999 to look into the modalities for mounting degree programs in selected polytechnics (Federal Republic of Nigeria 1999). The committee recommended that the polytechnics that have the requisite academic facilities and appropriately qualified staff should be granted autonomy to award their own degrees in engineering, science and technology based programs. In the opinion of the committee, empowering the polytechnics to award degrees will enhance the quality of students entering the polytechnics, attract and retain qualified staff in the polytechnics, and generally

enhance the image of the polytechnics as tertiary institutions. The polytechnics are yet to start awarding their own degrees, although there is movement in this direction.

Articulation and Mobility

Very little formalized academic interaction occurs between the universities and polytechnics. University teachers do accept part-time appointments in the polytechnics, but credits earned at the polytechnic are not directly transferable to the universities. Interestingly, some of the newer universities of technology make use of the academic facilities of neighboring better-endowed polytechnics for training their students. On the whole, the relationship between the universities and polytechnics can be described as non-cooperative. The polytechnics resent what they perceive as a subordinate status in the higher education system, where the university is regarded as the apex institution. The polytechnics also bemoan the lack of opportunities for academic progression for polytechnic graduates beyond the HND level, and the general perception that the HND qualification is inferior to the university degree.

In an attempt to improve articulation between the two main systems within the tertiary education sector and provide an avenue for academic progression for polytechnic graduates, the National Implementation Committee on Higher Education recommended several years ago that the universities should mount one-year bridging programs for suitable HND holders to qualify them for master's degree programs in the universities (Federal Republic of Nigeria 1999). The universities have been reluctant to implement this recommendation, and the reasons for non-compliance are not difficult to find. Universities take pride in their autonomy and strongly detest outside interference in their affairs—especially government directives seen to threaten their academic freedom. Additionally, the universities do not offer advanced courses in program areas such as fashion, catering and hotel management, which are among the most popular courses run in the polytechnics. Furthermore, bridging programs that ostensibly subordinate the polytechnics to the universities could engender or accentuate perceptions of inferiority. In effect, unless the two sub-systems are functionally integrated, a unitary higher education system that merely places the university at the top of the educational pyramid has the potential of depressing morale and academic growth in the non-university sub-sector.

Supervision and Governance

In Nigeria, three separate supervisory bodies share oversight responsibilities for the higher education system. These are the National Universities Commission (NUC) for the universities, the National Board for Technical Education (NBTE) for the polytechnics, and the National Commission for Colleges of Education (NCCE) for the colleges of education. These agencies are responsible for quality assurance and accreditation of programs of study, and the allocation of federal government funds to the institutions under their supervision. State-owned universities and polytechnics are funded mainly by the state governments, and are less insulated from direct interference by the state ministries of education, which have oversight responsibility for the institutions. The supervisory and accreditation functions of the NUC and the NBTE extend to the private universities and polytechnics as

well, and both agencies are known to have caused the closure of some sub-standard institutions in the past. Perhaps in recognition of its increasing influence and similarity of roles with the NUC, the NBTE is seeking a name change to the National Polytechnics Commission (NPC). The reputation of the NUC as the national quality assurance agency in higher education has been bolstered by the disclosure that out of the 145 applications it received for recognition as private universities between 1996 and 2002, only 23 were able to meet the criteria for operation set by the NUC.

The governance and management structures for both the universities and polytechnics are similar, with governing councils at the apex of the governance structure. The councils are appointed by the proprietor government (federal or state), and include representation from the main interest groups and worker unions in the institution as well as prominent persons external to the institution. The councils play an important role in the governance of the institutions and in the appointment or selection of the vice chancellor for the university or rector for the polytechnic. As is the culture in the higher institutions of Anglophone Africa, internal management of Nigerian universities and polytechnics is based on the committee system of administration, which is highly participatory but prone to long delays in decision-making and an inability to take urgent actions, leading invariably to management rigidities.

Research

Research does not appear to be a significant activity in the polytechnics. The polytechnics are perceived mainly as applied learning and training institutions in the fields of technology, applied science, commerce, and management. Their emphasis has therefore been on the training of graduates for the world of work. Recently, this career-focused orientation of the polytechnics has been undergoing some strain and rethinking, as a result of the limits to career progression of HND graduates in the public service and the obstacles that HND holders face in applying for membership in the professions or in obtaining recognition as professionals. These frustrations are in part responsible for the persistent calls for the polytechnics to be allowed to offer their own degrees.

In the universities, members of academic staff are required to carry out research and publish their research findings as one of their core duties and a necessary condition for promotion. One would therefore expect research activities to be more actively pursued in the universities. Unfortunately, inadequate funding, poor management of research funds, lack of research infrastructure, and inability of the institutions to develop research links with industry have resulted in a preponderance of basic or fundamental research that may be published but does not directly contribute to immediate economic growth or productivity increases. Compared with other countries in West Africa, however, research output from Nigerian universities (in terms of the number of research publications) is high.

Funding

Funding for both federal and state owned universities is at about the same level for the universities in Ghana; the federal polytechnics, however, are better funded than their counterparts in Ghana. In 2000, the federal government expenditure per student on a university student was \$932 and that for the polytechnics was \$777, compared with only \$300 for the

polytechnics in Ghana. Although the figures for state owned institutions are not available, it is known that state governments generally fund their institutions at much lower levels (Jibril 2003). With such low levels of funding, it is difficult to see how the institutions can attain and maintain international standards of quality in their course offerings. It should be noted that the Nigerian government's subvention to the tertiary education sector is 35 percent of the national education budget, although this proportion is not directly comparable with other countries since Nigeria's federal structure delegates all funding responsibility for primary education, as well as some aspects of secondary education, to the state governments. These subventions are not included in the federal education budget.

Rwanda

Population		9,038,000
Tertiary graduates per 100,000		279
Tertiary gross enrollment ratio		2.0%
Public universities	<i>Number:</i>	2
	<i>Enrollments:</i>	9,491
Private universities	<i>Number:</i>	6
	<i>Enrollments:</i>	13,538
Public polytechnics and professional institutes	<i>Number:</i>	4
	<i>Enrollments:</i>	5,000
Private polytechnics and professional institutes	<i>Number:</i>	4
	<i>Enrollments:</i>	
Public post-secondary colleges	<i>Number:</i>	4
	<i>Enrollments:</i>	900
Private post-secondary colleges	<i>Number:</i>	4
	<i>Enrollments:</i>	577
Open university	<i>Enrollments:</i>	0
National oversight body		National Commission for Higher Education (2006)
National quality assurance agency		[same]
National qualifications framework	<i>[date]</i>	<i>[name]</i>
Comprehensive legislation		Governing the Organization and Functioning of Higher Education, Law No. 20 (2005)

Source: Mazimhaka and Daniel (2003); Rwanda Development Gateway, data for 2004/2005; Darvas (2007).

Background

Rwanda is a very small landlocked country of only 26,338 square kilometers. The national boundaries have remained essentially unchanged since they were drawn by the European colonial powers in 1910. The country became independent in 1962.

Rwanda is one of the most densely populated countries in Africa with an average population density of 275 people per square kilometer. Rwanda's demographic profile, however, was seriously affected by the 1994 genocide. Up to one million of the country's estimated 7.6 million inhabitants were killed and another two million forced to flee. Since then, further large-scale population dislocations have taken place. Nearly two million refugees have returned, including 700,000 "old refugees" from Uganda and Burundi. Some 220,000 orphans have either joined, or are seeking to join, other families. And at least 110,000 people are in prison on suspicion of contributing to the genocide.

Rwanda is a low-income country with a per capita GDP of US\$230. With one of the lowest urbanization rates in Africa and only 8 percent of the population living in towns, the majority of Rwandans are subsistence farmers. Agriculture contributes 41 percent of the GDP, industry 21 percent, and services 38 percent. With economic aid from the international community, tea and coffee are being rehabilitated and have reached pre-1994 production levels. Coffee is Rwanda's main export, accounting for 60 percent of the country's foreign exchange earnings, followed by tea, which accounts for about 30 percent. Rwanda has a small industrial sector that employs about 3 percent of the population.

In efforts to improve its economy, Rwanda has joined three different regional trade organizations: the Common Market for Eastern and Southern Africa (COMESA), the *Communauté Economique des États de l'Afrique* (CEEAC), and the *Communauté Economique des Pays des Grands Lacs* (CEPGL). The country has also made a bid to join the East African Community (EAC).

Previously, Rwanda had used the dominant national language of Kinyarwanda as the medium of instruction in the primary schools and French as the medium of instruction from the secondary school level and beyond as well as the "official" language. This has now changed. Rwanda has introduced English as both a medium of instruction and a second official language alongside French, now that the country is preparing to join the East African Community.

The Higher Education System

The civil war of 1990–1994 destroyed much of the educational infrastructure in Rwanda. Ten years after the 1994 genocide, Rwanda's devastated education system is slowly getting back on its feet. Classrooms have been repaired and new ones built. Teachers who fled the mayhem have been reintegrated into the teaching force. Teachers' salary arrears have been cleared. A Genocide Fund has been created specifically to assist orphans. The higher education system has been diversified through the creation of more institutes of technology in addition to the revival of the Kigali Institute of Science, Technology and Management (KIST) as a degree-granting institution, and new arrangements for student finance at the tertiary level have been introduced.

The education system has the following structure. The first cycle of education takes nine compulsory years, followed by a second cycle of six years in secondary school.

Kinyarwanda has been the medium of instruction in the lower grades, but in order to accommodate students from other countries in East Africa, especially Uganda, the government has introduced English to supplement French as the language of instruction. Some allowance is also made for the use of Swahili, particularly in examinations.

The history of tertiary education in Rwanda dates back to *Le Grand Seminaire*, a diploma-awarding tertiary education institution for males training for priesthood, which has been in existence since 1936. It focused on just a single discipline: Theology.

Rwanda does not have the equivalent of national polytechnics of the Kenyan type. But it does have eight lower level polytechnic-type institutions. Four of these are government-sponsored and the other four are privately owned (three by religious organizations). The KIST is the only institution in the country that offers high-level technical education.

Currently, the country has six public higher education institutions and six private ones. The public higher education institutions are the National University of Rwanda (NUR); the Kigali Institute of Science, Technology and Management (KIST); the School of Finance and Banking (Masters degree only); the Kigali Institute of Education; the Kigali Health Institute (diploma only); and the Isaie Institute of Agriculture and Livestock (diploma only). In addition, the Rwanda Institute of Administration and Management offers short courses to civil servants. The private universities are small liberal arts institutions, notably the *Université Libre de Kigali* and *Université Adventiste des Grands Lacs*.

The National University can be classified as a traditional university, whereas KIST is a good example of a polytechnic-type institution that houses degree programs. KIST offers engineering, architecture & building technology, business administration, and food science & technology. KIST follows a modularized program in which a student can exit at, for example, the diploma level and come back later to continue with the degree studies. Both the National University and KIST were closed in 1994 as the result of civil strife, but reopened three years later in 1997. The degree-granting institutions have a total enrollment of approximately 7,000 while the other small polytechnic-type institutions have an enrollment of approximately 5,000. Overall, total enrollment is quite small.

The higher education system in Rwanda shows some elements of horizontal differentiation, as indicated in the missions of the six public higher education institutions. The National University of Rwanda aspires to become a traditional comprehensive university, while the other higher education institutions are intended to become specialized institutions. Thus, even more so than the other countries in the region, universities and other lower level institutions are highly differentiated with the polytechnic-type institutions concentrating on vocational training. The system also displays aspects of articulation. Notably, institutional isomorphism is not evident in Rwanda.

Differentiation and Articulation

Higher education institutions in Rwanda are clearly differentiated with regard to their missions and mandates. The National University is a traditional university. The KIST is a technical university, not only in name, but also in the technical nature of its curriculum. The Kigali Institute of Education (KIE) trains graduate teachers. The others (the School of Finance and Banking, the Kigali Health Institute, and the Isaie Institute of Agriculture and Livestock), as their names imply, each have their own specialized mandate.

The higher education institutions are also differentiated from the polytechnic-type institutions primarily because Rwanda does not have the middle-level equivalents of national polytechnics found in other countries. Therefore, a large academic gap exists between the higher education institutions and the low-level “polytechnic-type” vocational institutions. This difference is reflected in all aspects, including admission requirements, and the final qualifications offered. A certain amount of articulation exists between the National University of Rwanda and the Institutes of Technology. For example, the National University of Rwanda (NUR), through its Extension Study Centre, admits institute-trained students to continue with higher education. KIST also admits similar lower-level graduates into its modularized program. In general, very limited student mobility occurs between one type of institution and another. This is due in part to the low levels of unemployment in the country, which give the youth a lower motivation to pursue higher education in light of the relatively strong incentives offered by the labor market. Currently, Rwanda imports technical experts from as far as Kenya, especially in the teaching profession. The labor market demands in Rwanda seem to point to the need to create more middle-level and differentiated polytechnic-type higher education institutions as signified by the numerous job opportunities for technicians with good practical skills.

Main Challenges and Conclusions

In 2006 Rwanda put in place a national higher education statute that provides for the creation of a system oversight body for higher education. Thus, the country plans to create a National Commission for Higher Education in the near future.

It is noteworthy that the two leading higher education providers, the National University of Rwanda (NUR) and the KIST, are the product of different historical perspectives and traditions: one French (NUR) and one English (KIST). Thus, for example, NUR’s language of instruction is French while that of KIST is English. This difference is reflected in other educational institutions as well.

Both differentiation and articulation within Rwanda’s higher education system must be viewed in the interrelated context of the history of the country, the state of the entire educational system, and the state of the economy in general. The history of the country has been one of institutional disruption and destruction. Not surprisingly, the educational system is underdeveloped in many ways, even by African standards. Viewed in this context, it is an impressive achievement that a functional higher education system is not only in existence, but that some institutions are performing remarkably well—albeit with a great deal of donor support (which has been aggressively sought by government leaders).

Senegal

Population		11,658,000
Tertiary graduates per 100,000		448
Tertiary gross enrollment ratio		3.6%
Public universities	<i>Number:</i>	2
	<i>Enrollments:</i>	26,000
Private universities	<i>Number:</i>	3
	<i>Enrollments:</i>	NA
Public polytechnics and professional institutes	<i>Number:</i>	15
	<i>Enrollments:</i>	1,000
Private polytechnics and professional institutes	<i>Number:</i>	44
	<i>Enrollments:</i>	6,000
Public post-secondary colleges	<i>Number:</i>	NA
	<i>Enrollments:</i>	
Private post-secondary colleges	<i>Number:</i>	NA
	<i>Enrollments:</i>	
Open university	<i>Enrollments:</i>	0
National oversight body		None (apart from Ministry of Higher Education)
National quality assurance agency		CAMES, regional body (1968)
National qualifications framework	<i>[date]</i>	<i>[name]</i>
Comprehensive legislation		21 accepted recommendations of the National Consultation on Higher Education (1993)

Source: Ndiaye (2003).

Background

Geographically, Senegal is situated at the most western point of Africa. It has an Atlantic Ocean coastline of about 500 km, and a surface area of 196,722 km². The total population in 2005 is estimated at 10.8 million (up from 9.8 million in 2001), a quarter of which live in the metropolitan capital of Dakar. Senegal's population growth rate is 2.8 percent, 58 percent of the population are below 20 years of age, and 55.7 percent are in school. In 2003, the number of final year students in secondary school was 21,198 with a gender ratio of nearly 2:1 in favor of boys (Ministry of Education 2003). With more than twenty ethnic groups and languages, it is understandable that the official language is French. French is also the language of instruction in schools.

Independent since 1960, Senegal is one of the more functional multi-party democracies in Africa. The current President, Mr. Abdoulaye Wade, was democratically elected in 2000 for a five-year term, and is one of the principal architects of NEPAD, the New Partnership for Africa's Development. Although 94 percent of the population are Moslems, Senegal is a secular state. The country has developed an ambitious poverty reduction strategy plan that integrates into the vision of NEPAD and the country's five-year (2002–07) Economic and Social Development Plan. The success of the poverty reduction strategy is premised on achieving an annual economic growth rate of 7–8 percent that is necessary for sustainable wealth and employment creation. The main objectives of the strategy are to double the per capita income, strengthen the country's human resource base, and achieve gender equality in primary and secondary school enrollments by the year 2015.

Agriculture remains one of the most important sectors of the economy, employing more than 60 percent of the active population. Senegal's major agricultural products are cereals, cotton, peanuts and peanut products. Three large rivers, the River Senegal (1700 km long), the River Gambia (750 km), and the Casamance River (300 km) flow through the country. For this reason, fishing is another vibrant sector of economic activity. The agricultural sector is also the largest contributor to the country's GDP at about 10 percent. The GDP per capita is US\$1600.

The Higher Education Sector

Higher education in Senegal dates from 1957 with the creation of the country's first institution of higher learning, the University of Dakar (now the Cheikh Anta Diop University) with an initial enrollment of 575 students. In 1968, the Advanced Polytechnic School (*Ecole Supérieur Polytechnique*—ESP) was established as part of the University, increasing the student population to about 3000. The higher education system in Senegal is fairly small. The system is currently made up of two public universities, the Cheikh Anta Diop University (UCAD) located in the capital of Dakar, and the Gaston Berger University (UGB) located in northern city of St. Louis); 15 National Advanced Professional Schools; a number of teaching and research institutes that are attached to the universities; and forty-seven private institutions, three of which are universities. Senegal is also host to some specialized regional tertiary programs, a campus of Suffolk University (Boston, USA), a campus of the African Virtual University, and a campus of the Francophone Virtual University. The system is therefore diversified rather than binary in that it consists of two parallel degree granting

types of institutions and specialized schools or colleges. The parallel institutional types provide a measure of differentiation and also show evidence of some articulation between them. The different types of institutions are:

- Multi-faculty universities that offer diverse *degree level* general knowledge and specialized courses up to the doctorate;
- Advanced professional schools or *grandes ecoles* that offer specialized, *degree-level*, high technology and business-related courses and programs that are geared towards a specific technical occupation or profession; and
- Specialized schools or colleges that offer short, *sub-degree career-focused* vocational courses related to a specific profession.

Organization of the Higher Education System

As is the case for almost all Francophone countries in Africa, the higher education system in Senegal is modeled on its parent system in France. Like the French system, it is closely piloted and regulated by the State. In spite of its mix of higher institutions and program offerings, the system can effectively be divided into two components: the university sector and the non-university sector. However, unlike the system in Anglophone West Africa, some of the most prestigious institutions (the *grandes ecoles*) operate within the *non-university sector*. Generally speaking, the central government, through the ministry responsible for higher education, controls the higher education system. The programs of study in public universities are approved and accredited by the State and the institutions deliver nationally recognized degrees. In most cases, university teachers and workers are considered to be civil servants and their salaries are paid directly by the State rather than the university. Understandably, hiring and promotion of staff are governed by rules and criteria developed at both the national level and the regional level through the *Conseil Africain et Malgache pour l'Enseignement Supérieur*—CAMES (African and Malagasy Council for Higher Education). This limits the capacity of institutional management to directly manage its academic staff.

The basic academic requirement for entering the higher education system is the *baccalaureate* or high school leaving certificate. Normally, the *baccalaureate* alone is sufficient for admission into the university. Admission into the advanced professional schools or *grandes ecoles* is very competitive and candidates, in addition to holding a *baccalaureate*, must go through a rigorous selection process, which often includes a two-year preparatory course and a special entrance examination or aptitude test.

The university system in Senegal is organized in three cycles. The first cycle is of three years duration and leads to the award of a *Licence* or first degree; the second cycle consists of a further two years of study for a *Maitrise* or master's degree; the first year of the third cycle is spent studying for a *Diplome d'Etudes Approfondies* or DEA which is a preparatory certificate for the three-year doctoral (PhD) program that fills out the tertiary education cycle.

With regard to enrollments, the universities tend to admit many more students than the Advanced Professional Schools. This may be due to the fact that admission into the professional schools is highly competitive and limited to available places, mainly for reasons of quality assurance. Sometimes, however, intake is deliberately kept low to reinforce the

traditional elite reputation and prestige of these institutions. During the 2000/01 academic year, enrollment in the two public universities totaled some 26,000 students compared with only about 1000 for the Advanced Professional Schools. Female enrollment in the universities is low at around 25 percent, and even lower (about 13 percent) in science and technology based programs.

The Cheik Anta Diop University (UCAD) is by far the most popular higher education institution in Senegal. As many as 75 percent of high school graduates seek admission to UCSD, compared with only 14 percent who apply to the other public university, UGB. On the whole, the Advanced Engineering and Professional Schools have a much better graduation or success rate of 84 percent, compared with only about 40 percent for the universities.

Articulation and Mobility

The first two years of university studies is *multidisciplinary* and oriented towards the acquisition of basic knowledge in either the sciences or the humanities. At the end of the two years, successful students may opt to continue for one additional year to obtain a bachelor's degree or take a competitive selection examination to enter an Advanced Professional Engineering School (a *Grande Ecole*) for three years in order to qualify as an engineer.

Alternatively, holders of the *baccalaureate* certificate may enter an advanced college of technology for two years' study leading to the award of a University Diploma in Technology or DUT. The DUT certificate is in many respects similar to the Higher National Diploma (HND) qualification offered in Anglophone African countries. Like the HND, the DUT is a vocationally oriented qualification for the world of work in essentially the production, technology and service sectors. However, it is important to note that, in contrast to the situation in English-speaking Africa, the DUT is a university diploma and the colleges that offer this qualification are affiliate units or institutes of a parent university. Holders of the DUT may, on passing a very competitive and rigorous entrance examination, be admitted to a *Grande Ecole* or the Advanced Polytechnic School in Dakar or Thiés to study for a higher qualification or degree in the same discipline.

It is evident, therefore, that in spite of the diversity in course offerings, qualifications and admission requirements, articulation within the higher education system in Senegal has clearly defined pathways for academic progression and mobility of students. Recognition of prior learning and formalized credit transfers across institutions are two of the unique and important features of the Senegalese higher education system.

The minimum qualification for appointment to a teaching position in the higher education sector is a terminal research degree. Until recently, 3rd cycle doctorate degree holders were also required to possess a *Doctorat d'Etat* degree, which is the highest research qualification in the higher education system, in order to aspire to a professorship at the university. Over 1000 research professors are employed in Senegal. Unlike the situation in Anglophone West Africa, these professors teach at both the degree and sub-degree levels. The quality of teaching is, therefore, considered to be the same throughout the higher education system. The African and Malagasy Council for Higher Education (CAMES) is a regional umbrella body that evaluates the quality of research output of staff and advises on staff promotions and rankings. CAMES, in this way, contributes to the ease of mobility of teaching faculty within the francophone higher education zone in Africa.

Private Tertiary Institutions

Private provision of higher education in Senegal is rapidly increasing and becoming more diversified. From 41 private tertiary institutions with a combined enrollment of 6000 in 2001 (Ndiaye 2003), the number of institutions has grown to 47, including three universities and several degree awarding institutions. Some of these institutions include the Dakar Bourguiba University, the Institut Africain de Management (IAM), the Institut Universitaire Professionnel (IUP), and the Elhadji Ibrahima Niassé University, which has a recognized medical school. The Dakar Bourguiba University offers degree courses in mathematics, economics, and law, while the IUP has diploma and degree programs in marketing, international business, finance and management. Interestingly, some of the private institutions are offering typical Anglo-Saxon degree qualifications like BBAs (Bachelor of Business Administration) and MBAs. At least one institution has a School of Theology (*Institut Supérieur de Théologie*) that offers Associate and Bachelor of Arts degrees in Theology. The majority of the private establishments, however, offer only diploma or technician-level qualifications and are located in and around the capital of Dakar.

As is common throughout West Africa, the course offerings in the private tertiary institutions are concentrated in computer studies and business-related areas like management, accounting and marketing. This is not surprising, since education and training in science, engineering and technology is expensive and requires huge capital outlays in the form of workshop and laboratory equipment and training materials that private providers of tertiary education may not be able to afford. It is interesting to note that a number of fee-paying training courses in business and technological areas are on offer at the two public universities (UCAD and UGB), mainly at the sub-degree level. The courses offered are normally of two years duration, at the end of which successful candidates are awarded a Higher Diploma in Technology (*Diplôme Supérieur de Technologie–DST*) or a Higher Diploma in Accounting, Marketing, International Business, Human Resource Management or Tourism. The ESP at UCAD offers DST programs in Information Technology, Production Technology and Plant Maintenance, Electrical and Robotic Engineering, Industrial Chemistry, Industrial Refrigeration and Applied Biology. The *Institut Supérieur de Gestion* (ISG), which is the UCAD School of Management, offers similar Higher Diploma programs in marketing, accounting and management. The total number of fee-paying students at UCAD has increased considerably to more than 2000. The equivalent numbers are much lower at UGB, where only 15 students were registered for the fee-paying programs during the 1999 academic year (Ndiaye 2003).

Supervision and Governance

The Ministry of Higher Education and Scientific Research has oversight responsibility for university and non-university institutions in the tertiary education sub-sector, with wide supervisory and regulatory functions that are backed by law and government decrees. However, many National Advanced Professional Training Schools operate under ministries other than that of education. These are specialized schools that train senior personnel for specific sectors in agriculture, health, tourism and the security services. Although the higher education system has since the mid-1990s seen some reforms in the administrative and academic autonomy of the universities, the appointment of the university president is

still the prerogative of the President of the Republic. The internal governance structure of the universities is driven by various academic and administrative committees on which the university president plays a prominent role and workers, teachers unions and students are represented.

Research

Research activity in higher education institutions revolves mainly around undergraduate and graduate student research requirements, with one in ten students engaged in research at the postgraduate level. The research topics cover a wide variety of domains and are geared towards the needs of industry and commerce. The universities can access government funds and subsidies for research under contractual agreements that are tied to performance targets. Applied research or research in partnership with industry is a common feature of the advanced professional schools and other specialized polytechnic-type institutions. As is the case in many African countries, however, research orientation is shifting away from the technological areas because of the dwindling number of students in science and technology-related courses, inadequate funding and an aging faculty.

Funding

Financing of higher education in Senegal is heavily dependent upon the public purse. Public funds accounts for 96 percent of the budget requirements of the various institutions. Out of the 33 percent of the government budget that is allocated to the entire education and training sector, higher education takes 24.7 percent, which is equivalent to 7 percent of the government's entire discretionary budget (Ndiaye 2003). Almost half of this amount is used to underwrite various student welfare entitlements such as meals and accommodations. Student and parental contributions are limited to the purchase of textbooks and personal needs which are estimated at US\$464 per annum.

South Africa

Population		47,432,000
Tertiary graduates per 100,000		1,513
Tertiary gross enrollment ratio		12.4%
Public universities	<i>Number:</i>	23
	<i>Enrollments:</i>	482,595
Private universities	<i>Number:</i>	350
	<i>Enrollments:</i>	25,000
Public polytechnics and professional institutes	<i>Number:</i>	0
	<i>Enrollments:</i>	
Private polytechnics and professional institutes	<i>Number:</i>	0
	<i>Enrollments:</i>	
Public post-secondary colleges	<i>Number:</i>	50
	<i>Enrollments:</i>	377,584
Private post-secondary colleges	<i>Number:</i>	350
	<i>Enrollments:</i>	20,000
Open university/distance educ.	<i>Enrollments:</i>	254,877
National oversight body		Council on Higher Education
National quality assurance agency		Higher Education Quality Committee, within CHE (2001)
National qualifications framework		South African Qualifications Authority Act (1995)
Comprehensive legislation		Higher Education Act (1997) National Plan for Higher Education (2001)

Source: *Education Statistics at a Glance in South Africa in 2005*, Department of Education (2006); Subotzky (2003).

Background⁷

The extreme polarization of South Africa's social order along race⁸ and class lines from the outset of European involvement, together with its relatively advanced, but highly unequal socio-economic development, makes its conditions unique among other African nations with a similar colonial history. South Africa's rich mineral resources, and the rapid (but selective) capital wealth, industrialization and modernization which this generated, shaped the trajectory of its socio-economic and political development and framed its higher education system, particularly its pattern of differentiation and articulation. The complexity of this pattern, and the vigorous debates that surrounded the new post-apartheid higher education policy framework, make South Africa a particularly informative case for purposes of this study.

South Africa has a multiracial and multi-ethnic population of around 45 million, of which approximately 75 percent is black African, 13 percent is white, 9 percent Colored (mixed race) and 3 percent Asian. These population groups have been subject to white domination, racial tension and forms of social, political, cultural and economic segregation since the first white settlement in South Africa in 1652. This began to change in 1994, when the African majority finally won political power.

South Africa's economy is the largest, most diversified, and most developed on the continent. Until the early 20th century, the South African economy was based principally on mining and agriculture. Since then, manufacturing has developed rapidly and is now the leading economic sector. The country has a well developed and globally integrated banking, communications, transport and IT infrastructure. As a result, high-tech service industries have proliferated.

The social order in South Africa was initially shaped not only by the interface between indigenous populations and colonial powers, but also by the clashing interests of British and Afrikaner nationalism. In contrast, colonial domination in other African countries generally involved a single colonial power. In South Africa, competition between the English and Afrikaans cultural, linguistic and nationalistic powers directly shaped the development of its higher education system and, in particular, the proliferation and differentiation of the institutional types which finally emerged (see below for details).

The Higher Education System in South Africa

The education system inherited from the apartheid era was highly unequal along race and gender lines. It is also fragmented, with education and training sharply separated and with a *rigid binary divide* between universities and (polytechnic-type) technikons.⁹ Enrollments

7. The following sections draw largely from Subotzky (2003).

8. Throughout this part of the report, reference is made to race and to the African, Colored (mixed race), Indian and white population groups of South Africa. In the struggle for equity in South Africa, it is necessary to collect and analyse data in these categories in order to identify previous inequities regarding race, and to monitor progress. In no way does this lend credence to the practice of discriminatory racial classification. The collective term "black" includes Africans, Coloreds, and Indians.

9. In this section of the report, the term "technikon" and "polytechnic" are used interchangeably.

in science and non-science fields continue to be distorted. Overall, the higher education system remains rather ineffective in that it generally fails to provide the required number of range of graduate and research outputs to address the needs of the population as a whole and to maintain economic competitiveness in the global arena.

This large and highly variegated institutional higher education landscape is characterized by diverse academic and institutional cultures and by very different student and staff profiles. This differentiation has been shaped by the historical, political and structural conditions surrounding the establishment of the institutions. The roots of the current system can be found in the conflict between British and Afrikaner nationalism and in subsequent apartheid policies. In terms of the former, separate English- and Afrikaans-language institutions were established. In terms of the latter, separate institutions were created to provide for black Africans (and the various ethnic groups within this), coloreds and Indians, alongside those for English- and Afrikaans-speaking whites. Thus, the 36 differentiated institutions reflected the highly unequal multi-cultural and multi-ethnic composition of South African society.¹⁰

The defining characteristic of the current higher education is the large-scale effort towards system-wide transformation which has been undertaken in the post-apartheid era. The policy imperatives driving this process are three-fold. First, the ravaging inequalities with regard to race, gender and locality generated by apartheid need to be redressed systematically. This applies not only to the wide institutional disparities which were the result of the separate but highly unequal apartheid structure, but also to the stark inequalities in student participation and graduation rates and their skewed distribution across fields of study and qualifications levels. Similar inequalities exist in staff qualifications, rank and research outputs. Second, higher education has a key role to play in contributing to the nation's development. This involves a dual policy challenge of positioning the newly democratic nation favorably in the competitive global economy and simultaneously addressing the basic needs of the majority of the population. Third, these goals must be achieved under the prevailing global and local conditions of fiscal constraint and a capped higher education budget—policies that aim at improving both the internal and external efficiency and effectiveness of the system.

Following the approval of key policy documents—namely the report of the National Commission on Higher Education (NCHE) in 1996, the subsequent Green and White Papers on higher education and the passing of the *Higher Education Act* in 1997, and finally the *National Plan for Higher Education* (NPHE) in 2001. This framework is now in place. The present challenge lies in successfully implementing this new policy framework.

The Racially Divided Binary System and Historical Institutional Types

Under apartheid, a system of 36 higher education institutions, comprising 21 universities and 15 polytechnic-type technikons evolved. The system is currently being restructured into 22 institutions: 11 universities, 6 technikons and 6 'comprehensive' institutions that offer a mix of university and technikon programs (see below). In addition, a small but vibrant private higher education sector has emerged.

10. See Subotzky 2003 for a full account.

In 2003, total headcount enrollments were around 717,000. The distribution of enrollments is heavily skewed within the binary divide towards the universities (487,000 or 68 percent), with only 230,000 (32 percent) in the technikons. This is problematic in that the latter provide the vital range of technical skills programs required for development. Part of the reason for this imbalance is reputational. Technikons are less favorably regarded than universities. Thus the prevailing assumption is that academically more able students will attend university and those less able will be absorbed in the “lower” qualifications levels and career-oriented programs offered by the technikons.

The key differentiating institutional feature of the system is the gap between the historically white or “advantaged” universities (HAUs) and technikons on the one hand, and the black or historically “disadvantaged” universities (HDUs) and technikons on the other. The original function of the HAUs was to provide the middle- and high-level human resources for the economic, cultural and civil service sectors of the developed component of South Africa’s dual social structure. These HAUs can be divided into (a) the four English-language ‘liberal’ universities; and (b) the seven Afrikaans-language and dual medium universities.

Under apartheid, the two-fold intended function of the HDUs was firstly to provide personnel for the homelands’ bureaucracies and for the limited professional needs of the black population, and secondly, to ideologically co-opt the emerging black elite middle class in order to legitimate apartheid policies. As a result of these assigned functions, the HDUs assumed a distinctive academic character.¹¹ They were limited to a narrow range of programs in the non-science and teaching-related fields and at the lower qualifications levels (undergraduate diplomas and degrees). In terms of funding, staffing and facilities, they were clearly disadvantaged in relation to HAUs. The HDUs’ isolated geographic location remains highly disadvantageous in supporting academic life and attracting and retaining quality staff and students. Their distance from centers of government, the private sector and NGO operations clearly impedes their winning contracts, consultancy and collaborative projects. From all of these characteristics, HDUs acquired a generally low reputation and status regarding the quality of education. Despite these disadvantages, some HBUs developed particular strengths and areas of excellence.

Beyond these common features, significant variations exist within and between the HDUs. These arise from their locality, the socio-economic and political background of their constituencies and the different historical phases of their establishment. Accordingly, the ten HDUs can be clustered into the following three groupings: (a) the six African rural universities; (b) the two non-African urban universities for the relatively wealthy and advantaged Indian and Colored populations; and (c) the two special purpose universities (the Medical University of Southern Africa and Vista University, the combination residential and distance education institution).

Among the technikons, the English and Afrikaans cultural/linguistic distinction, though present, was not as significant as in the universities. These more recently established institutions were not subject to the same historical tensions between British and Afrikaner nationalism. For this reason, the technikons can be categorized simply into the seven historically disadvantaged technikons and the eight historically advantaged technikons.

11. See EPU 1997, pp. 52–53 for details.

Current government policy on the binary divide is somewhat ambiguous. The Ministry of Education, in consultation with the higher education sector, requested the Council on Higher Education (CHE) to make recommendations on the optimal “size and shape” of the system. The CHE initially recommended a very strict divide between institutional types, which generated sharp criticism. Even after a revised document softened these categories, the ministry rejected the CHE’s recommendations. Instead, in the 2001 National Plan for Higher Education (NPHE), it favored the reduction in institutional numbers, but the retention of the binary divide (at least for the next five years). Then, contradicting this, the ministry proceeded to adopt a system based on three institutional types: universities, technikons (to be called “universities of technology”) and “comprehensive” institutions, which would be a hybrid of both. Within this broad three-fold institutional framework:

1. Universities would focus on niche areas of ‘traditional’ general formative and professional undergraduate and postgraduate programs and research;
2. Universities of technology would emphasize career-oriented programs, mainly at the undergraduate certificate and diploma levels. They would also offer, with government approval, undergraduate and postgraduate degree programs in identified areas of strength; and
3. Comprehensive institutions would offer a combination; but as elaborated below, the basis for this aggregation is not entirely clear.

As a result, although the binary divide was formally retained, some institutions would be required to offer both university- and technikon-type programs. It is not clear whether comprehensives will provide both types of programs within a single institutional context (which in effect replicates the binary divide within a single institutional setting) or whether they will be asked to achieve curricular integration of high-level academic and vocational elements at the program level. From a curriculum and knowledge perspective, very little serious discussion has occurred about what such integration entails at the program level.

The 2001 National Plan provided for the restructuring of the institutional landscape through mergers, but without reducing the number of institutional sites. After recommendations were sought from a ministerial National Working Group, followed by a further rapid consultation process, the final decision was to reduce the current array of 36 institutions to 22, but without closing any of the current 48 sites of delivery. Not surprisingly, the merger decisions generated considerable debate and, in some cases, fierce opposition. The rationale for the recommended mergers was fundamentally critiqued by institutions and analysts, who believed it was inconsistently applied. The ministry argued that pruning institutional numbers would increase the overall efficiency, equity and effectiveness of the system. However, it seems that the move may have been motivated more by the political need to achieve demonstrable change than by purely educational policy reasons.

Program and Curriculum Development

Differentiation must be considered at the level of programs as well as institutions. In the development of South African higher education policy, program-based planning became a central feature of the framework, and was used as the basis of national and institutional three-year rolling planning processes by which the system would be reconfigured and regulated.

With its emphasis on outcomes, the emergence of the National Qualifications Framework (NQF) provided the first point of policy reference for program changes. Vociferous resistance from the higher education community against a uniform qualifications framework and, in particular, the applicability of unit standards to higher education qualifications (as opposed to whole qualifications) ultimately produced a somewhat cosmetic re-presentation of existing programs in the formats required by the South African Qualifications Authority. This meant that vague outcomes could be identified while curriculum content remained largely untouched. Nonetheless, the advent of the NQF did provide the opportunity for some rethinking of curriculum. In some cases, new content was engaged quite enthusiastically.

Despite the elaborate formal framework for articulation and mobility established in the South Africa's National Qualifications Framework, it is difficult to gauge the extent to which articulation exists in practice between technikons and universities. Very little cooperation between universities and technikons has taken place, although some co-operation exists in the areas of libraries and engineering education. Articulation is generally seen as a one-way street between the "lower" technikon qualifications and the "higher" university ones. However, the Department of Education has noted that this should function as a two-way process.

Pushed by the strong emphasis on multidisciplinary programs in the NCHE and *White Paper*, many institutions undertook significant academic and curriculum restructuring (Breier, 2001). In a critical overview of this process, Ensor (2002) highlights the radical shifts that were made in numerous cases from traditional discipline-based qualifications structures to new multidisciplinary programs, which largely lacked internal coherence. This was driven largely by the assumption, inspired by the then influential "Mode 2 debate" as advanced by Gibbons and others (1994), that greater relevance (regarding both national development goals and market opportunities) could be achieved through "Mode 2" multidisciplinary programs. Conversely, the traditional "Mode 1" disciplinary programs constituted an obstruction. One outcome was the rapid proliferation of multidisciplinary coursework masters at many institutions. Once the excesses of these shifts had been realized (in what the DOE later called a 'too literal interpretation' of the program policy emphasis), many institutions retracted towards a more balanced approach. In contrast, most HDUs were too preoccupied with matters of immediate survival to undertake program restructuring, and continued to provide the program mixes which they had acquired and developed under apartheid conditions.

Thus, an assortment of new, modified and unchanged programs emerged within the post-apartheid institutional landscape. Within its planning framework, the Department of Education—concerned about the unregulated, largely market-driven proliferation of new programs and their possible mismatch with labor market needs and national policy goals—responded by developing the Program and Qualifications Mix (PQM) initiative. This forms one of the government's three main policy levers for systemic change, the other two being a new funding framework and the Higher Education Quality Committee's quality assurance framework.

Under the PQM exercise, educational relevance and quality was defined primarily as an adequate institutional capacity to offer programs. Institutions would only be able to offer those programs approved by the Department of Education. This applies both to those programs funded by government subsidy, and those funded from non-governmental

sources. The PQM intervention was perceived as an unjustifiably strong regulatory incursion into institutional autonomy and the expression of a centralized control system. In contrast, the government's view was that the extensive interaction which it undertakes with institutions as part of the iterative planning process provides the opportunity for institutions to negotiate with government. Consistent and transparent criteria for the process have been developed. This, for government, is evidence of a more consultative and less controlling approach.

While contrasting perceptions of the PQM process will inevitably remain, it constitutes the main policy lever by which government will steer the system at a program level. In this way, government seeks to achieve systemic coordination, to ensure that program offerings based on niche areas within the binary divide are complementary and to mediate the effects of unregulated growth in certain fields produced by the competitive pursuit of market opportunities. In doing so, it also seeks to manage academic and vocational drift in order to ensure an appropriate range of programs and hence the institutional differentiation necessary to fulfill policy goals. The key challenge in this for government is to maintain a distinct line on a binary divide in such a way as to resist the persistent tendencies of institutions towards academic and vocational drift.

Private Higher Education

A noteworthy recent development in South African higher education has been the intense activity by the private sector. Initially, in the mid-1990s, it was assumed that a rapid proliferation of both local and international providers and suppliers was taking place, in keeping with global trends in the rise of private and cross-border provision of higher education (mainly by institutions in the UK, USA and Australia). As part of the emerging policy framework in South Africa, the 1997 *White Paper* on higher education recognized the important complementary role which private higher education should and could play in expanding access to higher education, in addressing labor market requirements and in meeting the diversity of student demands. In this way, private providers would contribute to an increasingly differentiated system—in terms of expanded institutional choice and program offerings.

At the time, no regulatory framework was in place to coordinate this. Without need for registration or accreditation, private providers could establish new institutions and offer new programs. From the outset, information and clarity about the size and nature of the private sector were lacking. Notably, the 1996 National Commission on Higher Education estimated as many as 500,000 enrollments in the private sector. In hindsight, this proved to be a spectacularly uninformed over-estimation. More recent estimates put private higher education enrollments at 20,000 to 25,000, and the number of institutions at around 350 (Subotzky 2004). Data on this sub-sector remain unreliable and incomplete. The local institutions comprise a few large stock exchange listed companies and numerous small independent institutions, mostly with single or dual programmatic focus in the fields of business, information technology and teacher education. Several trans-national institutions also entered the local market, either on their own or through partnership agreements with local institutions. The majority of private sector programs are at the undergraduate diploma and certificate levels, with very little at the postgraduate level except for MBAs. The sub-sector appears to be relatively de-racialized, with high numbers of Africans

enrolled in both the lower information technology programs and MBAs. Articulation between private and public institutions is beginning to develop through the selected accreditation of private courses.

While some of these institutions were long-established reputable local and foreign institutions, a number of cases of “fly-by-night” institutions came to light and were prominently featured in the local press. Consequently, government quickly became concerned about the quality and sustainability of private provision. These developments generated a series of complex permutations in collaborative linkages among and between South African public and private institutions and trans-national institutions. All of this created considerable additional challenges for regulation and quality assurance. In the absence of a regulatory framework, these developments were perceived to be the thin edge of the wedge of an uncoordinated proliferation of private provision, which would play havoc with the intended national planning approach towards a single coordinated higher education system. The private initiatives were also seen to pose a serious competitive threat to established public institutions. This was particularly so at a time when confidence the public system was shaky, as evidenced by the unanticipated decline in public enrollments during the late 1990s. Thus, while the expansion of private institutions contributed to differentiation, it represented for government the unplanned proliferation of institutions and programs, which, despite being market-driven, would not necessarily advance national policy priorities.

The perceived rapid growth of the private sector became a hot debating point in policy circles. The Ministry openly stated its intention to protect the public interest by ensuring the quality of private providers. To this end, the Department of Education issued regulations that required private institution to register, and to apply for the accreditation of their individual programs with the Higher Education Quality Committee. In addition, the use of the name ‘university’ was restricted.

In terms of enrollments, the anticipated growth and negative impact of the private sector never occurred. The reasons are not clear. It is possible that the government’s interventionist and tightly regulatory approach made business conditions less favorable than they were originally. In any case, very few transnationals have remained and the local sector has consolidated into a few large institutions and a number of very small ones. The relation between the public and private sector remains a mixture of competition and complementarity.

On-going Debates around Differentiation and Articulation

The strict binary divide and, in particular the narrow interpretation of polytechnic training within this, has been contested as technicist and divisive. In response, the new post-apartheid policy framework placed considerable equity-driven emphasis on access, mobility and articulation between universities and technikons, and education and training more generally. This was strongly influenced by the labor movement’s aspiration to link education and training into a seamless ladder of articulation from basic training right up to doctoral education. This was given expression in the National Qualifications Framework, which is managed by the statutory South African Qualifications Authority and is based on the New Zealand model. Given the vast discrepancies between historically black and white institutions as a result of apartheid, great emphasis was initially understandably

placed on achieving equity through the notion of institutional parity. Underpinning this equity-driven approach is the belief that, in the South African context, institutional differentiation was based on past discrimination and had to be eliminated.

In subsequent policy formulation, it became evident that the single institutional model would be neither desirable (in failing to accommodate the growing diversity of students and producing the range of graduate outputs required to meet labor market and human resource development needs), nor affordable (given the already high fiscal allocations to higher education). In terms of desirability and affordability, it would be impossible for each institution to offer everything. Thus, by the mid-1990s, almost universal consensus surrounded the principle of institutional differentiation as a key feature of the post-apartheid policy framework.¹²

Within the general consensus about the need for differentiation, two distinct positions on the binary divide have emerged. On the one hand, there has been a persistent and vociferous call to retain a distinct divide, which acknowledges the technikons' unique institutional mission. In this view, they are seen to offer a range of flexible, relevant and good quality vocational programs, which are rapidly responsive to employers' needs in meeting the changing demands of the labor market. The counter view is that, while there is a need for specific career-oriented programs, there is no need to maintain a strict formal divide. A more flexible range of institutions is required in which institutions would carefully identify their own missions and niche areas of program focus.

Within these debates on differentiation, it is interesting that institutional nomenclature has emerged as a contested issue. This is symptomatic of the more fundamental issue of what constitutes a university as opposed to a polytechnic-type institution. In terms of the criteria that have emerged from these debates, the essential differences between universities and technikons can be summarized as follows:

- *Institutional mission and mandate:* In South Africa, the binary divide has been maintained between the universities' focus on high-level formative and professional education as opposed to the career-oriented vocational and practical training emphasis of the technikons. The main policy lever for maintaining appropriate forms of differentiation within the binary divide is the Program and Qualifications Mix regulatory mechanism.
- *Local versus regional or international orientation:* Generally, technikons are guided by local economic development and labor market needs whereas the universities (especially the historically advantaged universities) have an international orientation based on the strength of their disciplinary and research networks. However, many university teaching and research programs are responsive to local development needs, for example, in health, education and aspects of business. Increasingly, the recruitment of international students is being encouraged at both universities and technikons.

12. The key challenge in advancing this policy of differentiation resided in its tension with the equity position. In the South African context, differentiation implied inequality and discrimination. This conundrum occupied the centre of policy debates through the early 1990s. However, Badat and others (1994), in an influential contribution, argued that in the post-apartheid context, differentiation no longer needs to be equated with racially based discrimination and that achieving equity did not imply strict institutional parity.

- *Differences in teaching approaches:* The universities focus generally on theoretical and academic teaching in contrast to the practical, problem-based approach of the technikons.
- *Qualification levels offered:* The technikons generally provide undergraduate programs at the diploma or certificate level, while universities provide undergraduate and postgraduate degrees, with some certificates and diplomas. Both academic and vocational drift is evident.
- *Comprehensiveness of fields of study offered:* Generally the universities offer a wide range of fields of study, with the exception of the HDUs which, as a result of apartheid policy, were restricted to undergraduate teaching in fields associated with the apartheid division of labor. Technikons offer instruction in technological, information technology and business fields as well as the social sciences. Recent government policy rejects single purpose institutions. For this reason, the Medical University of Southern Africa is being merged with the University of the North.
- *Conduct of research and type of research conducted:* While universities are expected to carry out research as part of their mandate, research output within and between the HAUs and HDUs is uneven. Technikons, with a few notable exceptions in niche areas of strength, conduct little or no research. In terms of the principle of differentiation adopted by government, there is no expectation that every faculty in every institution should conduct research. Instead, research capacity and postgraduate teaching will be developed in identified areas of comparative strength.
- *Admissions criteria:* University admission is based on passing the school leaving matriculation examination with university exemption (with other options open via the recognition of prior learning and mature-age exemption). Technikon admission is based on an ordinary school-leaving certificate.
- *Staff qualifications:* University members of staff are generally much better qualified, with the requirements for appointment and promotion being higher as well.
- *Governance:* Universities and technikons in South Africa are governed by similar structures: Councils, senates, faculties and, increasingly, executive management. Technikons, however, tend to have a more hierarchical authority structure.
- *Regulation, quality assurance and funding:* A key feature of the South African policy framework is the pursuit of a single, coordinated system. The accreditation of technikon curricula, however, was originally done by a special national body set up for this purpose (SERTEC). The Higher Education Quality Committee of the CHE has now taken up this function and is responsible for quality assurance within both universities and technikons.

Conclusion: Key Challenges

In accordance with its divided social and political history, a large and complex system of higher education evolved in South Africa. Within the policy framework for the reconstruction of higher education, considerable debate has occurred about the issues of differentiation and articulation. This is so with regard to the desirability of retaining the binary divide. The government's current position emphasizes both institutional and program

differentiation. However, its policy on the binary divide remains ambiguous, with the divide being formally maintained while being blurred within the new comprehensive institutional types.

The evolving mission of institutions and their programs has been shaped by the interplay of market forces and government regulation. The key challenge for government is how to manage the required range of differentiation through the PQM exercise—its main policy lever—while not making inappropriate incursions into institutional autonomy on the one hand, and not reinforcing historical institutional inequalities on the other. In this context, the effectiveness of the equity-driven emphasis on articulation in terms of the National Qualifications Framework needs to be reviewed.

Tanzania

Population		38,329,000
Tertiary graduates per 100,000		112
Tertiary gross enrollment ratio		0.9%
Public universities	<i>Number:</i>	8
	<i>Enrollments:</i>	26,374 (excludes Open University enrollments)
Private universities	<i>Number:</i>	17
	<i>Enrollments:</i>	5,275
Public polytechnics and professional institutes	<i>Number:</i>	21
	<i>Enrollments:</i>	14,415
Private polytechnics and professional institutes	<i>Number:</i>	0
	<i>Enrollments:</i>	0
Public post-secondary colleges	<i>Number:</i>	na
	<i>Enrollments:</i>	na
Private post-secondary colleges	<i>Number:</i>	na
	<i>Enrollments:</i>	na
Open university	<i>Enrollments:</i>	9,232
National oversight body		Tanzania Commission for Universities (2005)
National quality assurance agency		Higher Education Accreditation Council (1995) National Accreditation Council for Technical Education (1997)
National qualifications framework	<i>[date]</i>	<i>[name]</i>
Comprehensive legislation		Universities Act of Tanzania (2005) Technical Education and Training Policy (1996)

Source: Ministry of Science, Technology and Higher Education (2006); Mkude, Cooksey, and Levey (2003); Darvas (2007).

Background

The United Republic of Tanzania was founded in 1964 through the joining of two countries: Tanganyika and Zanzibar. Tanganyika gained independence from Britain in 1961, while the island of Zanzibar became independent two years later in 1963. Until 1992, the country functioned politically as a one-party state. Tanzania's political environment has enjoyed more stability than that of many other African nations. Only Zanzibar, which has a very distinct history and culture, has witnessed serious political conflicts. Dodoma serves as the nation's administrative capital, and the port city of Dar es Salaam is its commercial capital. Arusha is the headquarters of the East African Community.

Tanzania has often attracted attention abroad as an exemplary African nation due to the gentle leadership and charisma of its founding president Julius Nyerere. Tanzania's social and political transformations have also been both dynamic and gentle. Since independence, significant progress has been made in the provision of social services, though the country still remains very poor overall.

Tanzania's economy is based on agriculture, which accounts for 60 percent of its GDP and more than 80 percent of employment and export earnings. The mining and industrial sectors are relatively small, contributing an additional 15 percent of the country's GDP, although the country possesses considerable mineral reserves including natural gas.

The Higher Education System

Tanzania's tertiary education system is best described as a binary system consisting of universities and non-university polytechnic-type institutions. Going by the definition of the Tanzanian Ministry of Science, Technology and Higher Education (MSTHE), full universities and non-university professional training institutions (namely technical colleges) provide higher education. Other post-secondary institutions that produce middle-level professionals are classified as tertiary institutions. The total student enrollment in universities and polytechnics is 23,217, out of which 20,217 (80 percent) comprise university enrollment alone. Thus, even more than Kenya and Uganda, the tertiary education sub-sector is small in relation to the country's population, which is approximately 36 million. In fact, Tanzania's tertiary level gross enrollment ratio was just 0.9 percent in 2004.

Universities

The university system in Tanzania, perhaps more so than in Kenya and Uganda, is beginning to show some elements of horizontal differentiation, especially with regard to public universities, each of which is meant to specialize in specific aspects of development. Thus the university system displays less isomorphism—both mimetic and normative—than the Kenyan system. The University of Dar es Salaam displays the most vertical differentiation. However, articulation among universities is poor.

In Tanzania, university education is offered in two broad university categories: (i) public universities (8 in number) whose existence is based on an Act of Parliament (some of them with constituent colleges), and (ii) Private universities (13 in number) some of which are chartered, and others non-chartered. The existence of several university colleges indicates some differentiation with decentralization.

The oldest public university and still the most prestigious is the University of Dar es Salaam (UDSM). This university was founded in 1960 as an affiliate of the University of London. It became part of the University of East Africa (along with Makerere and Nairobi) in 1962. It ultimately emerged as the national university after the breakdown of the East African Authority in 1970. The UDSM has, by far, the largest number of programs, which makes it the most vertically differentiated university in the tertiary system. The other public universities have been deliberately designed not to copy the UDSM, but to fill particular development niches. Thus, for example, Sokoine University of Agriculture (established in 1984) specializes in agriculture.

Provision of higher education by the private sector is a recent phenomenon in Tanzania. Private universities were granted permission to begin operations in 1997. By 1999, some 19 private institutions were undergoing accreditation reviews by the Higher Education Accreditation Council (HEAC). Twelve of these admitted students in 1999–2000 academic year, offering Bachelor's degrees as well as advanced diplomas in different fields. Ten private universities have now been given Certificates of Full Registration. Most of the private universities are relatively small. Encouragingly, the private university sub-system is beginning to display some elements of horizontal differentiation. Some of them, such as Hubert Kairuki Memorial University, the Aga Khan University, the Kilimanjaro Christian Medical College, and the International Medical & Technological University offer programs in the medical sciences, an area which is usually not typical for private universities in East Africa.

The "traditional" type of university dominates the higher education scene in Tanzania. That is, apart from the University of Dar es Salaam, no other university can be traced to a "technical college" or "polytechnic" institutional origin. However, the International Medical and Technological University, the University College of Lands and Architectural Studies, the Aga Khan University, Hubert Kairuki Memorial University and Kilimanjaro Christian Medical College all demonstrate technical orientations, and therefore provide a measure of university system differentiation.

Polytechnic-Type Institutions

The polytechnic-type institutions in Tanzania show aspects of differentiation but no real articulation among them. Tanzania has three categories of polytechnic-type institutions: (i) technical institutes and colleges, (ii) vocational training centers, and (iii) folk development colleges. The Folk Development Colleges are unique in that they provide technical/vocational training to mature members of the society. Their main objective is to produce artisans for community self-employment.

The polytechnic-type institutions of tertiary education include three technical colleges under the MSTHE (Dar es Salaam Institute of Technology, Technical College Arusha and Mbeya Technical College) with a combined enrollment of 3,000 students and an output of 787 graduates per year. A further 12 colleges are attached to other ministries such as the Mweka Wildlife College, Tanzania School of Journalism and the Institute of Finance Management (the latter being the largest with 1,000 students). These polytechnic-type tertiary education institutions offer a multitude of technical, vocational, and professional courses in accounting, computer science, business administration, journalism, mass communication, engineering, teacher education, clinical medicine, agriculture, community development and social welfare.

Differentiation between Universities and Polytechnic-type Institutions

As in Kenya and Uganda, universities and polytechnic-type institutions in Tanzania show major horizontal differentiation on many of the dimensions in Matrix 1. Major differences are apparent in institutional missions and mandates, curricular emphasis, admissions criteria, range of fields of study, etc. However, little differentiation is observed in some dimensions, for example, in the realm of governance, where the ministry of education exercises considerable control in all tertiary education institutions.

Articulation between Similar/Different Types of Institutions

In general, poor articulation is found between the same type and different types of tertiary education institutions in Tanzania. Again, this is similar to the situation in Kenya and Uganda. Thus, public universities articulate little with each other. No formal mechanisms for articulation have been established in such areas as transferability of credits, staff mobility or collaborative activities, such as research. This situation is also true with regard to articulation between public/private universities and the other types of institutions, namely public polytechnics, private polytechnics and technical institutes/colleges.

At the central level, governance responsibilities for the tertiary sub-sector are divided among three Ministries: (i) Education and Culture, (ii) Science, Technology and Higher Education, and (iii) Regional Administration and Local Government. Other ministries and parastatal agencies which exercise direct influence on the sector include the Planning Commission, the Ministry of Finance, the Civil Service Department, the Ministry of Community Development, Women Affairs and Children, and the Ministry of Labor and Youth Development. The Tanzania Institute of Education (TIE) is responsible for curriculum development, just as the Kenya Institute of Education and the National Curriculum Development Council in Uganda. The Higher Education Accreditation Council (HEAC) handles the registration and accreditation of private universities. Oversight of the private polytechnics resides with the Vocational Education and Training Authority (VETA).

The exception to the above general rule of poor articulation is some articulation with regard to admission into public universities. University admission procedures in Tanzania reveal a measure of articulation with pre-university institutions. Two options are available for university admission for a Bachelors degree: (i) "A" Level qualifications or a diploma; or (ii) a certificate from a recognized institution, not necessarily a university. In the second category, which is of particular interest to this study, the diploma or certificate must include mathematics and the applicant must have achieved at least a C grade. In addition, applicants must have overall academic average of B grade.

Main Challenges and Conclusions

Tanzania is a unique case in East Africa for having put in place a National Higher Education Policy in 1999. This policy framework (i) emphasizes the strengthening of the *Higher Education Accreditation Council*, founded in 1995; (ii) addresses gender imbalances in higher education admissions; (iii) engages the imbalances between humanities and sciences;

(iv) advocates increased funding for Higher Education; (v) seeks the broadening of the sources of financing for higher education, including student contributions through loan schemes; (vi) recommends increasing of the retirement age for academicians from 55 to 60 years, (vii) encourages the private sector to support higher education; and (viii) promotes cooperation between higher education institutions on national, regional and international levels. In spite of the benefits gained from this policy, Tanzania still faces the structural challenge of establishing meaningful articulation and differentiation in higher education, particularly between universities and polytechnics.

A related and perhaps more fundamental challenge is the need to expand the higher education sector. The country is poorer than Kenya but richer than Uganda. Certainly, its higher education sector is smaller than those of Kenya and Uganda. For this reason alone, the country faces the challenge of expanding the sector, with special attention to technical education. In this regard, the new National Higher Education Policy is correct in its diagnosis and prescription for growth.

Uganda

Population		28,816,000
Tertiary graduates per 100,000		307
Tertiary gross enrollment ratio		2.6%
Public universities	<i>Number:</i>	5
	<i>Enrollments:</i>	55,763
Private universities	<i>Number:</i>	16
	<i>Enrollments:</i>	22,344
Public polytechnics and professional institutes	<i>Number:</i>	1
	<i>Enrollments:</i>	NA
Private polytechnics and professional institutes	<i>Number:</i>	0
	<i>Enrollments:</i>	NA
Public post-secondary colleges	<i>Number:</i>	35
	<i>Enrollments:</i>	21,297
Private post-secondary colleges	<i>Number:</i>	74
	<i>Enrollments:</i>	18,848
Open university	<i>Enrollments:</i>	0
National oversight body		National Council for Higher Education (2001)
National quality assurance agency		[same]
National qualifications framework	<i>[date]</i>	[name]
Comprehensive legislation		Universities and Other Institutions Act (2001)

Source: Uganda National Council for Higher Education (2005); Musisi and Muwanga (2003).

Background

Uganda attained independence in 1962 from Britain under the leadership of Dr. Milton Obote, the country's first president. The country's capital city is Kampala. Uganda's people are concentrated in the nation's fertile southern and western regions with the total population of around 22 million.

Until 1986, Uganda was characterized by political instability resulting from coups and counter-coups. It is also the only country in East Africa which has had more than six Heads of State since independence. Yoweri Museveni, the current president, took office in 1986 following a protracted "bush war" with ultimately achieved victory under his leadership.

The country is currently governed through a non-party "movement system" under Museveni's National Resistance Movement (NRM), which has been in power since 1986. However, in August 2005, the country held a referendum that overwhelmingly supported the country's return to multiparty politics. One of the major political problems facing Uganda is a longstanding insurgent war in the northern part of the country that has resulted in 1.5 million internal refugees.

Uganda's economy is predominantly based on agriculture, which accounts for about 44 percent of its GDP. Food crop production is the most important economic activity, contributing for over one quarter of the nation's GDP, compared to only 5 percent for cash crops. Manufacturing output generates a further 9 percent. Most agricultural production is concentrated in the southern regions, where climatic conditions support the densest rural populations in the nation. The economic situation in the northern region is much less secure, partly due to the devastating effects of insurgent war and unstable border conditions with southern Sudan. A major feature of the Ugandan economy is its reliance on external donor support, which, since 1986, has provided slightly over 50 percent of the budget. The education system in Uganda is characterized by high demands at all levels except the pre-primary.

Between 9,000 and 12,000 students per year qualify to advance into post-secondary education. However, only about 25 percent of these are admitted to post-secondary institutions. Enrollments in tertiary institutions have, over the last 10 years, increased by over 90 percent, while the number of tertiary institutions has expanded by only 1.8 percent in the same period. This indicates a potential need for more institutions at tertiary level to absorb the growing numbers of students.

The Higher Education System

Uganda's tertiary education is best described as *an emerging trinary system*. Uganda has three recognized types of tertiary education institutions. These are: (i) universities, both public and private; (ii) non-university polytechnic-type institutions; and (iii) teachers' training colleges, which are recognized as tertiary institutions. In addition, other government-owned and managed educational institutions provide professional in-service training to their employees at ministerial and departmental levels.

Higher education in Uganda originates in 1922 when Makerere College was established by the British colonial authorities. At its inception, Makerere was only a technical college. Makerere started offering diploma courses in 1937, and twelve years later it became a university college associated with the University of London.

Currently, Uganda has 17 universities, 13 of which are private. This is in addition to 2 public degree-awarding non-university institutions. The leading higher education institutions in Uganda are Makerere University, Mbarara University of Science and Technology (founded in 1989), the Uganda Martyrs University (founded in 1991), and Kyambogo University (founded in 2002 after the merger of Uganda Polytechnic and Institute of Teacher Education-Kyambogo). Following this merger, Uganda no longer possesses the equivalent of a national polytechnic, as in Kenya. Instead, Uganda has polytechnic-type institutions. The total tertiary enrollment is approximately 43,000 students.

Universities

In Uganda, a modest amount of horizontal differentiation is found among universities. Within universities, Makerere University has the highest level of vertical differentiation, though this does not seem to have produced institutional isomorphism—either mimetic or normative—within the tertiary system. However, articulation among the universities is poor.

Makerere University is Uganda's leading institution of higher learning, accounting for about 65 percent of total university enrollments. An additional 20 percent is shared among other public universities at Mbarara, Kyambogo, and Gulu. The remaining 15 percent is distributed among the 13 mostly small private universities. Though the number of private universities is higher than that of public universities, the public share of university admissions stands at around 85 percent. This is partly due to the infant nature of private universities in the country. The development of new universities (both public and private) is a relatively recent phenomenon, dating from 1988 when the country registered 14 new universities (2 public and 12 private).

It was not until 2001 that regulation of these universities was put in place. In March 2001, Parliament approved the Universities and Other Tertiary Institutions Act, which laid down guidelines for establishing new universities. An important aspect of this Act was the creation of the *National Council for Higher Education* to oversee the critical issues of registration, quality control and accreditation of both public and private universities. In this regard, one of the challenges faced by the regulating body has been how to deal with accreditation of those private universities which had already been recognized by the government prior to the Council's creation. The Council was, nevertheless, created at a critical period in the evolution of Uganda's tertiary education. A powerful and independent Council has been viewed by some observers as crucial in setting benchmarks for quality assurance and the general progress of Uganda's tertiary education sub-sector.

Most of the universities in Uganda are of the "traditional" type. Apart from Kyambogo University, (created from the merging of Uganda Polytechnic Kyambogo with the Institute of Teacher Education, Kyambogo), their original purpose was to provide technical degree programs. Makerere University itself had its origins as a "technical college," although it no longer claims to be exclusively technical in orientation. Mbarara University of Science and Technology is also a largely technological. In addition, two degree-awarding technical/vocational institutions are included in the system: the Uganda Management Institute and Makerere University Business School. These two, as their names indicate, are geared towards the provision of business management skills.

Polytechnic-type Institutions

Considerable horizontal differentiation is observed among the polytechnic-type institutions in Uganda, though it should be kept in mind that Uganda has only one polytechnic. In general, articulation among the different types of polytechnic-type institutions is poor. Unlike in Kenya, no institutional isomorphism is apparent at this level.

Uganda, like Kenya, owes the existence of her non-university polytechnic-type institutions to Christian missionaries. The history of such institutions is linked to religiously sponsored vocational training schools, which provided a cheap and affordable source of technical labor for the development of the colony. Thus, some of these vocational training institutions existed long before the country's independence.

However, the formal and legal incorporation of polytechnics into the tertiary education sub-sector is a relatively new development dating from 2001, when the government passed the Universities and Other Tertiary Institutions Act. The Act provides the legal framework for management and administration of higher education institutions in the country. This is in addition to providing a legal basis for the expansion and quality control of higher education.

Today Uganda has 1 polytechnic, 29 technical schools, 38 technical institutes, and 46 vocational training centers, plus a host of national teacher training colleges and special training schools spread across the country. Interestingly, although the private sector owns 13 out of 17 universities, it has very little involvement at the polytechnic level.

Differentiation between Universities and the Polytechnic

A high degree of differentiation is found between the universities and the one national polytechnic. The details of this are elaborated in the regional report. High differentiation is found with regard to institutional mission and mandate, curricula emphasis, qualification levels, admission criteria, range of fields of study, nature of research, staff qualifications, etc. On this basis a few observations can be made.

All public universities in Uganda are established by an Act of Parliament. In addition, each university has been created under its own Act of Parliament. The internal governance of each university is managed by its Council and Senate in addition to student organizations. Private universities, on the other hand, are both externally and internally governed. While they have their own internal governance bodies similar to those in public universities, private universities are also subjected to the rules and regulations set by the National Commission for Higher Education (NCHE). Both the universities and polytechnics operate under the oversight of the Ministry of Education and Sports. In this regard, the treatment of the private and public polytechnics is not differentiated.

The Ministry of Education and Sports is responsible for the overall supervision and regulation of the education sector in Uganda. It sets policies and monitors the standard of the education in both public and private higher education institutions. The National Curriculum Development Centre (NCDC) initiates, develops monitors, and evaluates the existing and new curricular for primary, secondary, vocational, and technical schools. The Uganda National Examination Board (UNEB), an independent professional examinations authority within the Ministry, conducts national examinations at various levels.

Articulation among Similar/Different Types of Institutions

In general, some articulation among universities and also between universities and the polytechnic-type institutions can be found in Uganda. Before the Kyambogo polytechnic became part of Kyambogo University, a degree of articulation between the universities and polytechnics was present with respect to admission requirements. Three main criteria apply to university admission: (i) direct entry, for immediate school leavers; (ii) mature age, for those above 25 years and in the middle of their careers; and (iii) Diploma entry, for diploma holders. For the Direct Entry level, a candidate is expected to have obtained principal passes in Physics, Mathematics, Chemistry, and Economics. The Diploma Holder's admission requires Ordinary Technical, Surveying or Architectural Diploma with credit passes and at least a Credit 3 pass in Mathematics for Engineering and Surveying, and in Building Construction and Drawing for Architecture. This takes cognisance of relevant polytechnic diplomas.

The other option available to polytechnic diploma graduates for gaining university admission is the mature entry level. At this level, candidates who lack qualifications for the above two entry options are considered on the condition that they possess relevant working experience in addition to passing oral and written examinations. For academic staff, exchange programs enable university lecturers to provide teaching services in the polytechnics and the vice versa. However, these services are provided on *ad hoc* basis as the two institutions operate under different structural frameworks, including remunerations.

Conclusions and Challenges

A major challenge facing Uganda's education system is that of *institutionalizing* relevant and practical skills at all levels of the economy. Currently shortages of skilled labor, including technical and managerial staff, are being met by foreign labor. Present initiatives to improve skills availability include the rehabilitation of the Directorate of Industrial Training, which is expected to strengthen the industrial and vocational training as well as improve industrial management and productivity. Hopefully, the effort to restore practical skills will be informed by the need to establish more horizontally and vertically differentiated institutions and better articulation between them.

The university system in Uganda is beginning to acquire some elements of horizontal differentiation with the establishment of two technically oriented universities, Mbarara University and Kyambogo University. In addition, the emergence of private institutions has introduced an element of differentiation though many are still small social science institutions. In this context, Makerere University is the leading institution in terms of vertical differentiation.

As in Kenya, Uganda faces the challenges of creating formal structures that would enable credit transfer to universities for polytechnic graduates. In addition, the country still requires a greater investment in the development of additional polytechnics in order to cater for the presently unmet demand in technological education. This is especially urgent following the merging of Kyambogo Polytechnic and the Institute of Teacher Education-Kyambogo to create a technical university. In this sense, the creation of the new technical university could result in the reduction of horizontal differentiation without necessarily guaranteeing vertical differentiation within the new university.

As in Kenya, Uganda needs to equip her polytechnic institutions with adequate facilities if they are to contribute not only to the development of the country's manpower needs but also to the improvement of technical training. Better-equipped polytechnics would hopefully yield more vertical differentiation.

A final challenge is the rapid "privatization" of higher education in Uganda. If polytechnics that acquire university status follow the example set by universities in Uganda, technical education will also become quickly commoditized, and only available to those who can afford it. Thus, it is advisable that any policy changes concerning the polytechnics be done with caution, or else the technical development of the country may be sacrificed at the altar of institutional self-sufficiency. In theory, privatization might result in more response to the market, which might, in turn, result in more horizontal and vertical differentiation. But again this is not guaranteed, especially in the context of widespread poverty.

Zambia

Population		11,668,000
Tertiary graduates per 100,000		222
Tertiary gross enrollment ratio		1.7%
Public universities	<i>Number:</i>	2
	<i>Enrollments:</i>	8,000
Private universities	<i>Number:</i>	0
	<i>Enrollments:</i>	0
Public polytechnics and professional institutes	<i>Number:</i>	4
	<i>Enrollments:</i>	2,500
Private polytechnics and professional institutes	<i>Number:</i>	0
	<i>Enrollments:</i>	
Public post-secondary colleges	<i>Number:</i>	14
	<i>Enrollments:</i>	4,000
Private post-secondary colleges	<i>Number:</i>	3
	<i>Enrollments:</i>	450
Open university	<i>Enrollments:</i>	0
National oversight body		None
National quality assurance agency		None
National qualifications framework		None
Comprehensive legislation		Universities Act of Zambia (1987)

Source: Lulat (2003).

Background

Zambia, the former British colony of Northern Rhodesia and part of the Federation of Rhodesia and Nyasaland, gained independence in 1964. Its estimated population of 10 million consists of over 70 Bantu-speaking ethnic groups. Lusaka, the capital, hosts a population of 2 million. Other major centers are Kitwe (500,000) and Ndola (400,000), located in the country's 'copper belt.' Zambia is almost dissected at its centre by a thin portion of the Democratic Republic of the Congo (DRC). The majority of the population and the country's economic resources are concentrated in the western part. The east, especially the northeast, remains largely isolated. Around 44 percent of Zambians live in urban settings – a proportion that is among the highest in Africa.

The mineral deposits in the copper belt—among the richest in the world—are of overwhelming significance in the country's modern history. The belt extends from the DRC into the central-western region and contains large deposits of copper, cobalt, and other minerals. The country's economy has been based almost entirely on mining. As a major world supplier of copper and cobalt, Zambia earns 95 percent of its annual foreign exchange from these two minerals alone. Copper prices remained high for the first decade after independence, enabling substantial growth. But in the late 1970s, a decline in world copper prices had a severe impact on the economy. Attempts to diversify agriculture and to make the country self-sufficient in food have met with limited success. Still, About 70 percent of the labor force is engaged in (mainly subsistence) agriculture.

The Higher Education System¹³

The higher education system in Zambia comprises two public universities, the University of Zambia and the Copperbelt University, and three public non-university tertiary institutions. None of these correspond exactly to polytechnic-type institutions in other countries. In addition, a small private sector is appearing.

The boundary between higher and further education at the level of institutions and programs in Zambia is particularly unclear. It appears that at least some of the non-university institutions offer both higher and further education programs. In the absence of a national qualifications framework that might demarcate the boundaries between higher and further education, clarification remains elusive. Encouragingly, the Zambian government is about to consider the establishment of a National Qualifications Framework, under the auspices of a National Qualifications Authority, to address these issues. Reportedly the lessons of the South African experience in setting up its National Qualifications Framework will be investigated. Whether articulation will be identified as a key means of enhancing access and mobility within the system as part of this qualifications framework—as is the case with the South African National Qualifications Framework—remains to be seen.

In addition to the two public universities, 16 mainly single-purpose colleges provide vocational and professional training. Fourteen of these provide teacher-training (two for secondary teachers and 12 for primary teachers). The other two provide instruction in technical

13. The following sections are drawn largely from Lulat (2003).

fields, business, and information technology (1 college), and in agriculture (1 college), both the higher and further education levels. Of these, two teacher-training colleges, the agricultural college and the technical college are affiliated to the University of Zambia. As part of this arrangement, programs are accredited, assessment is conducted, examinations are moderated, and teacher trainee practicals are overseen by the university.

According to Lulat (2003), Zambia possesses a developed further education sub-sector containing approximately 50 colleges. These provide vocational training in occupational fields such as agriculture, aviation, hotel management, catering, journalism, printing, applied arts, business, nursing, teaching and technology. Overall enrollments are very low at around 8,500 nationally. Technical education is offered by means of four-year apprenticeships followed by three-year alternating institutional and industrial training.

It is not clear why polytechnic-type institutions have not developed in Zambia. From the available information, it may be the case that the application of the U.S. land-grant model, with its relative emphasis on professional and practical training to some extent accommodated the need for this vocational stream. In addition, the relatively well development range of further education colleges may have had a similar effect. The lack of financial resources also obviously played a role.

Public Universities

The two public universities provide 'traditional' higher education to about 8,000 students in total. These are:

The University of Zambia. This institution was established in 1966 in the immediate post-independence era. As Lulat (2003) reports, the founding vision of the institution was influenced by the United States land-grant model. The chair of the university's planning committee, Sir John Lockwood, master of Birkbeck College, University of London, was a strong proponent of this institutional approach. Following this model, the vision of the university was focused on the needs of the emerging nation. In orienting itself towards local development and the engagement of practical problems, it also reflected the idea of the African 'development university.' As a result, the institution, "departed considerably from the earlier pattern of education planning that had characterized the Asquith university colleges" (Lulat 2003). This meant that from the outset it awarded its own degrees (instead of being an affiliated college of one of the colonial institutions such as the University of London), set less stringent entrance requirements, and restructured undergraduate academic programs from the usual three-year British model to a four-year program in order to maintain standards. In this immediate post-independent period, the curriculum also included mandatory African studies components in order to foster national identity. As a result, the university "avoided the British tradition of single-subject honors in liberal studies in favor of less specialized degrees characteristic of U.S. land-grant universities" (Lulat, 2003: 629). This approach was based on the belief that graduates with a broad foundation were better equipped to meet the demands of management and administration. Simultaneously, emphasis was placed on professional training. One unintended consequence was to eliminate the performing arts.

In recent years, it appears that these development-oriented programs have received less emphasis. As a result, the university has lost some of its distinguishing characteristics.

Its current range of programs is a ‘traditional’ mix of formative academic education supplemented by professional training in specialized areas such as agriculture and veterinary science.

The Copperbelt University. The origins of the Copperbelt University (CU) can be found in a 1979 plan to create a second national university consisting of a two new campuses to be built at Solwezi in the in the North-Western Province and at Ndola in the Copperbelt. The objective was to open access to higher education in these regions and to accommodate enrollment expansion outside Lusaka, which could not cope with the projected growth. Due to financial and logistic constraints, the Solwezi branch was never established. The second institution was ultimately set up in Kitwe using the infrastructure of the Zambia Institute of Technology. Plans for the Ndola campus were abandoned and the Copperbelt University was formally legislated into existence in 1987. In terms of its programmatic focus, the second university represents a legitimate differentiation initiative in relation to the existing University of Zambia. As Lulat (2003) explains:

“The curricular mission of the Copperbelt University was planned to be different to that of the University of Zambia: it would train students in fields not yet on offer at the University of Zambia (such as accountancy, architecture, and business administration). Today the university includes the following four schools: Built Environment, Business, Forestry and Wood Sciences, and Technology.

Public Non-University Institutions

Three institutions provide non-degree level tertiary qualifications in technical fields. These are:

- *Northern Technical College*, situated in Ndola with enrollments of around 600, provides diplomas in various areas of engineering.
- *Evelyn Horn College of Applied Arts*, established around 1960 in Lusaka with approximately 1,000 full-time and part-time enrollments, provides diploma programs in a range of fields including music, pharmacy and information technology.
- *National Institute for Public Administration* (NIPA), in Lusaka with enrollments around 500, provides diploma level training for the diplomatic corps.

With the exception of NIPA, none of these institutions conducts any research. Teaching tends to be practical-oriented. Two of the three are single-purpose institutions.

Private Higher Education

Private higher education is relatively undeveloped in Zambia. As Lulat (2003) suggests, this is a consequence of both history and demand:

Historically, the British higher education model that the colonies inherited did not include a tradition of private higher education (other than that provided by Christian missionaries), and there does not exist a sufficient demand in Zambia to permit the entry of private higher education institutions. Since government policy does not discourage private higher education, it is likely that as demand for higher education builds, a private university may be established, most likely by a religious foundation.

This appears to be happening as in the case of the Northrise University, a joint US/Australian initiative that offers a curious mix of religious and information technology programs. It is not yet a full-fledged university, but is applying to move in this direction. From this and other cases it can be seen that, unlike South Africa, the Zambian government places no regulation on institutional nomenclature. Public and private institutions are free to use whatever name they feel reflects the status to which they aspire, including that of “university.” A few private teacher-training colleges are in operation, three of which are affiliated as indicated to the University of Zambia. One is an Islamic college. The Justo Mwala Theological Collage is a private seminary, established in the mid-1990s with around 120 current students, that provides degree programs in theology.

Systemic Characteristics

Admission to the universities is highly competitive and is acquired by means of A-level school leaving qualifications, with Science and Maths mandatory for admission to science and technology fields. Access to the colleges is attained by means of O-level 3 merits and 3 credits plus passes in English and, for some programs, in Maths.

In terms of governance, the universities are established by individual acts of Parliament. Internal governance is the responsibility of the university councils, the appointment of which is ratified by the minister. The non-university institutions are governed by internally appointed Boards of Management. The University of Zambia, with the Minister ratifying recommendations from the university, oversees the appointment of teaching staff at the non-university institutions.

Regarding government regulation, the higher education system in Zambia is lightly steered. As in many small systems on the continent, political control is tightly maintained while institutions enjoy a high level of academic freedom and institutional autonomy—as long as the government does not feel threatened. Campus life at the university has, for a long time, been characterized by both student and staff activism, which has led to numerous stoppages and boycotts (Lulat 2003).

On occasions when government felt that staff and students had taken policy criticism and activism beyond acceptable limits into the realm of opposition politics, it moved to close the institution and expel students. According to Lulat (2003), the university’s considerable early autonomy lasted until the passage of the 1999 University Act, which affords the minister “sweeping powers, including the ability to bypass the university council and/or the university senate at will” (Lulat 2003). Despite vigorous opposition and legal action, the university community could not prevent it.

Government’s main regulatory lever is funding. The minister is formally empowered to approve Council decisions and most of these are ratified without contention. The ministry’s principal role in decision-making is to check that due process has been followed from the legal perspective. At times, friction has arisen around salary issues, with stakeholders attempting to influence Council’s position by lobbying the ministry. The ministry’s view is that a better balance between autonomy and regulation is desirable. This is necessary to overcome resistance to change on the part of the universities so that the interests the nation may be better served. For example, with regard to articulation, the ministry has not pushed the universities to recognize college qualifications. The Education Permanent Secretary represents the government on the University Councils. Consideration is currently

being given to the establishment of a Higher Education Authority, the equivalent of a Council on Higher Education.

Relations between the universities and colleges are maintained primarily through the affiliation system. This means that relationships only exist between the universities and those institutions with which they are affiliated. The affiliated colleges pay for this tutorial relationship. Generally, the relationship is reported to be cooperative and “non-intimidatory.” Quality assurance is one purpose of the affiliation system, with the University of Zambia responsible for accreditation of courses and coursework, oversight of teaching practice, the monitoring of examinations and marking, and in some cases, the exchange of academic staff. In conjunction with the appointment of external examiners, this system appears to be “working well” in the view of a main informant. More recently, it appears that the affiliation relationship has been reduced to fewer elements. As a result, the affiliation system is reportedly weakening and involves less interchange. It now focuses largely on supervision.

Given the existence of just two public universities, there is no association of university heads. However, two associations of college principals exist. One represents the teacher training colleges and the other serves the two technical colleges. Their role is to champion various policy initiatives on behalf of their constituencies and to make submissions to government and Parliament as part of the legislative process. Regular meetings with the minister are held in order to discuss key issues and explore options.

Articulation and Interface between the University and Polytechnic Sectors

Articulation between non-university polytechnic-type institutions and the universities is very weakly developed in Zambia. The key obstacle in this is the lack of consistency between the two-year college programs with their narrow vocational focus and the broad-based four-year higher education ones. This inconsistency is notable in view of the fact that many of the programs are accredited by the university as part of the affiliation relationship. As a result, students who qualify with diplomas from the affiliated colleges and want to pursue university degrees, do not achieve exemptions and have to start all over again. The consequence is, as Lulat (2003:625) explains:

Student movement, in terms of admission, between the two sub-sectors is practically nonexistent . . . [because] universities have no provision for recognizing coursework completers at any of these institutions, apparently for fear of diluting standards. While this fear is not entirely unfounded . . . it has had the unintended effect of denying the further education sub-sector guidance and influence that can help it raise its academic standards to levels that can permit student interchange. A developing country needs this kind of structural flexibility to maximize the use of its meagre educational resources.

Conclusions

Currently, the Zambian higher education system faces enormous challenges. It requires expansion and further institutional and programmatic differentiation in order to fill the polytechnic gap and better meet labor market and national development needs.

The prospects for this remain remote, however, given the difficult financial constraints which the country faces.

Inadequate public financing of higher education in Zambia produced very poor physical conditions. According to a news report at the time, members of a 1997 Commission of Inquiry were horrified at the situation they encountered at one of the nation's premier technical training colleges. The following account provides some insight into the challenges of providing training under these conditions (Africa News 1997, cited in Lulat 2003):

They were shocked when they were told students ate their meals while standing because the dining hall had no chairs or tables. One member of the commission said he thought he had entered a sports gymnasium. At the automotive workshop, students receive their lectures while standing or sitting on the desks because the classroom did not have any chairs. The sections had no running vehicle and most students graduated without running a motor vehicle engine. Much of the equipment in the electrical workshops was bought in the 1930s and they [sic] were not working properly.

This Commission recommended the upgrading of the six largest colleges in the country into university colleges affiliated to the University of Zambia. Under current financial limitations, expansion of this sort is not "even a remote possibility" (Lulat 2003). Financial limitations aside, expansion cannot be condoned while educational quality in existing institutions is declining. This decline is in itself the direct result of the brain drain, instances of financial mismanagement, and a larger problem, persisting over the past 15 years, which is the "tyranny of an ever-shrinking base of the financial resources that are needed to fund teachers at morale-sustaining levels, physical plant and facilities, and above all adequate supplies of consumables (from things as basic as chalk and textbooks to essentials as complex as laboratory equipment, chemicals, and electricity and water" (Lulat 2003). Due to these conditions, institutional expansion and differentiation are not possible. Thus, the required degree of differentiation will have to come at the program level within the current range of institutions.

Appendixes

Research Methodology

Data for the study were gathered from the following international and regional sources:

1. A review of selected international literature identifying conceptual issues, international trends, and possible lessons for Africa.
2. Regional data:
 - a) Regional literature reviews: In the course of preparing the three regional reports, the researchers gathered and analyzed relevant and available documentary sources on differentiation and articulation in the selected countries. This included the recently published *Handbook of African Higher Education*, UNESCO publications and other sources. From this, the review section of this report, as well as the annotated bibliography of selected sources, were constructed.
 - b) Primary data: The main sources of field data were selected key informants and documents from among the following:
 - (i) Ministries of Education
 - (ii) National Commissions or Councils on Higher Education
 - (iii) Associations of heads of universities and polytechnics
 - (iv) Organized regional and national business, employers and professional associations including Education International (EI)
 - (v) National and regional qualifications, accreditation and certification authorities, where they exist, for example, Conseil Africain et Malgache de l'Enseignement Supérieur (CAMES).
 - (vi) Regional declarations (for example, Arusha) and regional bodies such as UNESCO, SADC Vice-Chancellors, and the Inter-University Council for East Africa (IUCEA)

These data were obtained through a combination of methods, including targeted questionnaires and telephone interviews, which had been agreed upon by the researchers in an initial workshop.

The regional data were analyzed separately by the three researchers. The regional reports were then circulated to the research team and the WGHE co-ordinator for comments. A second consultative workshop was held to consider the status of the data collection, to review draft reports and to refine the conceptual framework. Some gaps were identified at this stage but due to a shortage of resources, it was not possible to fill them through field visits, which would have been ideal. Consequently, attempts were made to fill the gaps through additional telephone interviews.

The research findings were presented to the Steering Committee of the ADEA/WGHE and to the General Conference of the Association of African Universities held in February 2005 at Cape Town, South Africa.

Selected Annotated Bibliography

Huisman, J., and F. Kaiser, eds. 2001. *Fixed and Fuzzy Boundaries in Higher Education: A comparative study of (binary) structures in nine countries*. Den Haag: Centre for Higher Education Policy Studies.

The term “binary” emerged in the 1970s to indicate that a higher education system is divided into two sectors. At that time, the British system was often referred to as an example of the binary model. Starting at the end of the 1960s the British higher education system consisted of, a relatively autonomous university sector, and a predominantly public controlled sector of higher education (polytechnics, colleges), distinct as regards control and research function. In spite of distinctions between the two British sectors, the sectors overlapped strongly in their educational functions.

The emergence of a binary system does not imply that the distinctions will or can be maintained forever. Analyses have pointed out that governmental policies and other environmental influences, as well as organizational strategies and behavior, have an impact on the relationships between the different sectors (binary or otherwise) of higher education systems.

Although there is no regulatory pressure to adjust higher education systems to European trends and standards, there are some indications that governments anticipate the growing importance of Europe. Several governments have indicated that structural changes in higher education systems have been inspired by the idea of not wanting their systems to deviate too much from European trends.

Size of the Sectors

Figure 1.1. Distribution of Student Population by Type of Institution (1996, Headcount)

	University %		Non-university %	
Austria	231311	98%	3756	2%
Denmark	52004	30%	123955	70%
Finland	137173	76%	44339	24%
Flanders	58467	38%	94140	62%
France	1132888	58%	834854	42%
Germany	1395386	76%	442018	24%
Netherlands	165880	37%	278253	63%
Sweden	441069	100%		
United Kingdom	1392607	100%		

Admission

The Dutch higher education system makes a clear distinction between those admitted to higher vocational education and those admitted to university. Two different routes in secondary education (HAVO/MBO and VWO) prepare students for training at *hogenscholen* or university respectively. The situation in Germany largely corresponds with that in the Netherlands. The *Fachhochschulereife* allows students to be admitted to a *Fachhochschule* but not a university. A *Hochschulreife* permits students to go to both a *Fachhochschule* and a university. The systems in Austria, Flanders and Sweden all generally have the same admission requirements for the different higher education sectors. A general secondary education certificate admits students to different forms of higher education. Denmark, France and the United Kingdom have additional requirements for entry into universities. The *councours* in France and A-levels in the United Kingdom.

Vocational as Opposed to Academic

On the whole the university sector emphasizes academically-oriented courses and the other sector frequently place more emphasis on vocationally-oriented courses. However many establishments in the university sector also provide vocationally-oriented courses.

Doctorates

The possibility of studying for a doctorate is the sole preserve of the university in practically all countries. This does not mean that the only candidates admitted are those with a university (Master's) degree.

Kivinen, O., and R. Rinne. 1996. "The Problem of Diversification in Higher Education: Countertendencies between divergence and convergence in the Finnish higher education system since 1950s." In Meek, et al. *The mockers and mocked: Comparative perspectives on differentiation, convergence and diversity in higher education*. Oxford: Pergamon.

Gender remains an important factor in educational choices. For instance, the male domination in technical fields of study and the female domination in caring fields have both remained more or less in tact. If education is examined as a hierarchy, then we find more clearly, than before, that the middle echelons are occupied by women. At the very top of the hierarchy, men continue to dominate, in numerical terms, postgraduate studies at university level. On the lower levels of the hierarchy, men also constitute the clear majority on the shortest and most practically oriented pathways, leaving them often with only basic schooling.

In the USA systematic diversity has always been regarded as a guarantee of excellence and the precondition for higher education to respond flexibly to the needs of society. A standardized higher education system is incapable of adequately responding to the educational needs of both the elite and the masses. Mass systems must be more differentiated than elite ones as they absorb a more heterogeneous clientele, respond to new demands from the labor market, and attempt to cover a wider range of knowledge. A system of elite higher education without the balancing force of mass higher education would not be politically or socially viable; a system of mass higher education without the academic models and values of elite institution would be unsound educationally and politically.

Morphew, C.C. 2000. "Institutional diversity, program acquisition and faculty members: examining academic drift at a new level." *Higher Education Policy* 13:55–77.

The diversity of higher education state systems is an indicator of their quality and ability to meet changes in student population. As the needs of regions and students change, diverse institutions and systems can meet the changing needs of their population, and provide comprehensive education in a high quality fashion. Academic drift, because it reduces the diversity of institutional types within a higher education system, impacts negatively upon the programmatic diversity of a system. Academic drift is also an indicator of a higher education's system's relative inefficiency.

Meek, V.L. 2000. "Diversity and marketisation of higher education: incompatible concepts?" *Higher Education Policy* 13:23–39.

A number of factors have encouraged if not forced governments towards a market orientation for higher education, including;

- The substantial costs associated with mass higher education, which have led to a concern by government to realize more value per dollar committed in this sector.
- A clear expectation by government that the higher education sector is more closely tied to the national economy—both in terms of meeting national labor market needs and also through the commercialization of its research and teaching activities.
- As a larger proportion of the population expresses an interest in participating in higher education, inevitably, higher education also becomes more of a political issue.
- Due to an ageing population, the social service burden on the national treasury is rising dramatically, which is coupled with pressures to cut government expenditure and to demand greater efficiencies from public sector institutions.
- In all industrialized countries, traditional manufacturing industries are being replaced by the so-called knowledge processing sector, of which higher education is an integral part.

These factors are not peculiar to any one country, but are in fact part of a much broader process of economic globalization. This has resulted in a fundamental and political redefinition of the social value of public service in general and of universities and education in particular. Moreover, the mission of the university is thus increasingly understood as that of being “accountable” to those who pay for it, whether these are understood to be large corporations, individual taxpayers or even students.

A number of countries, such as Australia, New Zealand and the United Kingdom have increasingly relied on market competition to achieve many of their higher education policy objectives, including that of diversity. But in terms of extremes, there are two possible institutional responses to increased market competition: institutions can diversify in an attempt to capture a specific market niche, or they can imitate the activities of their successful competitors. There are two crucial factors influencing the direction of higher education diversity: (1) the way in which governments structure the policy environment and (2) the relative power of academic norms and values within higher education institutions.

Neave, G. 2000. “Diversity, differentiation and the market: the debate we never had but which we ought to have done.” *Higher Education Policy* 13:7–21.

Differentiation through setting up an alternative sector to the university was most definitely market related. But it was a determination as perceived and mediated by government, rather than a process determined by institutions of higher education acting on their own initiative. Second, if binary institutions were alternatives to university, they were also auxiliaries and were seen as acting in a complementary capacity to the university. Some scholars have seen this particular arrangement as a policy of deflection. That is, an attempt to preserve that traditional function of the university to supply the cadres for the public sector whilst putting upon short cycle higher education the responsibility for meeting changes in skills demanded at a lower level and in the short and medium term by the private sector. If we retain this interpretation, then clearly institutional segmentation had the unavowed purpose of channeling mass demand away from the historically elite sector and placing the main burden of acting as the receptacle for mass higher education upon non-university institutions.

Why then did the deflection through differentiation fail? And what were its consequences? The drive to mass education in Western Europe was almost wholly the product of state intervention. It was accomplished almost wholly by institutions public in nature. In Norway and Britain, the phenomenon of academic drift swiftly turned them aside from their original mission. Institutions supposedly differentiated from the university, sought for reasons of prestige and standing, to emulate and literally to reproduce their elders if not their betters.

Diversity (the condition) diversification (the process) and differentiation (the outcome) as I pointed out at the beginning of this paper, carry with them very special views on what ought to be proper relationship between government, higher education and society, just as, on a broader plane, they also represent a particular vision of the relationship that ought to exist between the local and the national communities.

Gamage, D.T. 1993. “The reorganization of the Australian higher educational institutions towards a unified national system.” *Studies in Higher Education* 18(1):14.

In the Australian context, when one refers to the binary system, it means the division in the higher education system known as the university sector and CAE sector. This was a direct consequence of a 1965 report of the committee of inquiry into the future of tertiary education (Martin report). A new sector was created by bringing together a disparate group of largely single purpose institutions including teachers' colleges under the umbrella title of "Colleges of Advanced Education" (CAEs). Two funding systems were introduced to be administered by two separate commissions supported by two sets of legislative enactments. In 1975, the binary system's structure was weakened with the establishment of a single commission the Commonwealth Tertiary Education Commission (CETC). Yet, two different councils were established under the CETC to recommend funding to two sectors. Once again, this position was further weakened in 1985, when the councils were reduced to advisory status.

In the meantime, the academic program offered by CAEs were strengthened, Some went to the length of introducing postgraduate programs, including the enrollment of PhD students leading to involvement in research projects. There were many developments, which further blurred the distinction between the two sectors. Professional programs except in medicine, veterinary science, and law came to be offered in both sectors. Thus by 1987, the only apparent difference was that universities received funds for research whereas CAEs did not. This situation became a focus for debate between the two sectors. The universities highlighted their excellence in research, while CAEs emphasized their growing research capacity, as it was depicted as the only difference.

Barnett, R. 1990. *The idea of higher education*. Suffolk: Open University Press.

Higher education in the UK was provided almost entirely by universities. However, the last 25 years have seen first the establishment and then the development of a system of higher education in non-university institutions, principally the polytechnics, but also a large number of other institutes and colleges of higher education. In terms simply of numbers of undergraduates, the polytechnics and colleges sector now cater for about 40 percent of students on undergraduate and postgraduate courses.

The Value Background of Higher Education

1. The pursuit of truth and objective knowledge.
2. Research
3. Liberal education
4. Institutional autonomy.
5. Academic freedom
6. A neutral and open forum for debate
7. Rationality
8. The development of student's critical abilities.
9. The development of the student's autonomy.
10. The student's character formation.
11. Providing a critical centre within society.
12. Preserving society's intellectual culture. P.9

Altbach, P.G. 1999. "The logic of mass higher education." In I. Fagerlind, I. Holmesland, and G. Stromqvist, eds., *Higher Education at the Crossroads: Tradition or Transformation?* Stockholm: Institute of International Education.

There are a number of approaches to differentiation of higher education worldwide. A few examples will illustrate patterns. In the United States, higher education does show differentiation of public higher education within states. While California is the best known and perhaps the most effective example of a state-wide system planning in the public higher education sector, multi-campus systems exist in almost every state. The traditional American pattern of boards of trustees and a strong president accountable directly to the trustees is generally compatible with the expansion of universities. The Dutch have pioneered the trends that will likely occur in other countries: enhancing the influence of the administration, requiring greater direct accountability to government, the diminishing of professional power and the elimination of meaningful student participation in governance. Changes in the British Higher education system during the Thatcher regime in the 1980s also brought significant alterations in governance. Higher education was made more directly accountable to government with the abolition of the University Grants Committee, and the elimination of the "binary" system of universities and polytechnics created by the Robbins Commission eliminated so that both sectors are now the same and can compete. P 105/106.

Ross, A. 2003. "Access to higher education: Inclusion for the masses?" In L. Archer, M. Hutchings, and A. Ross, eds., *Higher Education and Social Class: Issues of exclusion and inclusion*. London: RoutledgeFalmer.

The effects of the binary policy. First, the sector as a whole increased in size much faster than the Robbins Committee had predicted. Second, the rate of increase was particularly marked for women students, who were staying on in sixth-form education, achieving two or more A levels, and entering university at a higher rate of increase than male students. Third, the public sector, particularly the polytechnics, expanded at a very much faster rate than had been predicted or planned. However, at the same time, they were changing in orientation and mission from Crosland and Weaver's vision towards a rather more conventional form of higher education; academic drift set in fairly rapidly after designation. The consequence of this was that the student populations and the courses in the university sector and the polytechnic sector were not as distinctive as they might have been.

Rothblatt, S. 2000. "A Connecticut Yankee? An Unlikely Historical Scenario." In P. Scott, ed., *Higher Education Re-formed*. New York: Falmer Press.

The second feature was differentiation by function and mission, a mix of institutes, research centers, colleges, universities and professional schools that in the 20th century would be discussed as parts of a national system of higher education. Differentiation by function in the United States meant wide variation in admissions and degree standards, the purpose of which was to provide different educational experiences and life chances for different populations. Differentiation by mission also inevitably produced a ranking system or pecking order of institutions, contending in the marketplace for brand name recognition. A historian might conclude that such an outcome was deliberate and virtually designed.

The heterogeneity of the American population, its religious and ethnic divisions, the importance of local and regional factors, the absence of inherited social class and aristocratic

institutions, and the development of private sector of higher education led rapidly in the 19th century to a multiplicity of colleges and universities geared to niche marketing. Comprehensive university??

Bazan, B.C. 1998. "The original idea of the university." In D.L. Jeffre and D. Manganiello, eds. *Rethinking the future of the university*. Ottawa: University of Ottawa Press.

The medieval *uniuersitas* was born as a result of the corporate effort of people who had as a goal the preservation, development and dissemination of scientific knowledge cultivated for its own sake, and who saw in collegiality the best means of attaining this goal. As a community it was not exclusive, it welcomed candidates from every sort of background, it provided its own representatives and directors, and asserted itself before external powers in demanding necessary privileges and rights for the exercise of a common vocation.

Altbach, P.G. 1998. *Comparative Higher Education: Knowledge, the University and Development*. Hong Kong: Comparative Education Research Centre.

The present international educational equation has certain institutional and intellectual "centers" that give direction, provide models, produce research, and in general function as the pinnacles of the academic system. At the opposite end of the spectrum are universities that are "peripheral" in the sense that the copy developments from abroad, produce little that is original, and are generally not at the frontiers of knowledge.

The central institutions are research-oriented, prestigious, and part of an international knowledge system. Their libraries are large and their laboratories well equipped. The central institutions have access to the bulk of research funds, produce a high proportion of the doctoral level research degrees.

Peripheral universities, which are in the large majority, are basically distributors of knowledge, mainly through the training of students and to some extent through the replication of research developed at the centers. They have less distinguished and supportive traditions.

Third world universities are without exception peripheral institutions in an international context. They often lack an orientation toward scholarly production.

The role of universities in the Third world is complicated and diverse. It is difficult to generalize because of variations in colonial development, economic and political realities, and divergent conceptions about the role of higher education in modernizing societies.

Third world nations are basically consumers of knowledge, dependent on industrialized nations for research, interpretations of scientific advances, and, in general, information.

Jarvis, P. 2001. *Universities and Corporate Universities*. London: Kogan Page.

Given that universities do not exist in splendid isolation from the pressures of the 'real' world, and that they are no longer ivory towers, . . . Universities have tried to respond to some of the social pressures of globalization, but with limited success. Their response has appeared to be almost unreflective, since they do not seem to know what the university is any longer. That is, they almost automatically respond to the pressures of social change.

Ball, C., ed. 1989. *Higher Education into the 1990s*. Stratford: Open University Press.

The role of research is also a problem. In an elite system of higher education it is possible to arrange for all teachers to be funded for a dual role, the education of students and the

pursuit of fundamental research. In a popular system of higher education, that is neither possible nor sensible. There is no logic in the assumption that the scale of fundamental research must be determined by the scale of higher education.

Van Vught, F., M. Van Der Wende, and D. Westerheijden. 2002. "Globalisation and internationalisation: policy agendas compared." In J. Enders and U. Fulton, eds., *Higher Education in a Globalising World*. Dordrecht: Kluwer Academic Publishers.

There is a growing and diversifying demand for higher education in countries with an adequate national higher education infrastructure; and established universities in western countries, motivated by decreasing (national) funding for higher education to search for new markets to supply, have perceived this demand as opening up opportunities which they are actively exploring. This process is also driven by the liberalization of educational markets through initiatives of the World Trade Organisation (WTO), in particular the General Agreement on Trade in Services (GATS). In the GATS negotiations, there is an agreement to classify primary and secondary education as public consumption goods, with predominantly public rather than individual benefits. However, for higher education, the balance of public and individual benefits is often seen by educational economists as leaning more towards the individual side. Overtly the U.S. proposal is to "create conditions favorable to suppliers" in the area of job-oriented "training services" and educational testing services, but the fear seems to be that in this way the whole higher education system sector will be opened up to globalized trade. In addition the globalization process is being facilitated by information and communication technology (ICT), which is increasingly used to reach out to distant students who are interested in earning a foreign degree while staying in their own country.

It is generally agreed that the sharp increase in the international mobility of students since the early 1990s demands more sophisticated methods for both academic and professional recognition of foreign qualifications. In response to this problem, the Lisbon Convention on the recognition of academic qualifications was signed in 1997, and various international or global professional organizations have internationalized their procedures for accreditation of higher education programs.

Teather, D.C.B. 1999. *Higher Education in a Post-Binary Era*. London: Jessica Kingsley Publishers.

In 1965 in Australia, in 1967 in Britain and in 1971 in Hong Kong, governments in each of these jurisdictions adopted binary policies of higher education. Such policies assume separate roles and responsibilities for universities on the one hand and for non-university or "public-sector" institutions of higher education on the other. Binary policies were adopted in Australia and Britain at a time of considerable expansion of demand for higher education. By designating a distinct group of non-university institutions as providing genuinely "higher" education, the governments of the day were able to channel a significant proportion of the expansion into these institutions. This had the effect of permitting the universities to retain their former elite characteristics to greater extent than would otherwise have been possible.

Beginning in 1987 in Australia, 1991 in Britain and 1994 in Hong Kong, the binary lines were repositioned. In England and Wales all the former polytechnics adopted the university title. In Australia, where the CAE sector contained a greater diversity of institutions, restructured into universities. The number of universities approximately doubled. P.19

Weber, L.E. 1999. “Survey of the Main Challenges Facing Higher Education at the Millennium.” In W.Z. Hirsch and L.E. Weber, eds., *Challenges Facing Higher Education at the Millennium*. Oxford: Pergamon Press.

- The changing environment: Globalization, the influence of technology
- Missions: Responsive and responsible universities; the changing shape of research universities; emergence of competitors to traditional universities.
- Students and Teaching:
- The academic profession: the changing role of teachers; tenure; developing a new generation of staff.
- Higher education finance: securing revenue; reducing costs.
- Governance:

Rhodes, F.H.T. 1999. “The New University.” In W.Z. Hirsch and L.E. Weber, eds., *Challenges Facing Higher Education at the Millennium*. Oxford: Pergamon Press.

Characteristics of the new American University:

- Institutional autonomy, lively faculty independence and vigorous academic freedom, but strong, impartial, public governance and decisive, engaged presidential leadership.
- Increasingly privately supported, but increasingly publicly accountable and socially committed.
- Campus-rooted, but internationally oriented.
- Academically independent, but constructively partnered.
- Knowledge-based, but students-centered; research-driven, but learning-focused.
- Technologically sophisticated, but community dependent.
- Quality-obsessed, but procedurally efficient.
- Professionally attuned, but humanely informed.

Ogawa, Y. 2002. “Challenging the traditional organization of Japanese universities.” In P.G. Altbach and Y. Ogawa, eds., *Higher Education in Japan. Reform and Change in the 21st Century*. Boston: Centre for International Higher Education.

Universities have separated teaching and research undertakings. Universities regard both undergraduate and graduate schools as pure teaching organizations, and have additionally built research organizations to which faculty members belong. While research organizations tend toward fraternization in the nature of their inquiry, teaching organizations offer appropriate organized knowledge (curricula). In a traditional system, a research organization had to be changed at the same time a teaching organization was changed because both were unified. This was at times problematic because new research activities were not always relevant to the set teaching and training curriculum and would therefore be thwarted. To avoid this conflict, teaching and research functions were separated. P. 96

One of the characteristics of recent reforms in Japanese higher education is the transformation from scattered independent organizations to loosely coupled systems. P 100.

Smith, A., and F. Webster. 1998. *The Post-modern University: Contested Visions of Higher Education in Society*. Suffolk: Open University Press.

The expansion has been accompanied by a squeezing of resources, as is now widely acknowledged, and this has manifested itself in growing students poverty, declining academic salaries, falling academic social status, and in the increasingly shabby fabric of universities themselves. With the growth in student numbers has come a devaluation in the currency of a degree, with graduates no longer feeling confident of achieving high salaries and high status in later life. And alongside this decline have come the charges that standards are declining and that universities are awarding dummy degrees.

Once upon a time the head of a university would be an academic, chosen as the *primus inter pares* of scholars. Today, the typical managerial figure in a university is the chief executive/vice chancellor, brandishing a strategic plan and without high-level academic achievements of his own.

Buaman, Z. 1998. "Universities: Old, New and Different." In A. Smith and F. Webster, ed., *The Postmodern University? Contested Visions of Higher Education in Society*. Suffolk: Open University Press.

It has often been said that the function of universities is not to swim with the tide but to go against it. It is this conviction that underlines the many accounts of the university that stress its maintenance and enrichment of a certain high culture against the encroachment of business, politics and daily life. This line of defense is no longer tenable. An elitist concept is perfectly acceptable in an elitist society. Such is no longer the case in contemporary society.

Afeti, G. 2003. "Promoting Change and Innovation in Tertiary Education: The experience of HO Polytechnic, Ghana." Presented at the Regional Training Conference on "Improving Tertiary Education in Sub-Saharan Africa: Things That Work!," Accra, September 23–25.

The Ho Polytechnic (previously known as the Ho Technical Institute) was established in 1968 as a post primary technical school offering courses in the fields of building construction, commerce and engineering under the general supervision of the Ghana Education Service. In 1993, following the publication of the Government's White Paper on the Reforms to the Tertiary Education System (1), and the promulgation of the Polytechnic Law (2), the Ho Polytechnic was upgraded to the status of a tertiary institution. The Polytechnics are to provide tertiary-level courses in the fields of manufacturing, commerce, science, technology, applied social science, applied arts and other such areas that may be determined by the authority for the time being responsible for higher education.

Mamdani, M. 1994. "A Reflection on Higher Education in Equatorial Africa: Some Lessons for South Africa." Presented at the conference on "The Future Role of Universities in the South African Education System," July 29–30.

Statism emerged as a powerful current in this context precisely because the claims of the nationalist state were not just developmentalist, but also equalizing. It was a claim with great resonance in the society at large, particularly amongst the middle classes and the educated strata.

Soon, in the name of accountability, the state altered the mode of governance of universities. Collegiality was replaced with bureaucracy, and per review by management. Deracialization and democratization?

The supreme irony of the African university in the aftermath of independence was that we were all in favor of maintaining standards, almost at any cost. . . . To maintain quality, the new universities be tied to standards as defined by the University of London. In turn, the Senate of the University of London agreed to work out a new special relationship with the new African universities.

Atchoarena, D., ed. 1996. *The financing and management of vocational education and training in Eastern and Southern Africa*. UNESCO: International Institute for Educational Planning.

The national polytechnics are institutes of higher learning whose main function is to produce skilled middle- and high-level manpower for Kenya's various sectors of the economy, and for the provision of further training opportunities in technical education. National polytechnics offer diversified curricula at diploma and higher national diploma levels.

At present there are three national polytechnics. The total student enrollment is 9,031 students, undertaking various courses in building and civil engineering, surveying and mapping, applied sciences, business education, chemical engineering etc.

The Kenya Technical Teachers College was established to meet the need for teachers in technical and business education.

Task Force on Higher Education and Society. 2000. *Higher Education in Developing Countries: Peril and Promise*. Washington, D.C.: The World Bank.

While horizontal differentiation is driven by increased demand for higher education, vertical differentiation is a reaction to demand for a greater diversity of graduates. Today's developing economy needs not only civil servants, but also a whole host of other professionals such as engineers, pharmacists, and computer scientists. Higher education institutions are adapting and new ones are emerging to provide training and credentials in new areas.

Provincial and regional universities often produce the majority of a county's graduates and tend to lie at the heart of the system's expansion. Some institutions offer two-year tertiary level degrees, much like community colleges in many developing countries. Free standing professional school—provide training in fields such as law, medicine, business, and teaching.

A stratified system is a hybrid that marries the goals of excellence and mass education, allowing each to be achieved within one system and using limited resources. A stratified system comprises one tier that is oriented toward research and selectivity and another that imparts knowledge to large numbers of students.

Mazimhaka, J., and G.F. Daniel. 2000. *Post Genocide Restructuring of Higher Education in Rwanda: An Overview*. Ghana: AAU Occasional Paper.

In South Africa, the Technikon, which used to be restricted to diplomas only, now also awards degrees up to post-graduate level. Typically, in South Africa, one comes across a university graduate in engineering who wants to enroll at the Technikon if he wants to enhance his or her practical skills. Although the practical orientation of the Technikon's programs gives the diplomate an advantage in seeking initial employment, the theory-oriented university training will also come in useful when the recently employed competes for advancement. Movement across institutions of higher education from polytechnic to

university is no longer unidirectional and indeed as in South Africa, the reverse is also quite possible.

Maliyamkono, T.L. "Higher Education in Eastern and Southern Africa." *Prospects* 21(3):352–62.

After independence, African universities sought to include disciplines formerly offered in Europe, as well as programs such as those covering the concepts of education and production, with then main objective of linking theoretical knowledge and practical work in the consciousness of students. A deliberate shift from the emphasis on traditional disciplines of education, engineering, agriculture, general arts and science, medicine, law and commerce was also made. Students can now choose from degree programs in areas such as social work, journalism, surveying and photogrammetry, food science and technology, design and dentistry. In most cases, these new programs reflect perceived national manpower needs and changing technology requirements.

Moses, O. 2000. "Costing and Financing Higher Education for Development in Sub-Saharan Africa: Kenya's Case." *International Education E-Journal* 4(3).

The model of the European research university, with its one-tier program structure, has proven expensive and inappropriate in Kenya and most other developing countries. Increase differentiation in higher education, or the development of non-university institutions and encouragement of private institutions, can help meet the growing demand for higher education and make higher education systems more responsive to changing labor market needs.

Non-university institutions include polytechnics, short-cycle professional and technical institutions, village/community colleges, and distance education. Their low cost programs make them both attractive to students and easier for private providers to set up. In the most successful cases, non-university institutions offer training that responds flexibly to labor market demands and can be linked with university programs through appropriate transfer mechanisms such as credit systems and equivalency provisions. However, in Kenya, there is no clear-cut credit system program that links these non-university higher education institutions with universities. Hence, the general community views those in these colleges as failures who will never have a chance for a university degree.

Pratt, J. 2000. "Sustaining 'Technological Universities: The British Experience.'" Conference paper.

Although, in the end, the polytechnics succumbed to the temptation to acquire conventional university titles in 1992, by the time they did so, the universities also were significantly different from the institutions they were in 1965 when the binary policy was inaugurated. They too had begun to recognize the importance of a vocational emphasis, to accept students with a wider range of entry qualifications, to offer greater choice through modular courses and a greater concern for the student's learning. It became possible to talk of "vocational drift" of the universities as much as academic drift of the polytechnics, and of a blurring of the boundaries between the sectors.

Sutherland-Addy, E. 1993. *Revival and Renewal: Reflections on the creation of a system of tertiary education in Ghana*. Washington, D.C.: The World Bank.

The framework to be used was a network of tertiary institutions offering certificates and diplomas, with institutions such as polytechnics upgraded to eventually provide them

with the capacity to offer degrees to a restricted number of candidates. These institutions were believed to have the advantage of being able to quickly adapt courses in response to the job market.

Brown Sherman, M.A. 1993. *Building Consensus for Higher Education Reform in Africa: Some Reflections*. Washington, D.C.: The World Bank.

Africa has a marginal place in the global economy. Africa's universities are part of an international academic system and are "peripheral" to that system. One consequence is the considerable intellectual dominance, which impinges on the continent. In line with this is the large amount of research related to the continent done by academics and universities foreign to the continent.

There can be no real consensus for higher education reform without a focus on non-university institutions. The tendency to regard as inferior these institutions, which are mainly involved in teacher education, technological or vocational specializations must be eschewed. It hardly needs to be reiterated that Africa is short of skilled persons in education, the sciences and technology. The teachers and the facilities for training such persons should be wisely used. Consultations are needed between the universities and other higher education institutions in order to weigh the strengths of these institutions and to consider such possibilities as transfer of credits, sharing of facilities, and even joint programs, where feasible.

Saint, W.S. 1992. *Universities in Africa: Strategies for Stabilization and Revitalization*. Washington, D.C.: The World Bank.

For governments who would like to expand access to higher education without prompting proportional growth in public sector budgets for education, system differentiation provides a solution. "The most effective approach is an institutional diversification strategy whereby the social demand for higher education is managed through the development of a variety of lower cost alternative institutions differentiated in terms of missions, function and modes of delivery.

A differentiated higher education system might include some or all of the following types: traditional colleges and universities, community colleges, polytechnics or technical institutes, adult or continuing education programs, productive sector training programs and distance learning programs.

When higher education systems are more differentiated, they can accommodate a larger and more diverse student body in cost-effective ways. Continuing education and in-service training programs enable workers to upgrade their professional skills and improve their earning capacity.

In Africa, system differentiation is generally at an intermediate stage. Polytechnics are frequently found and teachers colleges are common, but tend to be accorded a clearly inferior status by students and governments.

Even where higher education systems are differentiated as institutional missions, they are rarely differentiated in their financing. African institutions/systems of higher education receive 85 percent or more of their funding from government. 107–108.

AAU and the World Bank. 1997. *Revitalizing Universities in Africa*. Washington, D.C.: The World Bank.

The case for greater diversification of tertiary institutions is both educational and financial. Traditional university programs do not meet the educational needs and situations of many of the aspiring students, for whom other kinds of courses are more suitable. When the tertiary system is founded on some degree of cost sharing, and when student mobility among the different programs is assured, this approach maximizes enrollments per unit of public expenditure. In this context, the potential of distance learning deserves to be explored much more actively in Africa than it has been to date.

References

- Afeti, G. 2002. *Tertiary Education in Africa Today: Non-University Institutions*. Tertiary Education Series, Vol. 2 No. 2. Accra: National Council for Tertiary Education.
- Ajayi, J.F.K., L.K.H. Goma, and G.A. Johnson. 1996. *The African Experience with Higher Education*. Accra: Association of African Universities.
- Altbach, Philip G. 1998. *Comparative Higher Education: Knowledge, the University and Development*. Greenwich, Connecticut: Ablex.
- . 1999. *Private Prometheus: Private Higher Education and Development in the 21st Century*. Westport, Connecticut: Greenwood Press.
- Ashby, Eric. 1966. *Universities: British, Indian, African: A Study in the Ecology of Higher Education*. London: Weidenfeld and Nicolson.
- Badat, S., G. Fisher, F. Barron, and H. Wolpe. 1994. *Differentiation and Disadvantage: The Historically Black Universities in South Africa*. Report to the Desmond Tutu Educational Trust. Bellville, South Africa: Education Policy Unit, University of the Western Cape.
- Ball, C., ed. 1989. *Higher Education into the 1990s*. Stratford: Open University Press.
- Barnett, R. 1990. *The Idea of Higher Education*. Buckingham: Open University Press.
- Breier, M., ed. 2001. *Curriculum Restructuring in Higher Education in South Africa*. Bellville, South Africa: Education Policy Unit, University of the Western Cape.
- Breier, M. 2003. *The recruitment and recognition of prior informal experience in the pedagogy of two university courses in labor law*. PhD thesis, University of Cape Town.
- Brown-Sherman, Mary Antoinette. 1993. "Building Consensus for Higher Education Reform in Africa: Some Reflections." Discussion Paper distributed by the Human Resources Division, Africa Technical Department, The World Bank, Washington, D.C.
- Chilundo, A., 2003. "Mozambique." In Damtew Teferra and Philip G. Altbach, eds., *African Higher Education: An International Reference Handbook*. Bloomington, Indiana: Indiana University Press.
- Chimombo, J.P.A. 2003. "Malawi." In Damtew Teferra and Philip G. Altbach, eds., *African Higher Education: An International Reference Handbook*. Bloomington, Indiana: Indiana University Press.
- Chung, Sungchui. 2007. "Korean Development of Technology Adaptation Institutes." Paper presented at the "Global Forum: Building Science, Technology and Innovation Capacity for Sustainable Development and Poverty Reduction," February 13–15, Washington, D.C.
- Cloete, N., P. Pundy, S. Badat, and T. Moja. 2003. *National Policy & Regional Response in South African Higher Education*. Partnership for Higher Education in Africa. London: James Currey and Oxford.
- Cohen, A.M., and F.B. Brawer. 1989. *The American College* (2nd ed.) San Francisco: Jossey-Bass Publishers.

- Commission for Higher Education. 1990. "The Directory of Post-Secondary Institutions and Courses (Excluding Universities) in Kenya." Nairobi.
- . 2000. Survey of Higher Education Institutions reported in the Higher Education Sub-Sector Policy for Rwanda proposed by the Committee on Higher Education, June.
- Cooper, D. 1994. *Science and Technology—A Hidden Crisis of Post-Secondary Education in South Africa? Shape and Size of S&T in the Technikons*. Research Report No 1. Cape Town: Education Policy Unit, University of the Western Cape.
- . 1995. "The shift away from technology-oriented fields by students in the technikons." *South African Journal of Higher Education* 9(1):92–100.
- Cooper, D., and G. Subotzky. 2001. *The Skewed Revolution: Trends in South African Higher Education: 1988–1998*. Cape Town: Education Policy Unit, University of the Western Cape.
- Darvas, Peter. 2007. "Tertiary Education in Sub-Saharan Africa: An Overview." Africa Region Human Development Department, World Bank, Washington, D.C. Processed.
- Darvas, G., 2007. *Symmetry: Cultural-historical and Ontological Aspects of Science-Arts Relations; the Natural and Man-made World in an Interdisciplinary Approach*. Basel: Birkhäuser.
- Department of Education, South Africa. 2006. *Education Statistics at a Glance in South Africa in 2005*. Pretoria.
- Education Policy Unit (EPU). 1997. *The Enhancement of Postgraduate Programmes and Research Capacity in the Historically Black Universities*. Research report. Cape Town: Education Policy Unit, University of the Western Cape.
- Effah, P. 2004. "Private Higher Education in Ghana." Paper presented at the Policy Forum on Private Higher Education in Africa, Accra, Ghana, November 2–3.
- Enders, J., and O. Fulton, eds. 2002. *Higher Education in a Globalising World: International Trends and Mutual Observations*. A Festschrift in Honour of Ulrich Teichler. Dordrecht: Kluwer Academic Publishers.
- Ensor, P. 2002. "Curriculum." In N. Cloete, R. Fehnel, T. Gibbon, P. Maassen, T. Moja, and H. Perold, eds., *Transformation in Higher Education: Global Pressures and Local Realities in South Africa*. Landsdowne, South Africa: Juta and Company.
- Federal Republic of Nigeria. 1999. *Report of the Committee to look into the modalities for mounting degree programmes in selected polytechnics and colleges of education*. Abuja, Nigeria.
- File, J., and L. Goedegebuure, eds. 2000. *Thinking about the South African Higher Education Institutional Landscape. An International Comparative Perspective on Institutional Differentiation and Restructuring*. Pretoria: Council on Higher Education.
- Galabawa, J.C. 1991. "Funding selected issues and trends in Tanzanian higher education." *Higher Education* 21(1):49–61.
- Ghana Statistical Service. 2002. *2000 Population and Housing Census Report*. Accra, Ghana.
- Gibbons, M. 1998. "Higher Education Relevance in the 21st Century." Paper presented at the UNESCO World Conference on Higher Education.
- Gibbons, M., C. Limoges, H. Nowotny, S. Schwartzman, P. Scott, and M. Trow. 1994. *The New Production of Knowledge*. London: Sage.
- Githinji, P. 1999. "University of Dar es Salaam, Tanzania." In Svava Bjarnason and Helen Lund, eds., *Government/University Relationships: Three African Case Studies*. London: Commonwealth Higher Education Management Service.

- Halai, A., and J. Rarieya, eds. 2003. *Impact: Making a Difference*. Proceedings of an international conference held at the Aga Khan University Institute for Educational Development, August 28–30. Aga Khan University Institute for Educational Development.
- Hannan, M.T., and J. Freeman. 1993. *Organizational Ecology*. Harvard: Harvard University Press.
- Harris, J. 1996. *Articulation and Transfer into and within a South African Higher Education System*. National Commission on Higher Education, Task Group 5, Technical Committee 4, Paper 3.
- Hayes, D., and R. Wynyard. 2002. *The McDonaldisation of Higher Education*. Westport, Conn.: Bergin and Garvey.
- Hendriks, B. 2005. *Regional integration processes and their dynamics for external quality assurance: What can other regions learn from the Bologna process?* Policy Forum on Accreditation and the Global Higher Education Market, International Institute for Educational Planning, IIEP, Paris, June 13–14.
- Huisman, J. 1996. "Diversity in the Netherlands." In Meek and others, eds., *The Mockers and Mocked: Comparative Perspectives on Differentiation, Convergence and Diversity in Higher Education*. Oxford: Pergamon Press.
- Inter-University Council for East Africa. 2001. Newsletter No. 22 (January), Kampala.
- . 2003. Newsletter No. 22 (March), Kampala.
- . 2003. Newsletter No. 22 (September), Kampala.
- ISSER (Institute of Statistical, Social and Economic Research). 1999. *The State of the Ghanaian Economy in 1998*. Legon, Ghana.
- Iyaku, K. 2000. "Teacher Education in the 21st Century Nigeria: Vision and Action." National Commission for Colleges of Education, Kaduna. Processed.
- Jarvis, P. 2001. *Universities and Corporate Universities: The Higher Learning Industry in Global Society*. Sterling, Va.: Stylus Publishing.
- Jibril, M. 2003. "Nigeria." In Damtew Teferra and Philip G. Altbach, eds., *African Higher Education: An International Reference Handbook*. Bloomington, Indiana: Indiana University Press.
- Kenya, Republic of. 1964. *Report of the Kenya Education Commission*. Nairobi: English Press.
- Kigali Institute of Science, Technology, and Management (Rwanda). Web site: www.kist.ac.rw.
- Lulat, Y. G-M. 2003. "Zambia." In Damtew Teferra and Philip G. Altbach, eds., *African Higher Education: An International Reference Handbook*. Bloomington, Indiana: Indiana University Press.
- Mazeran, Jacques, ed. 2007. *Short-Term Vocational Higher Education*. Paris: Hachette Livre.
- Mazimhaka, J., and G.F. Daniel. 2000. *Post Genocide Restructuring of Higher Education in Rwanda: An Overview*. Ghana: AAU Occasional Paper.
- . 2003. "Rwanda." In Damtew Teferra and Philip G. Altbach, eds., *African Higher Education: An International Reference Handbook*. Bloomington, Indiana: Indiana University Press.
- Meek, V. 2000. *Diversity and marketisation of higher education: incompatible concepts?* *Higher Education Policy* 13:23–39.
- Ministry of Education (Malawi). 1997 *Education Sector: Policy Investment Framework*. Lilongwe.

- Ministry of Education, Youth and Sports (Ghana). 2004. *White Paper on the Report of the Report of the Education Reform Committee*. Accra.
- Ministry of Higher Education (Cameroon). 1993. *Higher Education Reforms in Cameroon*. Yaounde.
- Ministry of Higher Education, Science and Technology (Mozambique). 2000. Mozambique Strategic Plan for higher education.
- Ministry of Science, Technology and Higher Education. 1999. *National Higher Education Policy*. Report EJ/T/3/73. Dar es Salaam.
- Mkunde, D., B. Cooksey, and L. Levey. 2003. *Higher Education in Tanzania: A Case Study*. Partnership for Higher Education in Africa. London: James Currey and Oxford.
- Morphew, C.C. 2000. "Institutional diversity, program acquisition and faculty members: examining academic drift at a new level." *Higher Education Policy* 13:55–77.
- . 2002. "A rose by any other name: Which colleges became universities?" *Review of Higher Education* 25(2):207–23.
- Mouzinho, M., P. Fry, L. Levey, and A. Chilundo. 2003. *Higher Education in Mozambique: A Case Study*. Partnership for Higher Education in Africa. London: James Currey and Oxford.
- Musisi, N.B., and Muwanga, N.K. 2003. *Makerere University in Transition 1993–2000: Opportunities and Challenges*. Partnership for Higher Education in Africa. London: James Currey and Oxford.
- Mwiria, K., N. Ng'ethe, D. Wesonga, C. Ngome, D. Ouma, and V. Wawire. 2007. *Public and Private Universities in Kenya: New Challenges, Issues and Achievements*. Partnership for Higher Education in Africa. Nairobi: James Currey, Oxford and East African Educational Publishers.
- National Council for Higher Education (Uganda). 2006. *The State Of Higher Education and Training in Uganda 2005: A Report on Higher Education Delivery and Institutions*. Kampala.
- National Universities Commission, 1999. *Annual Report*. Abuja, Nigeria.
- Neave, G. 2000. "Diversity, differentiation and the market: The debate we never had but which we ought to have done." *Higher Education Policy* 13:7–21.
- Ndiaye, H-G. 2003. *Senegal*. In Damtew Teferra and Philip G. Altbach, eds. *African Higher Education: An International Reference Handbook*. Bloomington, Indiana: Indiana University Press.
- Ng'ethe, N. 2006. "National and Regional Superstructures For Higher Education in Kenya, Uganda and Tanzania." A Research Report to the Rockefeller Foundation.
- Ng'ethe, N., J. Galabawa, and N. Muwanga. 2006. "Investing In Higher Education By The Aga Khan University: Feasibility Study For New Emerging Programme Priorities In East Africa." A Report to the Aga Khan University
- Ng'ethe, N., and Kilemi Mwiria. 2003. "Public University Reform in Kenya: Mapping the Key Changes of the Last Decade." A research report commissioned by the Rockefeller Foundation, Nairobi.
- Ngome, C.K., 2003. "Kenya." In Damtew Teferra and Philip. G. Altbach, eds. *African Higher Education: An International Reference Handbook*. Bloomington, Indiana: Indiana University Press.
- Njeuma, D.L. 2003. "Cameroon." In Damtew Teferra and Philip G. Altbach, eds. *African Higher Education: An International Reference Handbook*. Bloomington, Indiana: Indiana University Press.

- Njeuma, D.L., H.N. Endeley, F.F. Mbuntum, N. Lyonga, D. Nkweteyim, and S.N. Musenja. 1999. *Reforming a National System of Higher Education: The Case of Cameroon*. Paris: ADEA Working Group on Higher Education.
- Ogawa, Y. 2002. "Challenging the traditional organization of Japanese universities." In P.G. Altbach and Y. Ogawa, eds., *Higher Education in Japan. Reform and Change in the 21st Century*. Boston: Centre for International Higher Education.
- Ohene, E. 2005. Speech delivered at 1st congregation of Sunyani Polytechnic. *Daily Graphic*, May 3, Ghana.
- Okebukola, P. 2005. Personal communication.
- Pelikan, J. 1992. *The Idea of the University: A Re-examination*. New Haven: Yale University Press.
- Pratt, G., and D. Poole. 2000. "Globalisation and Australian universities: Policies and impacts." *The International Journal of Public Sector Management* 12(6):533–44.
- Rhodes, F.H.T. 1999. "The New University." In W.Z. Hirsch and L.E. Weber, eds., *Challenges Facing Higher Education at the Millennium*. Oxford: Pergamon Press.
- Ross, A. 2003. "Access to higher education: Inclusion for the masses?" In L. Archer, M. Hutchings, and A. Ross, eds., *Higher Education and Social Class: Issues of exclusion and inclusion*. London: RoutledgeFalmer.
- Rothblatt, S. 2000. "A Connecticut Yankee? An Unlikely Historical Scenario." In P. Scott, ed., *Higher Education Re-formed*. New York: Falmer Press.
- Saint, W.S. 1992. *Universities in Africa. Strategies for Stabilization and Revitalization*. Washington, D.C.: The World Bank.
- Sawyer, A. 2002. *Challenges Facing African Universities*. Accra: Association of African Universities.
- Scott, P. 1998. "Massification, internationalization and globalization." In P. Scott, eds., *The Globalization of Higher Education*. London: The Society for Research into Higher Education and Open University Press.
- . 2000. "Globalisation and Higher Education: Challenge for the 21st Century." *Journal of Studies in International Education* 4:3–10.
- Shabani, J. 2006. "Higher Education in French-Speaking Sub-Saharan Africa." In J. James, F. Forest, and Philip G. Altbach, eds., *International Handbook of Higher Education*. The Hague: Springer.
- Sherman, M.A.B. 1993. *Building Consensus for Higher Education Reform In Africa: Some Reflections*. Discussion Paper. Washington D.C.: The World Bank.
- Smith, A., and F. Webster. 1998. *The Post-modern University? Contested Visions of Higher Education In Society*. SRHE and Open University Press.
- Sonu, Jungho. 2007. "Imitation to Industrialization: The Case of Korea." *Development Outreach*. Washington, D.C.: World Bank Institute.
- Subotzky, G. 2003. "South Africa." In D. Teferra and P.G. Altbach, eds., *African Higher Education: An International reference handbook*. Bloomington, Indiana: Indiana University Press.
- . 2004. "Private Higher Education and Training." In *Human Resource Development Review 2003: Education, Employment and Skills in South Africa*. Pretoria: HSRC Press and East Lansing: Michigan State University Press.
- Teather, D.C.B., ed. 1999. *Higher Education In A Post-Binary Era*. London: Jessica Kingsley.

- Teferra, Damtew, and Philip. G. Altbach, eds. 2003. *African Higher Education: An International Reference Handbook*. Bloomington, Indiana: Indiana University Press.
- Uganda, Republic of, 2004. "The National Report on the Development of Education in Uganda at the Beginning of the 21st Century." Paper submitted to the 47th Session of the International Conference on Education, Geneva Switzerland, September 8–11, http://www.ibe.unesco.org/International/ICE47/english/Natreps/reports/uganda_rev.pdf.
- Van Vught, Frans. 1992. *Governmental Strategies and Innovation in Higher Education*. London: Jessica Kingsley.
- Vught, F., M. Wende, and D. Westerheijden. 2002. "Globalisation and internationalisation: Policy agendas compared." In J. Enders, and O. Fulton, eds., *Higher Education in a Globalising World. International Trends of Mutual Observations*. A Festschrift in Honour of Ulrich Teichler. Dordrecht: Kluwer.
- Weber, L.E., 1999. "Survey of the Main Challenges Facing Higher Education at the Millennium." In W.Z. Hirsch and L.E. Weber, eds., *Challenges Facing Higher Education at the Millennium*. Oxford: Pergamon Press.
- World Bank. 1994. *Higher Education: The Lessons of Experience*. Development in Practice Series. Washington, D.C.
- . 1997. *Revitalizing Universities in Africa*. Washington, D.C.
- . 2000. *Higher Education in Developing Countries: Peril and Promise*. Task Force on Higher Education and Society. Washington, D.C.
- . 2006. "Nigeria: Science and Technology Education at the Post-Basic Level." Report No. 37973. Africa Region Human Development Department, The World Bank, Washington, D.C.
- Young, M. 2003. "Options for the NQF in South Africa. A Conceptual Critique of 'An Interdependent Qualification Framework System.'" A Consultative Document prepared by a Joint Task Team of the Departments of Education and Labor. Processed.

Eco-Audit

Environmental Benefits Statement

The World Bank is committed to preserving Endangered Forests and natural resources. We print World Bank Working Papers and Country Studies on 100 percent postconsumer recycled paper, processed chlorine free. The World Bank has formally agreed to follow the recommended standards for paper usage set by Green Press Initiative—a nonprofit program supporting publishers in using fiber that is not sourced from Endangered Forests. For more information, visit www.greenpressinitiative.org.

In 2007, the printing of these books on recycled paper saved the following:

Trees*	Solid Waste	Water	Net Greenhouse Gases	Total Energy
264	12,419	96,126	23,289	184 mil.
<small>*40' in height and 6-8" in diameter</small>	Pounds	Gallons	Pounds CO ₂ Equivalent	BTUs

