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The American University in Cairo

School of Global Affairs and Public Policy

**REFORM PROGRAMS IN DEVELOPING COUNTRIES: HIGHER
EDUCATION REFORM AND ACCOUNTABILITY IN MOZAMBIQUE**

A Thesis Submitted to

Department of Public Policy and Administration

**In partial fulfillment of the requirements for
the degree of Master of Public Administration**

By

Bernardete Sebastiao Gomana

(under the supervision of Dr. Hamid Ali)

May/2012

ABSTRACT

The American University in Cairo
School of Global Affairs and Public Policy
Department of Public Policy and Administration

REFORM PROGRAMS IN DEVELOPING COUNTRIES: HIGHER EDUCATION REFORM AND ACCOUNTABILITY IN MOZAMBIQUE

Bernardete Sebastiao Gomana

Supervised by Dr. Hamid Ali

The present research deals with the question of education in Mozambique. It is an analysis on the tertiary education or higher education sub-sector. Considering the importance of this sub-sector to the economic and social development, the reform undertaken to address the deficiencies in education sector is one of the main tools of analysis. In fact, in the wave of African reforms, Mozambique introduced reforms at different levels of society, and higher education is considered as one of the government's priority. Therefore, to analyze and assess the reforms in higher education, the research uses the expansion of education physically and quality, and the access and equity. In the study, the data were collected from the Ministry of Education and Culture in Mozambique. Those data were analyzed taking into consideration the Strategic Plan for Higher Education (SPHE) 2000-2010. SPHE is another main reference of the study. The time frame of the study is 2003 to 2007 due to the data availability. The results should be considered as being partial ones, because not all objectives of this plan were analyzed. The findings show that there is an improvement in higher education based on the expansion of higher education institutions, access and equity. From 9 higher education institutions in 2001, there are more than 40 institutions and all 11 provinces are covered. Moreover, the access improved, but there is a need to improve female participation as well. The improvement verified brings other challenges for quality improvement and investment. Government responsiveness is one of the factors for the success of reform program. Mozambique's government should consider the process of reform as a continuous one.

DEDICATION

To those who give me an unconditional love and support, to my beloved parents, to both of you Sebastiao Jose Gomana and Leia Zacarias Guenha; I have no words to say how much I am grateful to you, your prayers have sustained me in the past two years. Therefore, I would like to say thank you.

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ABBREVIATIONS

ADEA - Association for Development of Education in Africa

MHEST – Ministry of Higher Education Science and Technology

NES – National Education System

NCHE – National Council for Higher Education

PARPA - Action Plan for the Reduction of Absolute Poverty

SPHE – Strategic Plan of Higher Education

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I. Introduction

The issue of education is a concern worldwide and Africa is not an exception. In this part of the world, higher education is a sub-sector which has been facing some constraints in terms of its effectiveness. The continent has been struggling to reform the education system as a whole, and higher education, in particular, has received more attention, because “universities are generators of development and of modernization,” Seddou, K. F. (2003). The ultimate objective of education reform is to bring more effectiveness in terms of quality and access. Almost all higher institutions in Africa shifted from the colonial system to a new one and embraced reform programs to bring more quality. As Seddou states, “at a time of crisis and scarce resources, African institutions must be both effective and efficient” (*ibid*: 34). Sall, Hamidou and Ndjaye, Baye (2008), confirm the importance of reforms to adapt higher education to the local environment.

Mozambique is one of the developing and African countries that fall within the scenario described above. In fact, as is the case with many African countries, its higher education system was seemed as problematic. From lack of infrastructure facilities to quality in terms of curricula, the country is facing difficulties to deliver knowledge in the higher education degree. For instance, most classes at universities are overcrowded. This situation compromises the teaching/learning process and reduces the quality of classes’ delivering. It is based on these constraints that the Mozambique’s government conceived the SPHE, focusing on the following six aspects and/or objectives:

- meeting social demand: access and equity
- meeting labor market demands and national needs: flexibility and responsiveness

- using available resources more efficiently, diversifying financial sources of the institutions
- diversifying institutions, training opportunities, and forms of delivery
- enhancing and ensuring quality, and
- redefining the role of government.

The SPHE has a national scope and a broad picture of higher education, not only considering universities, but also the all higher educational institutions. According to the plan in itself, it aims “at its expansion to other regions of the country, thus contribution for its development, to reduce regional asymmetries and to the progress of the country,” SPHE (2000). The plan still states that the government has a huge responsibility in the development of higher education and the accomplishment of the strategic plan mainly by identifying priorities and developing policies. Holistically, the government intention is to reduce poverty as “the goals of the Strategic Plan for Higher Education in Mozambique for the Period 2000-2010 are congruent with the central political goals of the current five-year presidential term: the reduction of poverty,” Chilundo and Berverwijk (n.d.).

A. Statement of the Problem

Mozambique’s government reform is still a work in progress. The country only gained its independence in 1975, and during the period of colonialism the system of education was weak. As was the case with many African countries, the government inherited a colonial education system which was based on discrimination. The government is now trying to improve the system as a whole. Therefore, Mozambique’s government has concentrated its efforts since the last decade in reform initiatives to address effectiveness and efficiency in the public sector. The

government has been implementing all kind of reforms to meet the needs of the citizens. Higher education reform is part of the government efforts towards efficiency and delivery. Holistically, the process was incorporated into a national plan called The Action Plan for the Reduction of Absolute Poverty (PARPA, 2001-2005). There was a need to improve higher education which contained some deficiencies as “Mozambique has a dramatic deficit in terms of professionals with higher education,” World Bank (2001). In addition, according to Chilundo, Arlindo (2006), there was a lack of effectiveness, a lack of harmonization of the Mozambican and regional curricula, and a lack of financial resources to foster expansion of higher education institutions. To address the inefficiency in higher education “in 1991, the Government submitted a bill to Parliament, which led to the approval of the first Law of Higher Education, which established *inter alia* the National Council for Higher Education (NCHE). This Law laid the legal basis for the approval of new higher education institutions to be created,” (*ibid*).

To be more precise, through the quantitative method with Mozambique as the case study and making use of data provided by the Ministry of Education, the study will discuss the reform in higher education to analyze its performance in terms of implementation. The purpose of studying education and/or higher education reform in Mozambique is to analyze whether there is an improvement based on the government program implemented in 2000¹. Education is an important tool to society and trains people to find solutions for many issues regarding human development. The research also intends to contribute in the struggle against poverty in the country.

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1. The year of the adoption of the Strategic Plan for Higher Education Reform.

In fact, According to the World Bank (2011), education “is universally recognized as one of the most fundamental building blocks for human development and poverty reduction.” The purpose of this study is to address education as a basis for development. Practically, the study will measure the improvement of higher education, considering the SPHE as the basis of analysis, and identify its obstacles by assessing the reform undertaken on the sub-sector of higher education. As was mentioned before, there are six main objectives of the SPHE. For the purpose of this research, indicators used will include the expansion of higher education institutions and quality, and the access and equity.

This research takes into consideration the relation between improvement and reform variables; that is, it studies the implementation of reform in the higher education to analyze the level of improvement. The focus on higher education is due its importance as an approach to form people capable of finding answers to different concerns of the country. Moreover, as the process of reform in education in general and higher education in particular is still ongoing, there is a need to study what has been done, assess the achievements so far, and provide some inputs to the process.

1. Research Question

Using school construction, quality improvement, and access and equity, the research question presented is: to what extend has higher education improved in Mozambique since the implementation of SPHE?

2. Hypothesis

My hypothesis is that higher education has been improved in Mozambique since the implementation of the reform program. To measure improvement, the study will look at the following indicators: the expansion of higher education institutions and the improvement of its quality, and the access and equity.

This study is divided into six chapters: the introductory part includes the statement of the problem, the background; chapter 2, the literature review which discusses the higher education in Africa looking at the main challenges and reform undertaken in some countries to bring experiences of other realities to the Mozambican context. Chapter 3 presents the method and techniques used as well as the description of the nature of data used and their limitations. Chapter 4 is the analysis of the data and results. Chapter 5, the implication of findings is also discussed as well as some recommendations are appointed based on the analysis of the situation. Finally, the conclusion takes place followed by the references.

B. Conceptual Framework

1. Educational Reform

Educational reform is the main concept of the research. The research discusses the reform in education sub-sector; higher education, and as Assie-Lumumba, N'dri's (2006) definition "the term higher education is taken to embody all organized learning and training activities that includes conventional universities as well as specialized universities such as specialized institutions." The study, also, has this conception; higher education in a broad perspective. According to Lynn and Stein (2001), the reform in higher education is part of Public Administration. Reform programs were undertaken in Mozambique to face economic, political,

and managerial challenges. Higher education was included in these reforms. Despite the implementation of those reforms, the effectiveness of some reforms such as in higher education is still challenging. This takes place as a result of new challenges created in this process such as the proliferation of many private institutions than public ones and the concern for quality. The idea of having more and more higher institutions is welcomed and the private-public partnership is considered as an excellent arrangement; however, few people can afford the tuition and fees of the private institutions. Besides the challenge of private institutions, there is a lack of quality in terms of courses in some higher educational institutions, Bloom and others (2005).

As the statement above, educational reform is an important and crucial aspect to be considered, because it brings efficiency to the system and in the last instance solve the labor market demand for quality. Assie-Lumumba, N'dri (2006), states that “in part because of the lack of higher education commensurate to the needs articulated by Africans during the colonial era, in post colonial Africa emphasis was on increasing supply at all levels, especially higher education.” Then, the research will be looking at the main reform paths undertaken by the Mozambique government in higher education.

2. Improvement of Higher Education

Improvement is a change for the better, so improvement in higher education is about implementing reforms to solve deficiencies. The improvement referred in the research is regarding to the quality and quantity of higher education institutions, as education is “widely accepted as a leading instrument for promoting economic growth,” Bloom and others (2005). Thus, the improvement in higher education is part of the educational system, and it will be considered as an answer to face poverty in the country. As the reform program was implemented

to overcome economic problems in Mozambique, the improvement of higher education is a huge tool to such end. The reform policies undertaken to improve higher education are described in the SPHE, and they are summarized in the mission, vision, and principles designed to that end. The mission states “Higher Education in Mozambique shall guarantee equitable access and participation of all citizens; it shall respond to the needs of the Mozambican society to ensure its capacity of facing the great challenges of the Country’s social, economic and cultural development,” SPHE (2000).

The vision goes from expand access to higher education, improve the quality and relevance of teaching research, increase social, regional and gender equity, and support the development of the competitiveness of Mozambique in the evolving regional and global economic level, *ibid*. Regarding to the principles, they can be resumed in institutional autonomy; efficient use of resources; diversity and flexibility of institutions and courses; democracy, intellectual independence and academic freedom; regional and gender equity; and cooperation with and support to other sub-sector of the National Education System (NES). These are the guidelines to improve higher education sub-sector.

C. Background

Government reform in general is part of the study of Public Policy and Administration, and it is an important aspect to ensure government effectiveness. There is a great demand for reinforcement of reforms to face poverty. Mozambique is also implementing many reforms at all levels, political, social, economic, and managerial. Education is part of managerial reform and one of the sectors that are considered as a priority by the government since the independence. The government’s efforts to reform this sector dated back to the period after the independence.

The system of education in Mozambique has been affected by the political context which is next described. Education reform is based on three different validity periods of the three presidents so far, so the background is basically described in three different contexts:

1. The Period After the Independence: the President Samora Machel (1975-1986)

The period after independence, maybe the worst one for educational reform, it is characterized by the different challenge of shifting the colonial education to a new one. Mungazi and Walker (1997), states that “following the achievement of independence, many countries of Southern Africa made an impressive attempt to build their economies. This made possible to invest in education and build supporting infrastructure. Then, the period after the independence President Samora Machel become the first president of Mozambique with this challenge to build the economy, and education was one sector appointed to this purpose. According to Macabi, Guilhermina (1991), “on the eve of national independence in 1975 more than 90 percent of the population in Mozambique was illiterate.” Thus, after the independence, the challenge was to reverse this scenario by providing education for all. “The Ministry of Education was given the mandate to carry out literacy programs. Commissions and training centers were formed nationally, provincially and at district levels,” *ibid*. In 1983 “Mozambique introduced the NES,” (Dhorsan and Chachuaio, 2008). The NES encompasses formal and informal education: “pre-school education; primary education; secondary education; technical and professional education; higher education or tertiary education; and adult education,” Southern Africa Regional Universities (2008).

In the level of higher education, there was only one institution created. Assie-Lumumba, N’dri (2006), asserts that “Portugal was a poor and weak colonial power with settler colonies that

adapted its educational policy in the colonies to its objective conditions. It did not set up any real higher education foundation.” Indeed, according to Vogels, Mieke (2010), higher education system was established in 1962 by the Portuguese introducing only one institution called General University Studies of Mozambique (EGUM). Lately, in 1968 became University of Lourenco Marques with discriminatory nature. Overall, “one of the characteristics of the pre-independence education system was that it was very selective,” SACMEQ (2012). It privileged the Portuguese and some assimilated, “until 1974 indigenous Mozambican students constituted less than 0.1% of the student population,” Brito, Lidia, 2003. Africans were discriminated against colonists. This changed after the independence in 1975. Then, the university was called Eduardo Mondlane becoming the first national university in Mozambique.

2. The Period of the President Joaquim Chissano (1986-2004)

While the government was taking a new approach to face the illiteracy within the country, the civil war took place from 1977 to 1992 in the country, effectively annulling the governmental intentions. In fact, “by the late 1980’s the country’s promising advances in school expansion and access were halted by national and regional conflicts that destroyed the country’s infrastructure, including over 60% of the country’s schools,” (Isaacman, 1987). Also, the huge challenge of this period was the structural adjustment program in the 1980s. The structural adjustment program, implemented in Mozambique in 1987, with policies of privatization and economic liberation, for instance, contributed negatively to the reform in education. Structural adjustment is viewed by some scholars as negative for developing countries like Mozambique, since the implementation of some policies such as privatization and spending cuts results in social costs as unemployment. For instance, many teachers were fired in public schools to respond to adjustment programs due to financial strain. This point means that because of the privatization policy, many teachers lost

their jobs. Mutume, Gumisai (2008), points out that “the structural adjustment mainly by the International Monetary Fund, through its policy support instrument was more responsible for public cuts. This policy was not based on financial mechanisms rather on advice and monitoring, so “Mozambique hopes to hire many more teachers for its overcrowded schools, but the low inflation targets set by the IMF limit public spending,” *ibid*. Private institutions were created, but the majority of people could not afford the fees raising the number of uneducated people. Thus, it was needed to reduce the impact of structural adjustment program to permit more access to education by creating more public institutions.

Chissano stayed in power for 18 years. The civil war² discussed above and the structural adjustments were the main obstacles to the improvement of education in the country. However, among other projects, the government adopted in 1995 the Education Sector Strategic Plan to “expand access, increase quality, and strengthen institutional capacity and decentralization,” Errante, Antoinette (n.d). Besides, the country achieved the peace related to the civil war that permitted *inter alia* the implementation of reforms, the adoption of the SPHE in 2000, and the establishment of the Ministry of Higher Education Science and Technology (MHEST) in the same year.

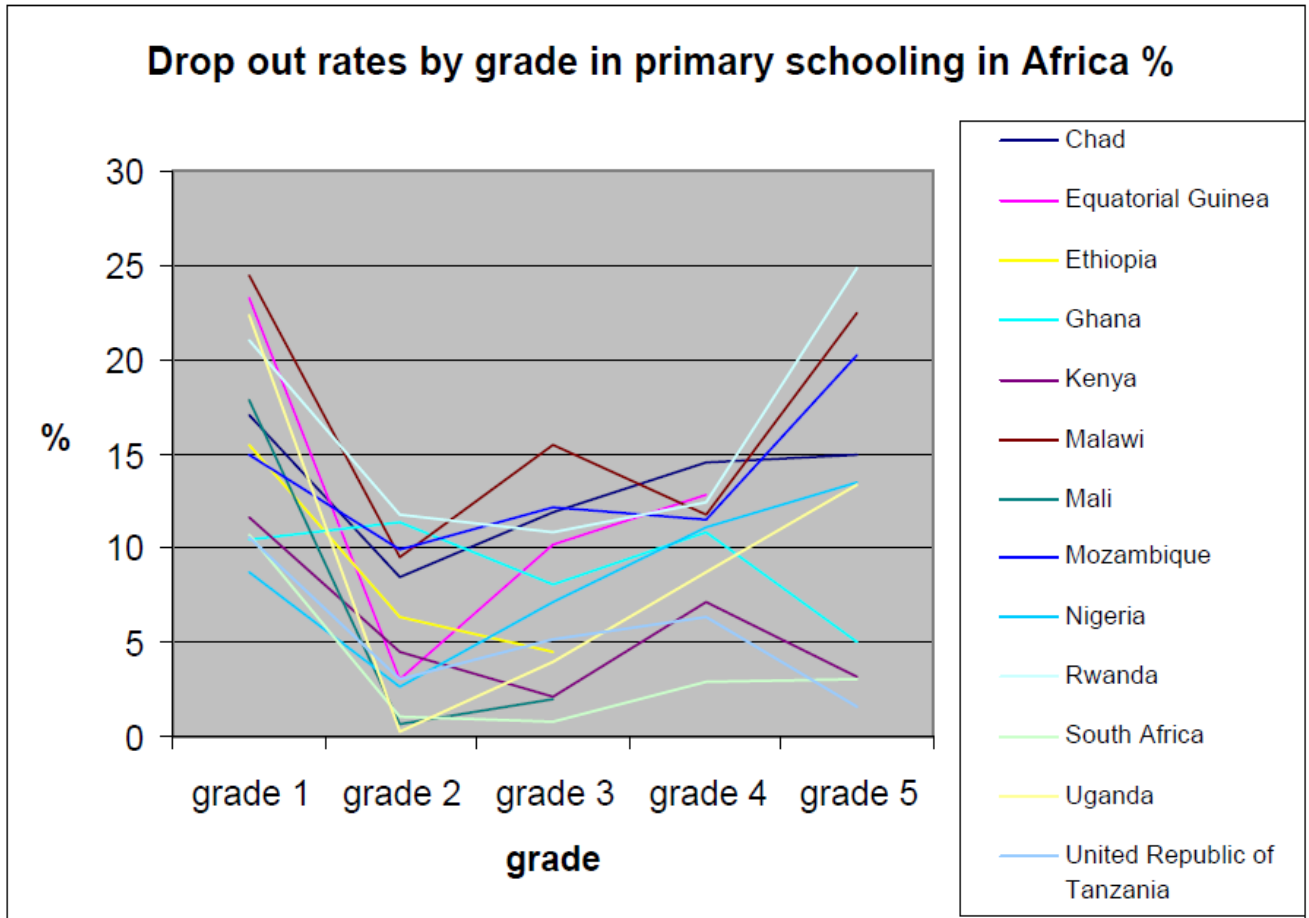
3. The Period of the President Armando Guebuza (2005 to the present)

This period is characterized by the intensity of reform programs in education system as a whole. During this time period, the government adopted several measures to increase the effectiveness of education.

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2. For more information on civil war in Mozambique, consult: Isaacman, Allen and Barbara Isaacman (1983) Mozambique: From Colonialism to Revolution, 1900-1982 (Boulder: Westview).

President Guebuza continued with the process started with his predecessor. Guro and Weber (2010), state that “the Mozambican government has introduced reforms of basic education, notably the introduction of interdisciplinary, learner-centeredness, and new teaching pedagogies.” Other measures were taken as the curriculum reform and education for adults. According to Dhorsan and Chachuaio (2008), the basic problems of education system as a whole were “the low level of teacher education; the high rates of repeaters and dropouts; the low level of both pupil and teacher performance; the teacher/pupil ratio; the low level of preparation by the teachers; insecure working conditions; the mismatch between the structure and the topics of the curriculum; and the teachers’ limited ability to link theoretical knowledge with the practical and productive activities developed by the communities.” To elucidate on the problem of dropouts, for instance, refer to the next Figure 1. It is a cross country analysis for the year 1995, were Mozambique seems to be a problematic case.

Fig. 1 Drop Out Rates by Grade in Primary School in Africa in %



Higher education was also facing some challenges as was mentioned early in this research. The proliferation of higher education institutes began in 1985 with the creation of Higher Pedagogical Institute and Higher Institute of International Relations a year later. In 2006, Mozambique “accounts for 23 licensed higher education institutions of which 11 public and 12 private,” (Chilundo, Arlindo, 2006). According to the data provided by the Ministry of Education (2009), in 2009 there were 36 higher education institutions in Mozambique. The reform program in higher education began in 2000 with “the establishment of the MHEST by the government,” Vogels, Mieke (2002). In the same year, then, the SPHE in Mozambique 2000 – 2010 became a reality to cope with the challenges that this sub-sector was facing. In the mandate of President

Guebuza, the MHEST became part of the Ministry of Education and Culture. In fact, “higher education has been reintegrated with education in the new Ministry of Education and Culture,” Bailey, Tracy and others (2009).

The process of reforming higher education as well as education as a whole was based on cooperation with the World Bank, Mozambican government, and other bilateral contacts such as Netherland and Sweden. Overall, the background shows managerial reform, part of government effectiveness, as the main tool to promote sustainable development and it asserts the participation of the government reducing poverty as an imperative to the same goal.

II. Literature Review

The study reviews the literature in a broader context of Africa and then discusses the particular case of Mozambique. There have been several studies conducted on higher education reform in Africa. Most of them are concerned with improving this sub-sector by enhancing its quality. Overall, in many countries the process is incorporated into reform initiatives by the government. Africa is described as a continent with many challenges in the social, economic, cultural, and political context, Teferra, Damtew & Philip Altbach (2004). It still is struggling to achieve its economic liberation after the recently gained political one, “Africa having attained political emancipation in the last fifty years the expectations were that with this political emancipation economic autonomy would follow,” Odesola, Johnson (2007). The aim is to eradicate poverty and achieve sustainable development. To that purpose, education and/or higher education is viewed by many, if not all, African countries as the tool to be used to combat many obstacles mainly is the time of globalization. OECD through the Centre for Educational Research and Innovation (2009), goes beyond stating that “in global knowledge economies, higher education institutions are more important than ever as mediums for a wide range of cross-border relationships and continuous global flows of people, information, knowledge, technologies, products and financial capital.” A quote by Bloom, David and others (2005), says that “higher education can produce both public and private benefits [such as] better employment prospects, higher salaries, and a greater ability to save and invest, and enhance economic development.” Therefore, education in general and higher education in particular is a valid argument to be considered to that end. The focus has been on basic education, “for several decades, African countries and the donor institutions have placed great emphasis on primary and, more recently, secondary education,” *ibid*. Primary and secondary educations determine the performance of

students at the higher education level, meaning that the level of preparation of students in basic education can influence the performance in the higher education; however, it is time to give more attention to this level, too.

In addition to the lack of focus on higher education, the need for reform in Africa is based on the necessity to shift from the colonial era to a new one, because African universities were build to meet specific needs of colonial administrations. Abate, Bekele (2008), states that “legacies from the pre-independence era still shape the structure and substance of African universities.” However, they no longer correspond to the actual African reality. Many studies assert that African institutions are based on colonial system; that is, they inherited the colonial vision, “almost all universities and higher education institutions have been designed on the models of their colonizing counterparts,” (Sall, Hamidou and Ndjaye, Baye, 2008: 44). Thus, now there is a need to reform them in order to be in accordance to their environment. Aina, Tade Akin states, “when we look at the field of and literature on, public higher education in Africa over the last two or three decades, we find that the dominant theme has been crisis and reform,” (2009: 25). Despite the fact that this author considers the case of public higher education and not higher education as a whole, this sentence highlights the reality on higher education in Africa as well as the importance of reforms. Aina goes further by affirming that many experiences of higher education reform in Africa are related to the economic and political crises of the 1970s and 1980s. This was the case of Mozambique, because as it was shown in the background, the political context caused by the civil war influenced enormously the social situation including education. Bekele (2008) asserts, for instance, that the reform undertaken in Sub Saharan Africa, in countries as Ethiopia, Kenya, Uganda, Tanzania, Sudan, and Nigeria, followed the African principle of renovate higher education to bring more efficiency.

Challenges of Higher Education in Africa

Despite almost all African countries having introduced reform programs for higher education, there are some challenges that should be faced to improve this sub-system. Assie-Lumumba, N'Dri (2006) points out some of those challenges: “the debt burden, the disruptive impact of violence and armed conflicts, and human resource loss due to HIV/AIDS and brain drain.” These are, in general, the main concerns in Africa. Aina states gender equity, knowledge production, and funding sources as the main challenges, (2010: 21). Bekele’s analysis converges with this last author as it considers “issues of sustainable funding, quality, relevance, teacher training and management, equity and access confront African education systems than before.” Here, the problems of funds and access and quality of higher education system will be discussed.

1. Funds

Africa recognizes now the importance of education in fighting the enormous calamities faced by the continent. Education in Africa has been a challenge over the years. The challenges of having an excellent system of education are noticed worldwide, but what makes Africa one of the most challenging cases is the lack of financial resources to foster quality of education in its countries. Thus, although the continent is struggling to achieve economic independence through the education, the funding is one of the huge challenges, and it is viewed as a trap. Africa should minimize the dependence trap.

2. Access and Quality

The funding determines the access of higher education. Because many African governments do not have sufficient funds to invest in the expansion of higher education, they collaborate with the

private sector to achieve this goal. However, private higher education institutions are for those who can afford it, and that is not the case of the majority of the people within African countries. On the one hand, “Africa has experienced a dramatic escalation in the demand for higher education, beginning in the late 1960s and continuing today,” Mohamedbhai, Goolam (2008). On the other hand, this policy of massification of education has created concerns for higher education leadership due the lack of capacity to address the demands.

The challenges described above determine the level of achievements of reforms initiatives in higher education. Overall, there are some achievements verified but also some challenges persist. Aina, Tade Akin (2009, pg.23), states that “in spite of over a half century of interventions and waves of reforms, the terrain of African higher education continues to resemble a thick forest of institutions, systems, and practices lacking clear and distinct tracks, values, and goals.” The research will tackle this reality to assess the particular case of Mozambique to know whether it follows this trend, or if it has improved its quality after the implementation of reforms. A study made public by the Association for Development of Education in Africa (ADEA)³ during its 2012 meeting, highlights the idea of improvement in education in general. The same basically says that there is an improvement on education in Africa between the periods of 1995 to 2011 as a result of the stability of economic development.

The challenges now are related to the post-reform. As Aina, Akin Tade (2010) asserts, it is important to move beyond reforms,

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3. Association for Development of Education in Africa, it is an African institution created to debate challenges of education in Africa. African countries met in Ouagadougou, Burkina Faso, in February 2012 to discuss African education challenges.

“what is needed in African higher education is true transformation which will involve practical and epistemological ruptures with previous ways of doing things.” This means that not only the African states should reform the education system, but should also consider it as a continuous process. According to a study presented in the ADEA meeting, the actual challenges of higher education in Africa are related to the technologic innovation and the linkage between the formation and employment.

In the particular case of Mozambique, due to the time frame for the implementation of the SPHE was 2000-2010, and analyzing some indicators such as the increase on the number of higher education institutes, it is possible to affirm that the process has been positive, (Ministry of Education and Culture, 2009). However, as many African countries, some challenges remain as the reforms are a continuous process. The challenges are mainly related to the access as many institutions are private ones and the employment for graduates.

To sum up, the authors see education and its reform as a way to achieve economic development. The present study does not deviate from that purpose, because the ultimate goal of reforms in general, and higher education in particular, is to contribute to development through efficiency and effectiveness in a context where the government takes its role in addressing good governance. Indeed, the project studies the education system in Mozambique regarding the higher education sub-sector and its reform by analyzing how it worked before, what reforms were implemented and how currently it is. Thus, the purpose is to analyze whether there is an improvement in the mandate of the President Guebuza as is the government of the day responsible for the ongoing reform process in higher education. The ultimate aim is to add a piece of thoughts to contribute in strengthening the higher education system in Mozambique. The

main literature considers then, governmental documents on education system as well as scientific research on political, social, and economic reform in Mozambique and/or in Africa.

III. Research Methodology

The research relies on secondary sources to study the challenges of higher education. To address the research question, the main method applied is quantitative method based on consultation of governmental statistics to analyze the level of the strategic plan achievements. The targets set up by the Ministry of Education and incorporated into the SPHE were described in the introduction. By doing that, it is possible to conclude whether or not the plan has been successfully implemented. Therefore, the study makes use of secondary data collected by the Ministry of Education and Culture along with the Direction of Higher Education Coordination. This means that the strategy adopted to collect the data is based on coordination between the analysis of the SPHE and analysis of results of implementation through the data provided by the Ministry of Education from 2003 to 2007. The time frame considered in the study is 2003-2007 due to the data availability.

Mozambique case study is another method used to perform the topic. For that purpose, the research considers Bruce Berg and Robert Yin case study methods. The latter identifies stages to conduct a research, namely: determine the research question, select the cases, prepare to collect the data, data collection, evaluate and analyze the data, and prepare the report, (Yin, Robert, 2011). The study goes over these stages. As Berg (2009:317) considers case study as “a method involving systematically gathering enough information about a particular person, social setting, etc, to permit understand how the subject operates or functions,” the research, through the data gathered on educational outcomes, analyzes the attainability of reform in higher education. As an

analytic technique, the case study is viewed as a supportive instrument, so the results may or may not be applied to other African countries. As the literature shows, Africa still has huge challenges to address and Mozambique was selected as a case study due to the particular interest of the researcher on this country. Also, the Mozambique case study is due to the fact that the government recently implemented reform in higher education which was the first stage culminated in 2010, according to the SPHE. Besides, the country has many characteristics of other African countries such as the inherited education system from the colonial period, the low economic capacity to foster and expand its education, the employment concern related to graduates, and the wave of reform. This means that the results of the Mozambique case could be applied in others African countries in a general context. In addition to these methods cited above, the study tests the hypothesis early established according to which the higher education has been improved since the implementation of the reform program.

The use of secondary sources and/or quantitative method could be accompanied by primary data or some techniques of qualitative method such as interviews, surveys, and questionnaires, because the study could allow them. These are some alternative methodologies that might be applied, but as the nature of the topic, reform, it is more relevant to analyze the implementation results rather than considering point of views concerned to the question. Therefore, the study does not make use of interviews, surveys, and questionnaires. The use of these three techniques could consolidate the results and strengthen the research. However, it could affect some aspects of the research such as generalization of the results creating misinterpretation. Thus, the quantitative method was selected to conduct the present study according to the availability of the data. The design of the study is based on statistical assumptions which measure the expansion of higher education institutions, access and equity. The indicators are numerical ones.

The main concern of the study is to know to what extent the higher education reform has improved the educational outcomes. Thus, to answer such question the study makes use of some indicators to measure the improvement. The two indicators selected out of six are: the expansion of higher education institutions and the improvement of their quality, and the access and equity. The other indicators are concerned with meeting the labor market demands and national needs: flexibility and responsiveness, using available resources more efficiently diversifying financial sources of the institutions, and redefining the role of government. The first two indicators were selected because they accommodate the others and can be combined, as the role of the government should be played in every stage. The question of resources and financial sources can be analyzed as a way to improve quality, and the labor market demands can be determined by the level of quality of graduates and courses' relevance. To sum up, to address the research question, the methodology used is quantitative method based on statistics and the applied case study. The research does the analysis based on the literature on higher education reform, the SPHE conceived to reform the higher education system, and the numerical data collected.

The data collection process took over six week's period. The data collected are related to the indicators previously considered to conduct the study and based on the objectives of the SPHE. The results presented are partial ones due to some limitations of the study. Considering the strategy of analysis adopted that comprehends two indicators, the study does not present results in terms of the reform process as a whole; that is, the results are considered as partial ones, because there are six main objectives of the SPHE. Although the SPHE has a time frame from 2000 to 2010, the study discusses from 2003 to 2007 according to the availability of the data.

Table 1: Data Description

Indicators	Time frame	Variables
Expansion of higher education institutions	2003-2007	Number of higher institutions created and quality
Access and equity	2003-2007	Number of students enrolled, gender relation, and province distribution

Table 1: Data description

The table shows the indicators selected to conduct the study.

1. Expansion of Higher Education

The first indicator is on expansion of higher education which sees the level of accomplishment of the SPHE in terms of creation and/or diversification of higher education institutions. The notion of higher education goes further from universities consideration. The data show that all types of higher education including institutes and others were considered, Statistics on Higher Education in Mozambique (2003-2007). In addition, the higher education institutions include both public and private ones. This point includes the analysis of the quality improvement, too.

2. Access and Equity

The second indicator, access and equity, as the literature shows is one of the main concerns in Africa. The access and equity is categorized by the number of students that have access to the higher education analyzed by the gender relation, and it also is considered the distribution of students in the different provinces.

The data collected are more precise as are in numbers format. The aim is to analyze whether there is an improvement in the higher education sub-system considering the reforms undertaken. The research question that accounts to study to what extent the reform undertaken in higher education has contributed to improve the education outcomes and the hypothesis previously drew which considers that there is an improvement in this sub-sector is tested through the analysis of the indicators during the time frame considered (2003-2007). The reform results are analyzed using the indicators during the period stated. Therefore, the principal documents examined are the SPHE and the statistics provided by the Ministry of Education and Culture concerning the results of the plan implementation. The overall objective is to study the higher education level of improvement and broadly provide some inputs to the reform process. In the big picture, the study aims at adding a piece to spur the economic development of the country.

The following pieces are part of the notes on data collected that appear in the preface of 2004 and 2009 statistics. The notes recognize the data constraints that were published by the Ministry of Education and Culture, and they can be applied to other years in analysis. The constraints are related to the quality and availability of data. This means that in addition to the fact that the research does not cover the all time frame set up in the SPHE (2000-2010), these constrains

originated by the data in itself are element of research's limitation. The original notes are in Portuguese and presented here is the researcher's translation.

“...[The] system of statistical information for higher education and scientific research institutions is in process of construction. Consequently, there are still some gaps in the quality and availability of data. However, comparing with 2003 data, the data for 2004 are more comprehensive and provide a higher quality,” (Statistics on Higher Education in Mozambique, 2004).

“...[The] National Coordination of Higher Education, part of the Ministry of Education and Culture, together with the institutions of higher education involved continues to exert efforts to cover the gaps for the next editions regarding to the availability and quality of information in order to provide statistical data and indicators reliable and timely,” (Statistics on Higher Education in Mozambique, 2009).

IV. Data Analysis

A. The Scenario of Higher Education in Mozambique Prior Reform

Prior the reform program, Chilundo and Berverwijk (n.d.), characterized the higher education system as ineffective. Indeed, the authors state “in 2000... the Mozambican higher education system was in fact a collection of 9 unarticulated higher education institutions that cannot sufficiently fulfill the needs of society,” (see table 2). This means that the existing institutions were not in accordance with Mozambique’s strategy for development at all levels which aims at responding to the needs of the different labor market. Vogels, Mieke (2002) asserts “in 1999 there were 10,974 applicants for 2,342 places.” This author sets the percentage of woman to be 26 percent to 44 percent meaning that there was a need to promote female participation in higher education. Annex A shows the data for the year 1999 regarding to the higher education institutions, location, and student enrollment. Albrecht and Ziderman (1995) even asserted that in the big picture of Africa there are challenges, “particularly in many developing countries, the root of the crises lies in the combination of a dramatic, and continuing, growing in student numbers.” One of the Mozambican challenges was the lack of physical spaces to attend the demand of students that was growing in the country. Thus, there was a need to expand the higher education infrastructures. This could be done through the establishment of new higher institutions based on public-private cooperation. In fact, “as the social demand for higher education is higher than the extant capacity in the institutions already operating, more private institutions were in the horizon,” Vogels (2002).

In addition to the need to increase higher education institutions, there was a problem of “quality of the education offered and the lack of an accreditation policy,” *ibid*. This author

characterizes the situation stating that “higher education in Mozambique is closer to a collection of institutions than a system.” Therefore, there was a huge need for higher education reform and the SPHE is considered as the driving force to that end.

Table 2: Higher Education Institutions in Mozambique, 2000-2002

Name	Location and Year Founded	Student Numbers	
		2000-2001	2001-2002
Eduardo Mondlane University (UEM)	Maputo 1962 Inhambane (planned 2002)	7307	7083
Pedagogical University (UP)	Maputo 1985 Beira (1990) Nampula (1995) Quelimane (planned 2002)	1399	2210
ACIPOL	Maputo 1999	140	167
Higher Institute for International Relations (ISRI)	Maputo 1986	270	270
Catholic University of Mozambique (UCM)	Beira 1996 Nampula Cuamba (1999) Pemba (planned)	1502	1684
Mussa Bin Bique	Nampula 1998	52	156

University (UMBB)			
Higher Polytechnic and University Institute (ISPU)	Maputo 1995 Quelimane (1998)	1732	1896
Higher Institute of Sciences and Technology of Mozambique (ISCTEM)	Maputo 1996	809	Not available
Institute of Transport and Communications (ISUTC)	Maputo 1999	83	141
		TOTAL: 13 292	TOTAL: 13 607

Source: Agneta Lind and Adeze Igboemeka, "Overview study of Higher Education sub-system in Mozambique", Maputo, Dec. 2001.

After having described the overall situation of higher education before the introduction of reform (for the years 2000-2002), and providing the situation of higher education institutions in Table 2, the study turns to analyze to what extent the SPHE was implemented taking into consideration its objectives. Thus, this part is dedicated to the analysis of the data provided and described for the research. The analysis is based on the indicators previously described: the expansion of higher education institutions and quality, and the access and equity. The following part analyzes each point. The hypothesis is the base of the analysis. Thus, based on the following

hypothesis “higher education has been improved in Mozambique since the implementation of the reform program,” the research analyzes the data to test the same hypothesis. There are two variables established: improvement of higher education sub-system X implementation of reform programs.

B. The Expansion of Higher Education Institutions

The creation of higher education institutions is one of the main objectives established by the MHEST. It is incorporated in the SPHE that states, “the expansion of higher education must not be restraint to the creation of universities. It is necessary to define other types and forms of higher education institutions, such as higher institutes, polytechnics, and higher schools,” MHEST (2000). Therefore, the expansion of higher education in Mozambique was based on this approach in addition to the targets set for this objective. Two goals were appointed to promote the expansion of higher educational institutions: to develop a diversified system of public and private higher education and to encourage innovation and diversity in training opportunities in higher education, *ibid*. These goals are incorporated into the one of the objectives of the SPHE; diversifying institutions, training opportunities and forms of delivery. To develop a diversified system of public and private higher education is the goal to be considered to analyze the expansion of higher education institutions.

Concerning this goal the aim was to encourage the rise of new institutions, public and private, and to promote their diversification. Because the time frame established for the purpose of this study is 2003-2007, the same goes over each year to show the results.

Table 3: Institutions of Higher Education Operating in Mozambique in 2003

Name	Type	Number of students enrolled				
		2003	2004	2005	2006	2007
Police Sciences Academy	Public	294	348	429	478	612
Higher Institute of Sciences and Technology of Mozambique	Private	1327	1107	1595	1466	1435
Higher Polytechnic and University Institute	Private	1992	2573	2991	2570	2663
Higher Institute for International Relations	Public	520	684	680	763	717
Higher Institute of Transport and Communications	Private	230	314	255	463	485
Catholic University of Mozambique	Private	1875	2051	1647	2223	2276
Mozambique Technical University	Private	180	651	986	1108	1068
Eduardo Mondlane University	Public	7349	9712	11517	14199	16286
Mussa Bin Bique University	Private	386	447	706	756	659
Pedagogical University	Public	3072	4058	5539	15049	31695

Source: MHEST through data from higher education institutions

Table 3.1: Institutions of Higher Education Operating in Mozambique in 2004

Name	Type	Number of students enrolled
Higher School of Nautical Sciences	Public	202
Institute of Health Sciences	Public	109

Source: MHEST through data from higher education institutions

The Table 3.1 is showing the evolution of higher education institutions in 2004, meaning that the two institutions created in 2004 should be added to the institutions existing in 2003. From Tables 3 and 3.1, it can be assumed that there was an improvement in terms of the number of institutions created. In 2003 there were about 10 higher education institutions of which 4 were public and 6 private. In 2004 the number of public educations increased to 12 with 6 being public and 6 private. These numbers come from the sum of 2003 and 2004 higher education institutions. Regarding the number of students enrolled, overall there is also an increase for all institutions. Indeed, Table 3 shows that the student enrollment has increased. This behavior means that there is a considerable progress regarding to the implementation of the SPHE taking into account the goal here analyzed. However, because of the unbalance between public and private institutions, the challenge still exists. The fees applied in private institutions cannot be afforded by the majority of students, so there is a need for more public higher institutions. It is important to highlight, however, that the two institutions created in 2004 are public ones. Moreover, course diversity was promoted according to the type of universities created.

Table 3.2: Institutions of Higher Education Operating in Mozambique in 2005

Name	Type	Number of students enrolled
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Military Academy	Public	65
St. Thomas University of Mozambique	Private	731
Jean Piaget University of Mozambique	Private	324
Higher Institute of Education and Technology	Private	200

Source: MHEST through data from higher education institutions

Table 3.3: Institutions of Higher Education Operating in Mozambique in 2006

Name	Type	Number of students enrolled
Higher Institute of Public Administration	Public	276
Higher Institute Polytechnic of Gaza	Public	60
Higher Institute Polytechnic of Manica	Public	60
Higher Institute Polytechnic of Tete	Public	39
Higher School of Economy and Management	Private	872
Higher Institute Christian	Private	38

Source: MHEST through data from higher education institutions

Table 3.4: Institutions of Higher Education Operating in Mozambique in 2007

Name	Type	Number of students enrolled
Higher Institute of Accounting and Auditing of Mozambique	Public	77
Lurio University	Public	130
Higher Institute Dom Bosco	Private	113

Source: MHEST through data from higher education institutions

From the Tables 2, 3, 3.1, 3.2, 3.3 and 3.4, an improvement in terms of school expansion can be confirmed. Table 2 shows that there are 9 higher education institutions in 2000 to 2002. Table 3 shows 10 institutions for the year of 2003. Table 3.1 adds 2 more institutions totalizing 12 institutions in 2004. Table 3.2 adds 4 higher education institutions to the previous 12 totalizing 16 institutions in 2005. Table 3.3 adds 6 institutions updating the number of institutions to 22 institutions in 2006. Table 3.4 for the year of 2007, adding 3 institutions, totalizes 25 higher education institutions. In other words the tables show that there is an improvement in terms of school expansion from 2003 to 2007. Student enrollment has also increased in the same period. The school location is described in the next part on access and equity. In regards to the relation public/private higher education institutions, although the study does not analyze them separately, it is important to state that from the 25 institutions 13 are public and 12 private. The improvement is considered by comparing with the scenario prior 2003 where there were 9 higher education institutions in 2000, for instance, with 4 public and 5 private ones.

B.1 The Expansion and Quality

The expansion of higher education should be related to its quality. Quality here is described as the access of technology, diversity of the courses in the different institutions, and the level of preparation of the faculty operating in higher education. The access of technology is related to the questions of the existence of institutional website, accessibility by the students, and the content. From 25 higher education institutions existing in 2007, with the exception of the Higher Institute Dom Bosco, currently, all of them have a website; although, in the majority of the institutions is hard to access (see Table 4).

Table 4: Mission Statement, Website, and Faculty Academic Qualification in 25 Higher Educational Institutions

Institutions	Mission statement	Website	Courses offered/Licenciature or Department
Police Sciences Academy	The aim is to professionalize the police force	Yes http://www.robtext.com/dns/acipol.ac.mz.html#result	Policy Sciences and Technology, Legal Sciences, Social Sciences and Humanity, and Research
Higher Institute of Sciences and Technology of Mozambique	“Train with quality and develop scientific and innovative activities relevant to the country in response to the needs and expectations of the development process of Mozambican society”	Yes http://www.isctem.ac.mz/	Medicine, Communication Science, Accounting and Auditing, Business Management, Applied Management, Computer Engineering, Law, Sociology, Public Administration, Architecture and Urbanism
Higher Polytechnic and University Institute	Not found	Yes http://www.ispu.ac.mz/	Department of Legal Science, Department of Psychology, Department of Social Sciences and Languages, Department of Economics and Finance, Management Department, Department of Computer Science and Mathematics, and Engineering Department
Higher Institute for	“Formation of diplomats and experts in international relations”		International Relations and

International Relations		Yes http://www.isri.ac.mz/	Diplomacy, and Public Administration
Higher Institute of Transport and Communications	“Creation and diffusion of science, culture and technology, carried out in the field of study, teaching, research, and services in the harmony of the objectives of national identity and the development of national and international community”	Yes http://www.transcom.co.mz/isutc/	Transport and Communication, and Management
Catholic University of Mozambique	“For the realization of its services, it is requested to be ever more effective instrument of cultural progress for individuals and for society”	Yes http://www.ucm.ac.mz/cms/	Faculty of Agriculture, Faculty of Engineering, Faculty of Health Science, Faculty of Tourism Management and Informatics, Faculty of Social Sciences, Faculty of Law, Faculty of Economics and Management, Faculty of Education and Communication
Mozambique Technical University	“Integral formation to the national and regional market of graduates with excellent quality in specific areas of knowledge and high employability”	Yes http://www.udm.ac.mz/	Engineering and Energy Management, Law, Economics, Management, Administration.
Eduardo Mondlane University	“It strives to be an institution of excellence in the context of education, science, culture and technology, educating professionals for life and assuming responsibility in the process of innovation and knowledge transfer, and sustainable development”	Yes http://www.uem.mz/index.php?option=com_content&task=view&id=116&Itemid=72	Faculty of Medicine, Economics, Sciences, Law, Architecture, Engineering, Education, Social Sciences, Veterinary, and Agronomy and Forestry. School of Tourism, Marine and Coastal Sciences, Communication and Arts, Rural Development, Business and Entrepreneurship of Chibuto
Mussa Bin Bique University	“Prepare cadres for the society through appropriate scientific, professional, and ethical training, inspired in the social Islamic doctrine”	Yes http://www.mec.gov.mz/d	Agriculture Sciences, Law, Management and Accounting

		ep.php?p=469	
Pedagogical University	“Train teachers and cadres of education with high education, providing them with scientific instruments and teaching-learning to enable them to deliver a high-quality education in the education sector”	Yes http://www.up.ac.mz/	Sociology, Anthropology, philosophy, Geography, History. Languages (French, English, Portuguese). Pedagogy and Psychology. Physical education and Sport. Natural Sciences and Mathematics
Higher School of Nautical Sciences	“Enhance the merchant marine with professionals with appropriate formation to the development of science and technology in nautical scope”	Yes http://www.enautica.ac.mz/principal.html	Electronic Engineering and Telecommunication, Maritime Machine Engineering, Maritime Navigation, Law of the Sea, Economics and Management of Ports, and Fire Fighting.
Institute of Health Sciences	“Train professionals with skills to identify and solve health problems of populations, based on ethical principles and high ethical sense of responsibility and relevance in society”	Yes http://www.esscvp.eu/escola/protocolos/republica-de-mocambique/iscisa	Hospital Administration and Management, Anatomical Pathology, Surgery, General Nursing, Maternal Health Nursing, Pediatric Nursing, Biomedical and Laboratory Technology, Clinical Psychology, Occupational Therapy, Physical Therapy
Military Academy	“Conduct training courses, update or specialization of interest to the Armed Force for the Defense of Mozambique”	Yes through the Ministry of Defense	Military Administration, Artillery Troops, Tanks, Radio Commanders, Communications, Military Engineering, Marine Corps, Infantry, Pilot Aviator
Jean Piaget University of Mozambique	“to help create human competences and activities in their areas of intervention as an essential step towards reducing human exclusion and desertification and ensuring the equitable development of peoples”	Yes http://unipiaget.ac.mz/index.asp/	Engineering, Health, Social Sciences, Arts and Humanities, and Education
Higher Institute of Education and Technology	“Train and develop quality in science and innovation relevant to the country in response to the needs and expectations of the development process of Mozambican society.”	yes http://www.adpp-mozambique.org/index.php/higher-education.html	Courses related to education and poverty alleviation such as Community Development
St. Thomas University	“Provide a quality education and greater access through the use of		Faculty of Philosophy and Humanities, Law, Agriculture,

of Mozambique	technology and science, providing community services, nonprofit, promoting economic, social, political and cultural of Mozambique”	Yes http://www.ustm.ac.mz/	Economics and Business, Science and Information Technology
Higher Institute of Public Administration	“Training in public administration of leaders and cadres n position of leadership and management with a view to raising the academic and professional qualifications of the employees in public administration”	Yes http://www.isap.gov.mz/	Public Administration
Higher Institute Polytechnic of Gaza	“To promote the economic and social development of the local communities, the region and the country by teaching technical and professional education oriented to economy, incubating companies as well as the provision of professionals services”	Yes http://www.ispg.ac.mz/pages/cursos.html	Accounting, Zoo technical Engineering, Agriculture Engineering
Higher Institute Polytechnic of Manica	It has the same mission of higher institute polytechnics differing in the region	Yes http://www.ispm.ac.mz/	Ecotourism and Wildlife, Accounting and Auditing, Zoo technical Engineering, and Agriculture Engineering
Higher Institute Polytechnic of Tete	It has the same mission of higher institute polytechnics differing in the region	Yes http://ispt.ac.mz/	Mining Engineering, Mineral Processing Engineering, Computer Engineering, and Accounting and Auditing
Higher School of Economy and Management	The purpose is development of the training, extension and research within the subsystem of Higher Education	Yes http://www.eseg.ac.mz/	Business management,
Higher Institute Christian	The aim is to train people in theology	Yes http://www.hefsiba.org/	Theology and Christian Worker
Higher Institute of Accounting and	“Training Professionals to work in the following areas: accounting and		Non data

Auditing of Mozambique	auditing, accounting and finance, accounting and management and marketing”	Yes Not found	
Lurio University	“Educate and train a new generation of competent professionals, committed to the development, science and well being of local communities”	Yes http://www.unilurio.ac.mz/universidade_pt.htm	Faculty of Science and Health, Faculty of Natural Sciences Engineering, faculty of Natural Sciences, Faculty of Architecture and Physical Planning, and Faculty of Agricultural Sciences
Higher Institute Dom Bosco	The aim is training in teaching and management of technical and vocational education	Not found	Pedagogy, Electrical and Mechanical Engineering

Source: Websites

Except for the largest public university in Mozambique, Eduardo Mondlane University, the private institutions’ websites are more developed in terms of information as in the case of Polytechnic University and Higher Institute of Science and Technology, for instance. In addition, there is a lack of contents in the majority of the websites, the update is irregular, and some services such as library and projects are not available, yet. As Van Dam, Henk and others (2010) state, “research reports, theses and dissertations are produced digitally in Mozambique. However, when searching for the university’s publications in its digital library or the catalogue of the faculty library, the (full text) content of this research output can hardly be found; hence is hardly used.” Most of the websites are in construction, for instance the Police Academy; http://www.acipol.ac.mz/?_target_=antigos_estudantes, accessed on 10 May 2012. Table 4 also shows the quality of the courses offered in terms of their diversity in the different higher education institutions, public and private. The same table includes the mission statement of the different higher education institutions. Those missions have diverse directions and meet the different perspectives regarding to Mozambique’s development objectives. The missions described in Table 4 are aligned both with Mozambique government’s aim which is poverty alleviation and with the SPHE’s mission: “Higher Education in Mozambique shall guarantee

equitable access and participation of all citizens; it shall respond to the needs of the Mozambican society to ensure its capacity of facing the great challenges of the Country's social, economic and cultural development," (2000: 2). The affirmation highlights the country's development objective at all levels.

In regards to the academic qualifications of the faculty, Tables 5 and 6 contain information on the degree of the faculty in the three major public institutions of higher education and three private. The analysis is on the years 2004 and 2007. The figures in Tables 5 and 6 lead to conclude that the largest number of faculty is holder of the degree of Licenciature and most of them are male. The female participation in teaching is low. Analyzing the numbers in Table 5 and 6, it can be concluded that the positive aspect is the almost nonexistence of Bachelors teaching others Bachelors. On the other hand, instead of having Masters teaching Licentiatees, the majority of faculty is constituted by Licentiatees teaching others Licentiatees. Therefore, there is a need for training at PhD and Master degrees in order to increase the quality of higher education. Also, there is a need to increase the female participation, too.

Table 5: Full and Part Time Faculty by Level of Education and Sex for the Year 2004 in 6 Institutions

Institution	Bachelor		Licentiate		Diploma		Master		PhD	
	M	F	M	F	M	F	M	F	M	F
Eduardo Mondlane University	1	1	520	183	0	0	149	47	142	26
Pedagogical University	0	0	337	65	0	0	41	13	35	5
Higher Institute of International Relations	0	0	31	8	0	0	20	3	3	0

Higher Institute of Sciences and Technology of Mozambique	2	1	90	32	0	0	29	11	14	2
Technical University	1	1	54	11	0	0	4	3	1	0
Higher Polytechnic and University Institute	0	0	111	36	0	0	54	12	14	7

M – male; F- female

Source: MHEST through data from higher education institutions

Table 6: Full and Part Time Faculty by Level of Education and Sex for the Years 2007 in 6 Institutions

Institution	Bachelor		Licentiate		Diploma		Master		PhD	
	M	F	M	F	M	F	M	F	M	F
Eduardo Mondlane University	2	1	541	208	20	14	197	74	162	36
Pedagogical University	0	0	284	169	0	0	124	102	30	15
Higher Institute of International Relations	0	0	35	10	0	0	25	2	4	1
Higher Institute of Sciences and Technology of Mozambique	0	0	0	0	0	0	0	0	0	0
Technical University	0	1	127	0	0	0	15	0	6	0
Higher Polytechnic and University Institute	0	0	107	38	0	0	60	15	11	7

M – male; F- female

Non data for Higher Institute of Sciences and Technology of Mozambique

Source: MHEST through data from higher education institutions

C. The Access and Equity

The access and equity is determined by the number of students enrolled, gender relation and the distribution of access throughout all provinces. The SPHE describes these variables as aiming at meeting the social demand. Thus, it states goals such as “to expand higher education physically and geographically; to implement a policy of access to higher education guaranteeing equity at all levels; and to define a policy of financial assistance to higher education students,” SPHE, 2000. The SPHE is a comprehensive document which includes different strategies, goals and actions to improve higher education sub-system; however, the present research deals with some of those aspects. The access and equity is analyzed based on the first goal’s variables which in short are: the number of students in the higher education institutions, gender relation, and enrollment by province. Table 7 shows the number of the enrollment and gender relation from the year 2003 to 2007. The distribution of student population by province in the same period is shown in Table 9.

1. Enrollment and Gender Relation

Table 7: Number of Students in Higher Education Institutions and Gender Relation from 2003 to 2007 in Thousands

Year	2003		2004		2005		2006		2007	
Student Enrollment	Public	Private	Public	Private	Public	Private	Public	private	Public	private
	12.781	8.070	19.729	9.106	24.121	12.933	45.580	15.969	77.383	16.011

Total	20.851		28.835		37.054		61.549		93.394	
Gender	M	F	M	F	M	F	M	F	M	F
	14.069	6.782	19.688	9.147	24.507	12.547	34.483	27.066	57.206	36.188

Source: MHEST through data from higher education institutions

M= male, **F=** female

According to Table 7, the total number of student enrollment for each year was calculated based on the sum of students enrolled and new students in both public and private higher education institutions. Thus, *student enrollment is obtained by adding (students enrolled and new students in public institutions) plus (students enrolled and new students in private institutions)*. The gender relation was calculated based on male in both public and private institutions regarding to the male enrolled and new ones for each year. The same formula was applied for female. The numbers in the table represent the total male in both public and private higher education institutions and the total female in the same perspective. Thus, *gender relation is obtained by adding (enrolled and new male students in public and private institutions) plus (enrolled and new students female in public and private institutions)*.

As the numbers *per si*, they allow to assert that the creation of new higher education institutions resulted in an increase of student enrollment that also meant an increase in the male and female enrollment. The gender relation can also be analyzed based on group age of students. Therefore, the next Table, 8, shows the school age group for the years 2004 and 2005, for instance.

Table 8: School Age of Students in 2004 and 2005

Age Group	2004		2005	
	Male	Female	Male	Female
Under 17 years	3	6	23	26
Total	9		49	
17 to 20 years	629	392	929	742
Total	1021		1671	
21 to 24 years	3596	1416	4025	2100
Total	5012		6125	
25 to 28 years	3309	1351	4901	2499
Total	4660		7400	
29 to 32 years	2206	638	3101	1215
Total	2844		4316	
33 to 36 years	1310	482	2013	1074
Total	1792		3087	
37 to 40 years	1020	341	1776	771
Total	1361		2547	

41 to 44 years	Male 736	Female 251	Male 1271	Female 565
Total	987		1836	
Above 44 years	Male 468	Female 181	Male 874	Female 375
Total	649		1249	
Total with information	Male 13277	Female 5058	Male 18913	Female 9367
Total	18335		28280	
Without information	Male 1957	Female 1964	Male 9	Female 9
Total	3921		18	
	Male 15234	Female 7022	Male 18922	Female 9376
Total	22256		28298	

Source: MHEST through data from higher education institutions

According to Table 8, the majority of students are young. Male students have the highest representation in almost every age group. It means that there is a sustainable investment in education in Mozambique. The quality of education can be established by the group age, so by the numbers in Table 8 one can conclude that to a certain extent there is a quality. Hence, not only quality is measured by the access to technology, diversity of courses offered, and degree of the teachers, but also by the group age of those institutions.

2. Student Population by Province

Table 9: Distribution of Student Population by Province as Percentage of Total Students

Province	2003	2004	2005	2007
Cabo Delgado	0.4	4.1	4.6	0.4
Nampula	11.6	8.9	8.2	1.4
Niassa	1.6	3.3	3.3	1.3
Manica	1.0	4.5	4.6	1.0
Sofala	9.0	9.5	9.6	7.9
Tete	0.0	4.4	4.0	1.6
Zambezia	1.4	9.5	9.1	1.5
Gaza	0.0	7.4	7.6	0.3
Inhambane	0.5	8.8	8.8	1.7
Maputo City	74.4	39.8 ^a	40.3 ^a	1.0
Maputo Province	0.0	a	a	1.3
				19.3 with information 80.7 without information

Source: MHEST through data from higher education institutions

^a - it includes Maputo City and Maputo Province

There are 11 provinces in Mozambique including Maputo, the capital. The country is divided in three regions, North, Center, and South. The Northern Mozambique includes Cabo Delgado, Nampula, and Niassa. The Center, Manica, Sofala, Tete e Zambezia. Finally, the Southern Mozambique includes Gaza, Inhambane, Maputo City and Maputo province. According to this organization and seeing the figures in Table 9, it can be assumed that almost all provinces did well in terms of student population evolution. The North and Center had a considerable evolution if considering that the majority of the higher institutions are located in the capital Maputo in the South. There is no data available for the year 2006. The numbers presented in 2007 seems to be a break in the distribution of student population, but this situation is due to the fact that there is only 19.3 percent of information on the year 2007 and 80.7 percent without information for the same year.

The percentage in 2007 dropped due to the more stability regarding to the student population among the different provinces as the concentration initially was in Maputo. Comparing the data from 2003 and 2007, it can be concluded that there is more balance in 2007. This means that the expansion of higher education within the country created condition to distribute students in the different provinces, so the percentage in 2007 is stable in the different provinces, although Maputo still shares the highest percentage.

The SPHE shows access in terms of distribution of student population in the different provinces. According to Table 9, Maputo City has a huge number of students in higher education institutions. The study is comprehensive but not a complete one, because not all objectives and goals projected by the SPHE were analyzed. Taking into consideration the indicators selected to conduct the present study, overall, the SPHE reform had a positive impact on educational

improvement in Mozambique. The first indicator analyzed was the expansion of higher education institutions. First, based on the data analysis, and comparing with the period before the implementation of the SPHE, there is an improvement regarding to school construction as well as their diversification. From 9 higher education institutions in 2000-2001 with less than 13.000 students, the country accounted with 25 institutions in 2007 and almost 100.000 students enrolled.

Fig. 2: Summary of Higher Education Institutions from 2000 to 2007

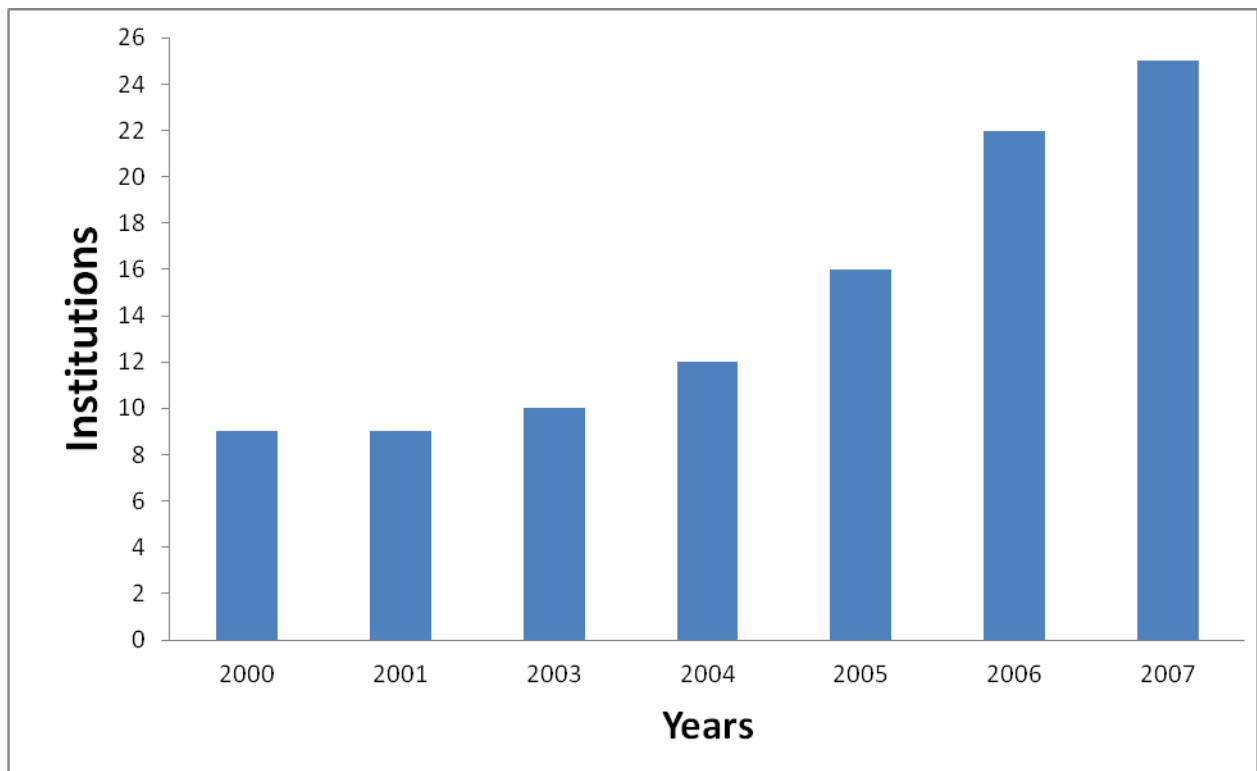


Figure 2 shows the trend on creation of higher education institutions. The data show that there is an improvement regarding to the expansion of higher education institutions in the period that goes from 2003 to 2007. That assumption can easily be verified through the evolution described

in the figure above. In what the type of those institutions is concerned, in the universe of 25 institutions, there are 12 and 13 private and public, respectively. In sum, taking into consideration the hypothesis established which includes two variables, improvement and reform implementation, it can be affirmed that the hypothesis is positively tested. However, the improvement cannot be assumed for the entire plan. There is one limitation: because the SPHE covers a 10 years period, 2000-2010, and the study is from 2003 to 2007 this result is partial. Above all, current data (2012) show that the improvement trend is maintained, because there are 44 higher education institutions created, Mozambique for All (2011).

Because the expansion is related to the quality, now, the concern is on quality and relevance. To face this challenge, according to a national publication, *a Verdade*, the Ministry of Education began a process of public consultation in all provinces to reshape the curriculum, February 2012. This process was initiated due the lack of graduates' capacity to meet the market demands and the lack of quality offered by the higher education institutions. Besides this process, the Ministry of Education expects to invest in formation by 2015, of over 2000 teachers with Master's degree and above 5000 with doctoral level. Regarding to the relevance, the Vice-Minister of Education for the higher education, Arlindo Chilundo, states that "the most important aspect is to have graduates capable to meet the demands of the international market," AIM, 2012. These steps confirm the importance of higher education reform in Africa that is to meet the local and international environment.

Regarding to the second indicator, access and equity, the trend is proportional to the expansion of institutions. As by the data, the student enrollment increased greatly. Gender had the same behavior, but in different proportion for male and female. During the three first years,

the female enrollment was slowly increasing in 2006 and 2007. The next Figure, 3, shows the correlation between student enrollment and institutions created from 2003-2007.

Table 10: Student Enrollment vs. Higher Education Institutions/year

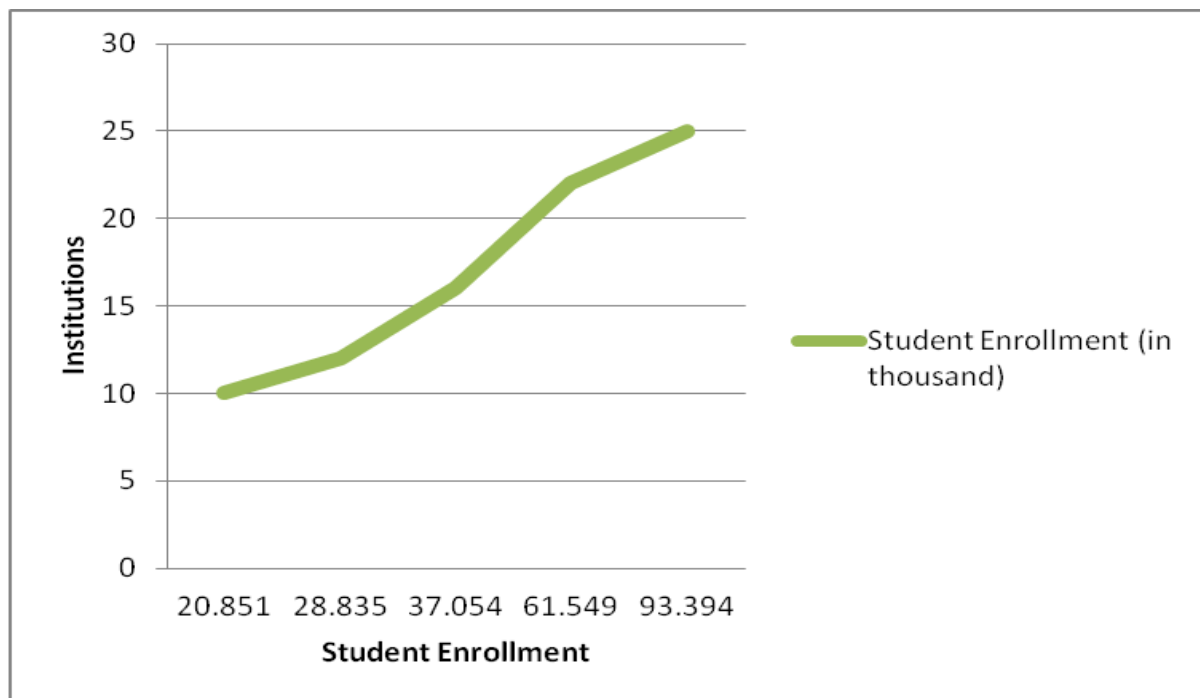
Year	2003	2004	2005	2006	2007
Student enrollment	20.851	28.835	37.054	61.549	93.394
Higher education institutions	10	12	16	22	25

The female participation is still low if compared with male. Brito, Lidia (2003), stated in a study that “in the public institutions only 26 percent are female students.” Some reasons appointed to this situation are the capacity to afford the tuitions and fees and low female participation in sciences. Therefore, it is necessary to promote female participation in higher education.

Here, besides the number of students enrolled in both public and private institutions and the gender relation, the analysis also considered the student population by the different provinces of the country. The analysis concludes that as a consequence of the coverage in terms of institutions in the different provinces, the percentage of students is stable in 2007. In the first years, 2003-2005, the scenario was described as to be irregular with some provinces presenting a

higher percentage over others. Nevertheless, the major concentration is still in the capital Maputo.

Fig. 3: Student Enrollment and Institutions for Years 2003-2007



Future Developments

The study encompasses the time period of 2003-2007; however, the SPHE is a project which involves a ten year period; 2000-2010. Thus, beyond the scope of the present study some achievements were reached such as:

-The adoption of supervision, inspection, and operation mechanisms to control the quality of higher education institutions;

-The adoption of a strategy to manage the funds and/or investment in higher education; Quality Enhancement and Innovative Facility or Quality and Innovation Fund;

-The creation of more public and private higher education's institutions after the period 2003-2007.

All of these achievements contribute to consider the SPHE as successful at a certain extent. This was possible due to the involvement of the stakeholders concerned with the process such as the government and the higher education institutions. Government support and compromise is crucial for the success of policy implementation, so government commitment is one of the points to add that justify the achievements. Higher education is in a real improvement. The numbers and figures analyzed have shown such growth.

V. The Policy Implications of the Findings

The expansion of higher education institutions is one of the answers to the research question. It contributes to the achievements of the SPHE. This achievement brings other challenges to this sub-system of education, because it needs to be accompanied by the quality. Quality should be seen in terms of teachers' capability. For instance, according to Bailey, Tracy and others (2009), "the number of full-time academic staff is about 1200, of which 15 percent are PhD holders, 25 percent are master's degree-holders, and 60 percent are holders of a first degree (bachelors or licentiate). These numbers indicate that there is still a need for high investment in staff training at the masters and PhD levels." Moreover, it is necessary to diversify higher education institutions within all the provinces. This step requires government effort in terms of funds. Not only the government is responsible, but with the new policy of institutional autonomy, institutions also should exert efforts to that end. Therefore, stakeholders' commitment is an extreme value to continue the reform process in a successful way. The expansion of higher education institutions brings a concern for quality control. This could imply a regular supervision at institutions and a regular update of teacher's readiness and capacity to deliver classes. Again, it brings the question of funding to the concern. All stakeholders involved, government, institutions, students, and parents, should embrace a cost sharing perspective to assist students utilize the institutions created.

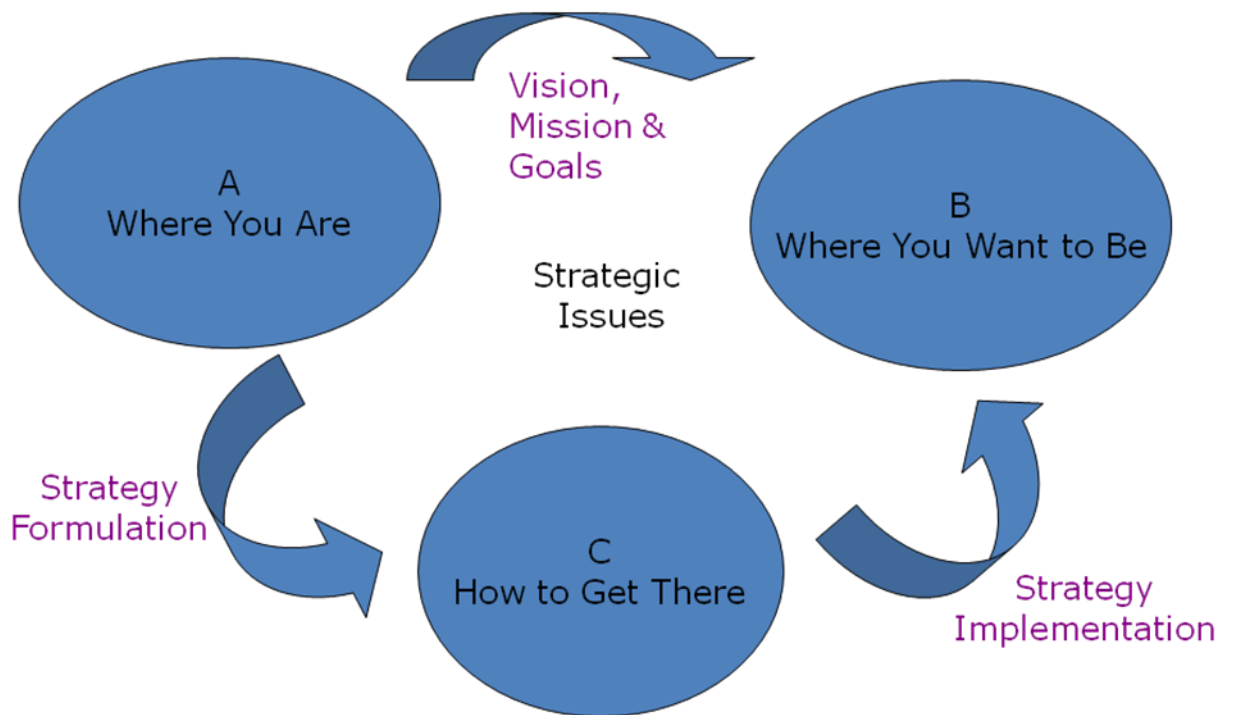
The increase of the student population in the years analyzed in the research generates a concern for equity in both public and private institutions. The policy of massification of education should be accompanied by the balance between male and female, and this question leads to invest in gender promotion assisting female to afford the higher education costs.

Moreover, this implies an investment at the pre-university level mainly the primary levels where there are many students' dropouts in order to cope with the challenges. The Epple and others' (2007) consideration of potential student approach, which is characterized by three variables, race, household income, and ability should be taken into account in gender equity. This approach implies the participation of both public and private institutions. However, it could be "painful" for the private institutions because of the higher costs of fees practiced. Even the public ones could reject this measure due the funds implications. The government is the prime stakeholder responsible for promoting social equity at all levels, so it can assume a policy where a specific budget is created to attend female's concerns. To sum up, these challenges should be addressed to consider the reform program as in continuous improvement. The commitment of all stakeholders of the process is extremely important as contributes enormously to achievements.

Recommendations

- The reform should be considered as a continuous process by updating the higher education situation. One way of to achieve such end is looking beyond reforms applying ABC strategic planning, (Bryson, John M., 2004). The ABC strategic Planning is one of several ways to look at how to plan efficiently to get positive results. This strategy can be resumed in the following structure:

Fig. 4 ABC Strategic Planning



13

Source: Bryson, 2004

- The government should continue with the expansion program to improve access by building higher institutions. The privilege should be given to the public higher education institutions. This can be done through the maintenance of government responsiveness

towards citizens. However, it cannot discourage the private sector to grow and invest more and more in education.

- Since the fact that there is a sense of female importance to foster development of the country, there is room to promote female participation in higher education to achieve gender equity. This could be done through the policy of affirmative action for female by understanding and assessing the barriers of their participation. The government along with the higher education institutions, since these are autonomous, could create a fund directed to female concerns for those who cannot afford the tuition and fees. This approach would be considered taking into account the limited capacity of providing scholarships by the different educational institutions.
- Institutions could privilege women in work-study arrangements to help them solve the lack of financial condition to stay in higher education.
- To improve the quality in higher education, the institutions should continue investing in teachers providing scholarships. The target should be at the Master and PhD levels.
- Higher education institutions should follow the policy of responsiveness and transparency regarding to the question of funds. This idea is due to the existing policy of institutional autonomy regarding to the management of funds.

Conclusion

Higher education is developing rapidly in Mozambique. The general analysis on reform in higher education in Mozambique shows that there is an improvement in the sub-system as a whole. Two important steps were taken in 2000 as a part of higher education reform: the establishment of the MEST and the adoption of the SPHE in Mozambique 2000 – 2010. These two steps meant a significant improvement to permit the reform in higher education. Six main objectives were considered in the SPHE, namely the expansion of higher education institutions, access and equity, improvement of their quality, meeting the labor market demands and national needs: flexibility and responsiveness, use of available resources more efficiently diversifying financial sources of the institutions, and redefine the role of government. For the purpose of this study two of the six previously mentioned indicators were considered namely the expansion of higher education institutions and the improvement of its quality, and the access and equity.

Mozambique's improvement is not an isolated case; it accompanies the overall climate of the continent, because the literature says that Africa registered an improvement in higher education sub-system. There is a demand for higher education in Mozambique and as it is and seen by the analysis, the actual system of higher education does meet the public demands. This idea is supported by the number of universities created and the diversified courses offered in different institutions. A long process of transformation occurred in the education system to meet the actual demand. Initially, there was only one university in Mozambique after the independence, and currently, according to the statistics provided and verified, there are 36 public and private institutions. The civil war reduced the government efforts to improve education outcomes as well. Government responsiveness is viewed as one factor that contributed to this stage. Government has an important participation in this process being the main stakeholder

along with the higher education institutions and the civil society, and it has been playing an active role in regards to bringing more effectiveness in higher education as “education has since independence been a priority sector of the Mozambican Government,” Chilundo and Berverwijk (n.d.). This idea is highlighted in the SPHE stating that “government and the State have a fundamental role in the development and expansion of higher education. Thus, both must identify national priorities, developing policies promoting social justice, reducing regional asymmetries and social differences, and rationalizing the use of the scarce resources of the country.” Not the government alone should act, but all stakeholders involved in the process as institutions, students, and parents.

The thesis does not capture the entire scope of reform program in higher education; that is, the ten years project established in the SPHE, because not all objectives were analyzed. Accordingly, further studies on questions related to the higher education funding and the labor market demands may be considered. The issue of fund is so important to the success of any policy, public or private, that can determine its effectiveness or failure. Because the Mozambican higher education program was supported by the government in partnership with outside donors, there is a need to intensify the institutions self management in terms of funds meaning that the financing should continue being based on the performance of the institutions. Therefore, the management of this new approach should be further considered to capture the real institutional capacity to deal with self-financing control. In addition, not only the question of funding existence in itself is important, but also the disbursement and transparency questions are very important. The second aspect that can be considered for further studies is on labor market demands; that is, the curricula should meet the criteria of national and international market demands. This aspect was not discussed in the research, but it is important to promote

employment for graduates. This is one of the government's policies to foster economic development and the SPHE includes this idea, as well.

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Annex A

Higher Education Institutions and Student Population, Mozambique 1999

Name (+abbreviation)/ Ownership	Year established / Upgraded to HE status	Location (+Branches)	Number of Courses	Student Numbers 1999
PUBLIC				
Eduardo Mondlane University (UEM)	1962 (renamed 1976)	Maputo	22	6,800
Pedagogic University (UP)	1985 (renamed 1995)	Maputo + Branches in Sofala & Nampula	12	1,987
Higher Institute for International Relations (ISRI)	1986	Maputo	1	234
Nautical School of Mozambique (ENM)	Upgraded 1991	Maputo	3	No students in 1999
Academy of Police Sciences (ACIPOL)	1999	Maputo	2	No students in 1999
PRIVATE				
Higher Polytechnic and University Institute (ISPU)	1995	Maputo + Branch in Quelimane (Zambézia)	8	919
Catholic University of Mozambique (UCM)	1995	Beira + Branches in Nampula & Niassa	9	1,035
Higher Institute of Science and	1996	Maputo	7	644

Technology of Mozambique (ISCTEM)				
Mussa Bin Bique University (UMBB)	1998	Nampula	3	No students in 1999
Higher Institute of Transports and Communications (ISUTC)	1999	Maputo	3	No students in 1999

Source: Vogels, Mieke (2002)