

UNIVERSITY OF THE WESTERN CAPE

DEPARTMENT OF GEOGRAPHY AND ENVIRONMENTAL STUDIES

**THE GEOGRAPHY OF PRIMARY AND SECONDARY
EDUCATION IN RWANDA**

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A thesis submitted in fulfilment of the requirements for the degree of MA in
Geography and Environmental Studies, University of the Western Cape

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DECLARATION

I declare that *The Geography of Primary and Secondary Education in Rwanda* is my own work and that all the sources used or quoted have been indicated and acknowledged by complete references.

Emmanuel MUYOMBANO

Signed:



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March 2008

DEDICATION

This thesis is lovingly dedicated to my wife Anne Marie KAGWESAGE, my children Axel, Chryssa and Smart and to my parents who made me see the value of education.



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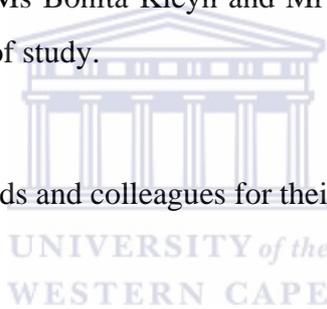
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ABBREVIATIONS

CNDP: National Centre for the Development of Curricula

DERP: Department of Planning and Research

DGSTP: Department of General, Technical and Professional Education

DTCMD: Department of Teacher Career, Management and Development

EFA: Education for All

FAWE: Forum for African Women Educationalists

RWF: Rwandan Francs

GIS: Geographic Information Systems

HIV/AIDS: Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome

ICT: Information Communication Technology

MDGs: Millennium Development Goals

MINECOFIN: Ministry of Finances and Economic Planning

MINEDUC: Ministry of Education

TTC: Teacher Training Colleges

UNESCO: United Nations Educational, Scientific and Cultural Organization

UPE: Universal Primary Education

WCEFA: World Conference on Education for All



Key words:

Rwanda

Education

Schools

Inequality

GIS

Access

Gender

Development

Efficiency

Equity



ABSTRACT

As in other developing countries, the challenges in Rwanda's education sector have been daunting. There are overcrowded classes, insufficient teaching materials, and poorly paid teachers, many of whom are unqualified. In addition, enrolment of children of school age is lower, drop out and repetition rates higher. These long-standing deficiencies were made worse by the destruction of physical and human resources during the 1994 genocide.

The study focuses on primary and secondary education rather than tertiary education as primary schools enrol the largest number of Rwandan students and absorb the major share of public spending on education. It is also a crucial phase to achieve basic literacy and life skills, which should be one of the achievements of primary and secondary schools. Furthermore, it is a foundation for further education and training. Because of its central role in basic human capital formation, the performance of the primary sector attracts most attention from policymakers and the public. Secondary education is a relatively small sub-sector but it is likely to grow.

Instead of using mapping based only on artificial aggregation within predetermined boundaries of the countries, geographical information systems (GIS) techniques have been used to identify and map new areas of education provision in Rwanda. Therefore, GIS mapping highlights different educational areas. The comparison between areas enables identification of areas of need for effective and efficient geographical provision of education in Rwanda.

The study identifies two areas of distinct educational provision within the country. The North (Ruhengeri, Gisenyi), the central (Kigali City, Kigali Ngari and Gitarama) and the Eastern (Kibungo) part of the country are characterized by low rate of drop out, high enrolment rate whilst the repetition rate is still high. The second area of education provision comprises the south (Cyangugu, Kibuye) and southwest region including the provinces of Butare and Gikongoro. This region is characterized by

inefficiency in education with high drop out and repetition rates, whilst enrolment rate is low.

In collaboration with other partners in education sector such as donors, the private sector, religious organizations and communities, the Rwandan Government should continually invest in regions of the Southwest, South East and North (Umutara province) with internal inefficiency in education and lacking school infrastructures and qualified teachers.



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CHAPTER ONE

1.1 General background

Everyone has the right to education. So states the 1948 Universal Declaration of Human Rights. Presently however, the right to education remains an empty promise for millions of children, women and men (Haggis, 1991). Worldwide, efforts have been made to provide a basic education for all children. Improvements in socio-economic status, lower fertility, better health and gender mobility are all-important reasons for investing in education. They can have a long-term impact on social and economic development, which, in turn, can alleviate poverty. However, despite continued commitment and investment, millions of children in Sub-Saharan Africa remain seriously disadvantaged in education compared with other developing regions; enrolment is lower, drop out higher, and gender disparities wider (Fentiman & Hall, 1999).

At the turn of the century, about 12 percent of the world's children aged 6-11 lived in Africa, yet the region accounted for more than a third of children out of school. Girls in particular are the most disadvantaged in education in Sub-Saharan Africa. Unless current trends reverse, Africa will account for three-quarters of the world's children out of school in 2015. The challenge is clear as in all countries of sub-Saharan Africa; access has expanded too slowly to achieve international education targets for gender equity and universal primary education (World Bank, 2001).

As in other developing countries, the challenges in Rwanda's education sector have been daunting. There are overcrowded classes, insufficient teaching materials, and poorly paid teachers, many of whom are unqualified. These long-standing deficiencies were made worse by the destruction of physical and human resources during the 1994 genocide. For example, it is estimated that 600 primary schools (32% of the total) were destroyed and some 3,000 primary school teachers lost through death or flight (Rwanda, 2000a). Since 1963, after the establishment of the National University of Rwanda, combined efforts by the Government, religious foundations and other private organizations created 11 more institutions of higher education. Eight of the twelve higher learning institutions are concentrated in the capital city of Kigali (World Bank, 2003).

In Rwanda, the government established a system of scholarships for all Rwandan students in public higher education (tertiary sector) through which it grants either direct financial aid or negotiates the financial assistance with donor agencies or countries. Accommodation in public institutions is provided based on Rwandan nationality, academic achievement and seniority. Higher education is intended to train the professionals that the country needs for its development (Rwanda, 1998). Primary and secondary education's task is to ensure access to basic education, equal opportunities and quality and efficiency in order to meet the basic needs of individuals (WCEFA, 1993).

The study focused on primary and secondary education rather than tertiary education (15,353 students in 2002) as primary schools enrol the largest number of Rwandan students (1,752,588 students in 2004) and absorb the major share of public spending on education. Because of its central role in basic human capital formation, the performance of the primary sector attracts most attention from policymakers and the public. Secondary education is a relatively small sub-sector (203,551 students in 2004) but it is likely to grow as more children complete primary schooling. Management of the secondary sector in a fiscally sustainable manner is needed to facilitate the likely expansion. It is important to examine the geographical variations in the distribution of primary and secondary schools in order to identify areas of need (Rwanda, 2004a).

1.2 Rationale of the study

While net pupil/school enrolment rates give some measure of universal access to education, they do not adequately capture real participation, which can only be properly measured by data on school attendance. Enrolment rates do not show who is not attending school.

There are no ethnic or regional quotas in any Rwandan school. However, disparities of access based on income remains a problem as parents and students are required to contribute substantial money for books and uniforms, especially in private schools. Poor and vulnerable children (including child-headed households, orphans, and street children) require measures to ensure their equitable access to schooling opportunities.

The study focused on primary and secondary education, as it is a crucial phase to achieve basic literacy and life skills, which should be one of the achievements of primary and secondary schools. Furthermore, it is a foundation for further education and training. The research intends to provide useful evidence for decision-makers about the patterns, distortions and gaps in primary and secondary education provision in Rwanda. Using geographical mapping overlays, it indicates the factors that affect attendance at primary and secondary education and how education disparities could be rectified and reduced in pursuit of access, equity and efficiency targets.

Education and human resource development are critical prerequisites for allowing individual households to emerge from poverty, one of the principles defined in vision 2020 by the Rwandan Government (Rwanda, 2002b). Rwanda is also devoted to achieving certain international targets such as Universal Primary Education (UPE) and Education for All (EFA) by 2015. Given limited government resources, achieving universal access to primary education and education for all by 2015 seems to be difficult. Government spending per student per year is strongly skewed in favour of the tertiary level, with insufficient resources invested at the level of the primary and secondary school (Rwanda, 2000a).

1.3 Statement of the problem

Developing countries like Rwanda are likely to have similar educational problems. These are related to a poor geographical distribution of schools through out countries, lack of educational infrastructure and a shortage of qualified teachers. In addition many teachers are not motivated to continue in the profession especially because they are poorly paid.

In Rwanda, there is a wide dispersal of housing throughout the country, which results in very long distances for children to travel to school. There is also limited access to secondary school due to insufficient places at Secondary Education level. For example, during the school year 2002/2003 the transition rate from primary to secondary school was 45%: less than half of pupils who passed the primary level (Grade 6) were accommodated in public secondary schools (Rwanda, 2004a).

Education is one of the most powerful instruments for reducing poverty and inequality, and for laying the basis for sustained economic growth. It is also important for the construction of

democratic societies and fundamental to the spread of knowledge (Bruns, 2003). Therefore, developing countries, and Rwanda in particular, should focus on educational problems to ensure that the majority of the population benefit from public spending on basic services especially education (Stasavage, 2005).

The education system is a geographical phenomenon as it operates over a national territory and provides a service targeting children in the population of that national territory. The education system creates patterns in space, and is affected by processes operating over space. Schools are normally the points of delivery of the service noticed above. The education system is an under-researched area in issues concerning the spatial, social and economic processes leading to an efficient geographical distribution of schools in developing countries (Gould, 1993).

1.4 Aims of the study

The research has the following main aims:

- To examine geographical variations in the distribution of schools in Rwanda
- To examine the geographical differences in teacher qualifications, gender disparities and the availability of educational infrastructure.
- To present a summary, multi-variate statement of schooling equity and efficiency.
- To make recommendations for an effective and efficient geographical provision of education in Rwanda.

1.5 Research methodology

The main emphasis is on mapping elements of Rwanda's education system in an effort to explain and clarify the matter of geographically variable access and outcomes. Geographic Information Systems (GIS) technology is one tool used in this study. There are many definitions of GIS based on different emphases placed on various aspects of GIS. Some miss the true power of GIS, namely, its ability to integrate and to help in making decisions, but all include the essential features of spatial referencing and data analysis. A geographical information system can be defined as 'a computer-based technology composed of hardware, software and data used to display and analyse geographic related information'(Scholten & Stillwell, 1990). These systems were developed as a method to integrate and analyse different

data into a single map in order to summarize geographic, socio-economic and various other attributes. As such, GIS is generating a great deal of interest worldwide as organizations become aware of the technology and its benefits. GIS is used by diverse organizations and agencies in land management, geological survey, defence mapping, tax assessment, transportation, forestry, mining, mineral prospecting, environmental management, marketing, and distribution of electricity, gas and water (Scholten & Stillwell, 1990).

GIS may be used to investigate all service delivery, including education. In this sector, school system management and planning suffer from a lack of information tools that can assist with decision-making. In order to help remedy this problem, GIS may be used to pinpoint the demand for education and the spatial distribution of the school age population. GIS can also be used to select a suitable location for a school and identify areas of need, as one of the most basic needs in school system planning is to be able to allocate children to schools, subject to enrolment or capacity constraints and maximum travel distances. This allows catchments to be defined and existing school enrolments to be evaluated against system standards. Schools that are currently operating at, under, or over capacity can be identified, and catchments redefined to balance school attendance according to resource availability (number of teachers and classrooms relative to the number of pupils attending) and demand distribution (Falconer & Foresman, 2002).

From the rich data available, and from all the possible mappings, it will be necessary to create and select complex multi-variate mappings that explain and illustrate best the geography of education in Rwanda. Mappings will not be based on artificial aggregation within predetermined provinces of the country; instead new areas of education provision and attainment in Rwanda will emerge from the analysis. Comparisons between areas will enable identification of areas of need for effective and efficient geographical provision of education in Rwanda.

In the research reported here, GIS is used to map and analyse the geographical variations in educational provision and attainment in Rwanda. As part of the research, a Rwanda data set has been compiled comprising geographically aggregated data from 1994 to 2004, and spatial data for 2001 to 2004. Using these data, the study will examine the distribution of schools, the disparities in teacher qualifications, and the availability of schools and classrooms. The use of

spatial interpolation methods for various maps will highlight areas of simple and compound deficiencies. Simple statistical measures of correlation will be used to examine relationships between variables.

Data were collected from the Rwandan Ministry of Education through the Department of Planning and Research. Other data have been gathered from the GIS and remote sensing training and research centre at the National University of Rwanda. Data related to the geography of education provision in Rwanda include the location of primary and secondary schools from 2001 to 2004, the geographical distribution of students, teacher qualifications, and the availability of schools and classrooms at the district or provincial level. Data have been compiled to create a data set suited to GIS.

Analysis of primary education provision in Rwanda will focus on data related to the geographical distribution of education indicators such as the number of students, the gross enrolment rate, the net enrolment rate, the repetition rate, the pass rate, the drop out rate, and the transition rate from primary to secondary school. Records will also be examined relating to the number of qualified and non-qualified teachers and the teacher-student ratio at primary school level. Data regarding geographical variations in the number of schools, classrooms, students per school, and students per class will be used to map and analyse the effectiveness of schooling in Rwanda. The primary education data set comprises information on 24 variables for 2,544 pieces of numerical information corresponding to 106 districts of Rwanda and 2,418 primary schools. All the information is gender specific and geo-referenced. The analysis of secondary education will be based on identical variables used for primary education but is complicated by the status of schools, namely, public, government subsidized and private. The data set comprises 8,352 pieces of numerical information relating to 24 variables and 348 secondary schools.

Unfortunately, some data which would allow a fuller analysis of education in Rwanda are not available. These data include parents' education, permanent household income, parents' employment status, distances between pupils' homes and schools, private expenditure per pupil, range and type of learning materials in each school. Notwithstanding, the study should be useful in outlining and analysing better than before the geography of primary and secondary education in Rwanda. Patterns of provincial educational provision may emerge as gross distortions of more salient urban and rural divisions.

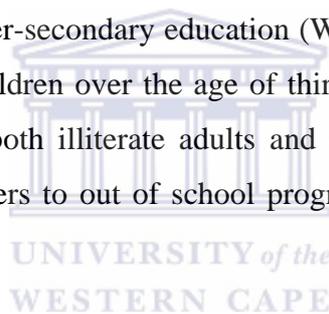
CHAPTER TWO

EDUCATION AND GEOGRAPHY

This chapter deals with the education system as a geographical phenomenon. It starts with definitions and contextual analysis of education. The review also analyses the development of education in developing countries since 1950, the geography of education provision, and the determinants of school enrolments. The chapter is concerned with primary and secondary education. It does not deal with adult or and life-long learning and it does not deal with informal basic education.

2.1 Definitions and contextual analysis

The definition of basic education is country-specific, but it usually encompasses at least primary education and often lower-secondary education (World Bank, 1995) Basic education refers to education offered to children over the age of thirteen. It also refers to primary and junior secondary education for both illiterate adults and children over the age of thirteen. Furthermore, basic education refers to out of school programmes for both youth and adults (Dzvimbo, 1995).



Universal primary education is important as primary education develops the capacity to learn, to read and to think critically. The completion of the primary education is a critical phase for the sustainability of basic competencies, such as literacy and basic numeracy. This remains a challenge facing education systems in developing countries (Bruns, 2003).

Rwanda is one of the signatories to the Education for All conference held in Jomtien, Thailand, in 1990, where it was agreed that education is a basic human right. At this conference improving the quality of basic education was one of the main areas of concern.

Education for All aims at ensuring that all children, young people and adults have learned outcomes which enable them to participate fully in the development of human potential, which is the essence of the expanded concept of 'Education for All' launched in Jomtien in Thailand. 'Education for All' aims to achieve education for all young people and adults by the year 2015 (Buchery, 2002).

The concept of universal education has been defined not only in terms of access but also in terms of the achievement of a minimum level of basic learning. The key criterion is not the number of years spent in schools or the type of institution attended, but what is taught (Ahmed, 1991). Based on the above definitions, this study will be limited to primary and secondary levels of education in Rwanda.

2.2 Development of education in developing countries since 1950

Global statistics on education since 1950 show several major trends. First, there has been a rapid increase in overall school enrolments, numbers of schools and numbers of teachers. Second, a relatively large proportion of national budgets has been spent on education. Third, these amounts were small in absolute terms compared to educational spending by nations of the global North. For many countries, the first boom in enrolments was in the primary sector, as children entered the school system for the first time. Subsequently the 'bulge' in enrolments moved to secondary and finally to the tertiary level (Graham-Brown, 1991).

Between 1960 and 1980, education systems in developing countries expanded rapidly. These years, with some interruptions during the 1970s, were generally marked by healthy economic growth, and so it was with education. At primary level enrolments in Africa tripled, while in Asia and Latin America they more than doubled over the two decades.

At secondary and tertiary levels of education, enrolments increased even more rapidly, with ten-fold increases being not uncommon albeit often from a very small beginning. This pattern of expansion changed after 1980. In every major developing region, the rate of growth of school and college enrolments slowed, as compared with the previous two decades (Colclough, Rose & Tembon, 2003).

These declines in enrolment reflect the economic situation of Africa in 1980s. Children who might have attended school in better times are kept out or pulled out because they were needed to work at home or, because their families were forced to migrate. Family incomes have been continually decreasing while many countries introduced or raised school-related fees. In addition, the private benefits of education (especially education of inferior quality) may have fallen during the economic stagnation of 1980s, while educational qualifications for many jobs have increased because of the rapid expansion in the number of graduates (World

Bank, 1989). This was particularly evident for primary schooling especially in Africa where primary enrolment growth fell below the rate of growth of population. In a number of countries, enrolments actually declined in absolute terms (Colclough, Rose & Tembon, 2003).

The average level of education in developing countries increased during the period 1960-1980. For the first time in the world history, most children at least started school. By 1990, 76 percent of 538 million children of school age in developing countries were in school, up from 48 percent in 1960 and 69 percent in 1980. There was an increase of enrolment rates in primary schools during 1980s (World Bank, 1995).

The subsequent slowdown and the retrogression in Africa has been a major setback. The combination of economic decline and continued rapid population growth caused the growth in enrolment rates to fall more than 5 per cent in 1980s in Africa, even though the number of children attending school actually increased from approximately 48 million in 1980 to 58 million in 1990. Thus, the educational gap between Africa and other developing areas widened over these years, confirming, by a considerable margin, its position as the most under-educated region in the world (World Bank, 2001).

The economic shocks Africa experienced in the 1980s and early in 1990s are still felt in education systems. Following the progress noted above, education development stagnated and in several cases declined. Many countries still cannot provide their populations with equitable opportunities for good education. As a result many people still have little or no education, skilled workers are lacking, and the region is increasingly isolated from global knowledge networks (World Bank, 2001).

In the case of Sub-Saharan Africa, a relatively large proportion of national budgets are spent on education. Yet in absolute terms the amount of money spent on education in developing nations is small when compared to the money spent by developed nations, because the total national budgets are small and restricted to specific sectors (Sunal, 1998).

When the money available is not enough, teacher salaries are relatively low, fewer educational facilities can be built, fewer textbooks and materials can be purchased, and less curriculum development can occur. Economic problems have occurred with increasing

frequency throughout the 1980s and into the 1990s in many countries in Sub-Saharan Africa. The high population growth in sub-Saharan Africa makes the economic situation ever more difficult (Sunal, 1998).

The educational expansion of the 1960s could not be sustained because of the deterioration of services, and the inability of governments to meet their commitment to provide schooling for all children. The supporting infrastructure was sorely stretched, buildings were not maintained, in-service programs did not accompany teacher recruitment programs, and low salaries forced teachers to look for paid work (Samoff, 2001).

2.3 The Geography of education provision

2.3.1 The education system as a geographical phenomenon

Geographers deal with processes of rural and urban production and their physical manifestations (such as agricultural patterns, towns, transportation, migrations) rather than with the characteristics of the people of the study area (including their educational characteristics). But just as geographers' concern for housing extends to the spatial, social and economic processes governing the allocation and access to accommodation, so their concern in education must extend to the spatial, social, economic and cultural processes leading to the distribution and access to schools (Gould, 1993). The education system is a further but seriously under-researched area in this regard.

Any geographical system comprises three elements: nodes, hierarchies and interactions. The nodes are the delivery points (the schools). They have catchment areas determined not only by distance but also by other factors such as quality of education, transportation arrangements, for the journey to school, admissions criteria, and the economies of scales in education provision at any education level. These factors vary in their importance from place to place and school to school (Gould, 1993). It is therefore necessary to identify the existing location of schools in order to determine areas lacking or exceeding in school places. Given intense population mobility, high birth rates, and disorderly urbanization, a new school system may require expanding existing buildings, adapting unused spaces to function as classrooms, establishing an additional teaching shift, and accepting more students per classroom. On the other hand, capacity reduction is much simpler and less expensive, with the transfer of

teachers, chairs, tables, and blackboards to areas in need in expansion (Pizzolato, Barcelos, & Lorena, 2004).

A hierarchy is evident in different levels of all education system. First, in most developing countries a Ministry of education controls public schools, and is responsible for all aspects of their operation. It appoints and pays teachers, maintain facilities and design the curriculum. Second, there are private schools which do not receive public funding. They charge relatively high tuition and supplies primarily to upper income households but they follow the designed curriculum. Third the subsidized schools received public financial support from the government, and are generally religious. In Chile for example, the size of the subsidy they received depended on the government's fiscal (Hsieh & Urquiola, 2003). One of the most important manifestations of the hierarchical organization of a school is the process of age grading, by which pupils are placed in different grades according to age and performance. The formalism of the school is also reflected in the division of time including an academic calendar that divides the school year into terms and vacations; a week is divided into working days and a day into school periods. The school's hierarchy can also be perceived in the principle of behaviour between the teachers and pupils, and among the teachers themselves. As in Africa, both sets of relationships maintain the official hierarchy of the school (Ansu, 1984).

In developing countries, there are usually many primary schools arranged administratively into clusters with schools for the lowest classes sending pupils to a larger, central upper primary school. There are also fewer secondary schools, and in countries with relatively low enrolment ratios they tend to be in towns (Gould, 1993). Consequently, rural schools and students are lacking better school quality than urban counterparts throughout the developing world. Lower enrolments are due first to a simple lack of schools, and existing schools offering which have a few grades with a high repetition and drop out rates. A key disadvantage, however, is the low quality of rural teachers, because rural schools attract teachers with lower levels of formal education, experience, and subject knowledge, compared to urban schools (McEwan, 1999).

Another element indicating the school as a geographical phenomenon is related to interactions. They are the flows of pupils and teachers, information and materials between the nodes as the system is integrated into a cohesive organization. The major flows are pupils, from home to school, but also from one school to another at the end of each cycle to a higher level of the hierarchy. Pupils also move out of the system at various levels to become integrated in the national hierarchy (Gould, 1993). In India for example, the kind of ambience that teachers generate towards learning is the interactive product of some of the characteristics such as their personality, unique perceptions and personal behaviour within the school setting on one hand, and what the pupils bring along with them to the classrooms, on the other hand (Govinda & Varghese, 1993). Another type of school interaction is the mobility of teachers. Teachers switching schools or districts prefer to move systematically to places where student achievement is higher. This movement underlines the possibility that schools with high-achievements students might be attracting experienced teachers (Rivkin & Hanushek, 2004).

2.3.2 Schools as economic phenomena

As in any other industry, the education system is part of the economic system of any country. It consumes resources and generates an educated person as a product. It employs people and uses physical infrastructure in the form of schools and other institutions. Therefore, schools are to the education industry as factories are to industry at large. Education is part of the service sector and can be assessed as an economic phenomenon as it consumes a large proportion of government expenditure (Gould, 1993). For instance, the teaching force in most developing countries is large as a proportion of those employed in the formal sector of the economy. It is often more than 50 percent of those employed in the public sector, itself a high proportion of total employed. Furthermore, teachers and educated people are amongst the more highly paid groups in the community (Ansu, 1984).

2.3.3 Schools and society

Schools play a critical role in the socialization of children. They prepare them to be members of a local community and national society. Formal schools provide a mechanism, outside the immediate limitations of the family, for introducing children to a wider community, to allow them to learn to work and co-operate with other children. In addition, they subject children to

an authority and regime within the school; they are exposed to a general awareness of people, events and circumstances beyond their immediate environment (Gould, 1993).

Schools provide opportunities to children for intensive interaction among themselves and schools act as a socializing agent supplementary to the family. In secondary school, especially, children come into contact with peers from different geographical areas, provinces, and ethnic groups. The opportunity to mix with young people from different social groups is likely to create conditions for the establishment of friendship, which may have many implications for the emergence of a common culture, and a bond of solidarity, among students. Such contact may improve the social life and occupational career of the young person (Ansu, 1984).

However, a close network of friends requires a willingness to suspend one's own judgements, values and choices or, better, to merge them within a common and desirable set. The students with a strong sense of independence and who are competitive may not develop individual capacity to work in groups. Cooperation involves some subordination of one's attitudes, values and interests to shared values and interests with other students. Given the conflict of goals, between competitiveness and cooperation, between independence and friendship, It would be surprising if schools which reflect such confusion of values, play a very strong social role as a consequence of any deliberate plan (Holmes & Wynne, 1991).

2.3.4 Schools and culture

Culture exists where people reside. The amount of time that students, educators, and community members spend in schools creates cultural elements that directly influence their actions and functioning (Kenna, 1999). The school system plays a crucial role for the development of a national culture different from the traditional cultures especially in Africa. In particular the national culture is expressed in the national language which is the language of instruction in the schools. Instead of encouraging antagonistic traditional cultures schools are central to the promotion of national culture (Gould, 1993).

However, some cultural biases affect directly the male and female education differently. In this case, female education is assigned a lower value than that of males. One of the most important cultural reasons for the gender gap is that female's education does not figure as

strongly as men's education into parents' decision making. For many parents in developing countries, the education of their sons who usually must support them is more valuable than the education of their daughters who are going to marry and leave the family. At the same time, the opportunity cost of sending their daughters to school may be higher than that of their sons because girls usually do more housework than boys (Colclough, Rose & Tembon, 2003).

2.3.5 Schools and community

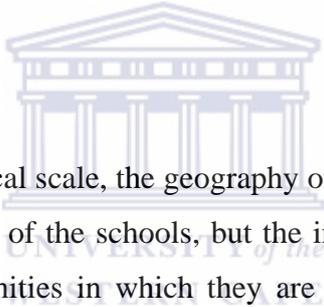
The idea of building relationships between teachers, parents and children has been a founding principle of the community school movement since its origin. In this regard, the work of a school is the shared responsibility of all the members of the school community. In the Polish context, the focus is not simply classroom instruction but the creation of a positive environment for learning (Bodine, 2005). The school community system is more likely applicable in Western education systems than in developing countries.

For parents, the community school offers the possibility to develop relationships with teachers and to contribute to their children's schooling. Through their delegates to the School Advisory committee, parents influence the process of teaching and education and the welfare of their children. The school treats parents as advocates of the family; it respects parental power and the right of parents to supervise school activities. Involvement of parents and the wider community in school policies and decision-making have a positive effect upon the climate for school improvement. Parents have a considerable contribution to make to their children's education by offering support, encouragement and motivation (Creese & Earley, 1999). In addition, parent's involvement in school gain a clear understanding of what is expected of their children and how they can work with teacher to enhance children's education experience (McBride, Bae & Blatchford, 2003).

In U.S.A context, involving actively the parents and increasing their expectations can help to raise standards of the school. They should be aware of the school's targets and those of their child, and what is required to their achievement. Some will contribute to fund-raising through the parent-teacher association or others will be involved in the development of the school's policies (Creese & Earley, 1999).

Due to the increased attention and interest in parent participation and education outcomes, there are three factors that predict and shape the parents' level involvement in their children's education. First, parents' role construction guides their beliefs about what they are expected to do for their children's education. Second, a sense of self-efficacy for helping their children succeed in school is crucial in order for the parent to take the steps ahead to become involved. Finally, parents must recognize that incitements and opportunities from the school are available to become fully involved (McBride, Bae & Blatchford, 2003).

In Africa parental involvement in school activities is limited in self-help projects, the provision of financial and material contributions to build schools, rehabilitation and maintenance. Their role in decision-making is minimal. Even if school committees and parent associations exist in most schools, the school committee members do not have the necessary skills to handle responsibilities related to school management (Colclough, Rose & Tembon, 2003).

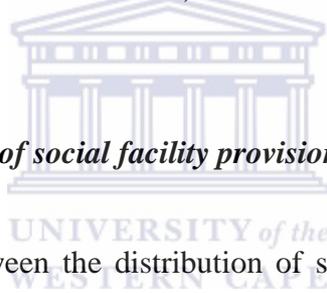


In developing countries, on the local scale, the geography of education must consider not only the location and catchments areas of the schools, but the impact that these facilities have on the life and work of the communities in which they are located. In towns, the direct link between school and community is obscured by the existence of many other facilities and enterprises and the link between the school and the community is not immediately apparent. By contrast, in rural areas schools have an immediate and recognizable impact. The most direct impact is a visual and physical one. The school is usually centrally located within the community, occupying a relatively large site, and often with unique construction (Gould, 1993).

In the case of Australia, rural schools are a focus of activity within small rural communities. Schools can contribute not only to the education of young people, but also to the economic and social development of a local community. As part of the community development process, linkages between community members are encouraged, and schools have the potential to become the focus for the development of a community's social capital through facilitating networks and sharing expertise with the wider community. Schools can play an

important role in the development of these linkages as one of a limited number of institutions present in rural communities (Kilpatrick & Bell, 2001).

In general, four different rationales for community involvement can be categorized through a variety of partnership activities. First, student-centred activities include those that provide direct services or goods to students (student awards and incentives, scholarships, tutoring and mentoring programs, and job shadowing and other career-focused activities). Second, family-centred activities are those that have parents or entire families as their primary focus (parenting workshops, and other adult education classes, parent/family incentives and awards, family counselling, and family fun and learning nights). Third, school-centred activities are those that benefit the school as a whole, such as beautification projects or the donation of school equipment and materials or activities that benefit the school (as staff development and classroom assistance). Finally, community-centred activities have as their primary focus the community and its citizen (charitable outreach, art and science exhibits, and beautification projects (Sanders, 2003).



2.3.6 Schools and the geography of social facility provision

There is a close connection between the distribution of schools and the distribution of the school-aged population that the schools serve. Where there is a variation at the aggregate scale, the disparities become apparent through comparison of enrolments rates. Some schools may be inappropriately located, so that some children live too far from a school; or sufficient places may be unavailable in schools although children live near a school. The number of schools needs to be well distributed to ensure a system that can operate within acceptable cost parameters. This is the essential problem in the geography of all social provision: how to balance between, on the one hand the desirability of maximizing access to any facility and thereby maximizing equity, and on the other hand how to minimize the cost of providing the service and hence maximizing efficiency (Gould, 1993).

Severe accessibility restrictions are faced by rural people especially in developing countries because of their geographical isolation, their social and economic conditions, and the commonly low level of transport supply. Education is the most important activity affected by transport conditions in rural areas. The relationship of distance and schooling is particularly critical when children from rural areas walk long distances to go to dispersed schools and

travel additional distances to nearby urban areas to access to higher primary grades. With the lack of public transportation and the inability to pay for private transportation, most rural children in Brazil abandon the school system after relatively few years. Access to school is an important part of accessibility to essential activities, which have to be considered as a right in modern life (Vasconcellos, 1997).

In some developing countries, the level of isolation in which the schools in rural areas function becomes clearer when one compares the distance between the school and the location of the nearest middle school. With this isolation, it becomes really impossible for any primary school teacher working in rural primary schools to interact professionally with others working at a higher level. This excludes the possibility of access to higher levels' facilities that are likely to be available in the middle level schools (Govinda & Varghese, 1993).

2.3.7 Population threshold and the size of school

Maximizing access to education requires acquiring many schools that are well distributed and pupils should live no further than 5km from a school. Generally, this is not possible, even in the best-served countries. In areas of very high population density such as towns, there should be sufficient potential pupils within the range to allow a school to operate at an acceptable level of efficiency. However, a common problem to planning is to identify the appropriate population threshold required for the use of available school facilities (Gould, 1993). Population densities are used as indicators to allocate schools and better access to schooling is expected in the densely populated areas than in the lowest densely areas (Tansel, 1998).

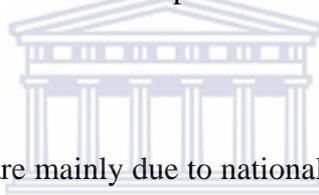
2.4 Determinants of school enrolments

2.4.1 Gender

The gender gap in school enrolments is not just a matter of access. In addition to a shortage of school spaces for girls, in many countries parents do not want their daughters to go to school due to cultural norms and the roles assigned to girls around the home. Literate parents are more likely than illiterate ones to enrol their daughters in school, and the regions with the highest proportions of illiterate adults are therefore those with the widest gender gaps.

Overcoming the gender gap requires not only providing school places for girls but also overcoming many parents' ignorance of the gains that will result from enrolling their female children (World Bank, 1995). In this regard gender division of labour within household is likely to lead to differences in the opportunity costs of school attendance for boys and girls. Girls of primary-school age are often reported to spend more time on household chores than boys, in particular, looking after younger children, thereby liberating the time of adults for other household, or income-earning tasks (Colclough, Rose & Tembon, 2003).

Gendered roles in society change the balance of motivations for girls and boys to attend school. In societies where the main leadership roles in local and national life are occupied by males, where marriage of girls occurs at a much younger age than of boys, where religious or customary belief discourages social interaction between the sexes, or where conventional opinion encourages women to see their future as being centred on the home and the family, the encouragement for girls to attend and to perform well in school is less than for boys (Colclough, 2000).



The obstacles to girls' education are mainly due to national education policies that affect boys and girls differently, uneven distribution of primary schools (especially in rural areas) and lack of schools for girls in systems segregated by sex. Other factors include demand for the household labour of girls, late entry of girls in school and restrictions placed on the physical mobility of older girls (World Bank, 1995).

At a global scale, the education of women and girls remains a particular challenge since they continue to have more limited access to knowledge, schooling, health service, protective measures, economic opportunities and political power. Therefore, they are restricted in realizing their own potential or human capacities. Although the disparity between the enrolment of girls and boys in primary school has narrowed since 1960, the percentage of girls who enrol continues to lag behind that of boys throughout most of the developing world (Buchery, 2002).

2.4.2 Residence

Education efforts in developing countries have been much more intensive in urban than in rural areas. Following independence, the education offerings in the cities expanded and improved even further. The capital cities of former colonies are almost always overwhelming centres of power. Unlike the advanced industrialized nations, developing countries tend to have one major city dominating the national urban structure. Moreover, cities in the Third World tend to be not only centres of power but also centres of knowledge (Stromquist, 1994).

Basic education is a fundamental human right, and is essential for reducing poverty and improving the living condition of rural population. However, children's access to education in rural areas is still much lower than in urban areas, where adult literacy and quality of education are much higher. In several countries, rural illiteracy is two or three times higher than that in urban areas and the gap is increasing. In addition, curricula and textbooks in primary and secondary schools often have an urban bias because they are irrelevant to the needs of rural people and rarely focusing on skills required for the development of rural areas. In order to achieve the millennium development goals by 2015 (including the eradication of extreme poverty and hunger and ensuring that all boys and girls complete primary education), investments need to be reallocated to rural people and the poor, and need to be reallocated to poor and rural people (Gasperini, 2003).

The single most powerful determinant of primary school enrolment is the proximity of a school to primary school-age children. Since schools are readily available and accessible in urban areas, urban children are more likely to attend school than rural children (Lockheed & Verspoor, 1991). Major barriers to education in rural areas include a general lack of resources, teachers and school facilities; lack of support for education from parents and production chores that compete with the school schedule; and schools that offer insufficient grades especially for the primary education level (World Bank, 1995).

In rural areas, the distance, difficulty or expense of transport to school is also a deterrent. In some African countries, children walk many miles to school every day. Where they have to use public transport, economic crisis frequently increases the cost (Graham-Brown, 1991).

Residing in urban areas unambiguously increases the probability of becoming a literate individual and increases the probability of receiving higher schooling. Residence in an undeveloped area or in a squatter settlement may mean unavailability of schools. Thus, residence in underdeveloped locations reduces the probability of schooling attainment (Tansel, 1998).

2.4.3 Poverty

Masses of children from impoverished populations, who are at the limits of both economic and political power, are relegated to inadequate system of public schooling, whereas the children of families of wealth and power are sent to private schools. In developing countries these superiors are often heavily subsidized by public funds (Lockheed & Levin, 1993). In all countries, children of poor families are less apt to enrol in school and more apt to drop out than children of better-off families. Families pay for the education of their children both directly and indirectly. Direct expenses include school fees, supplies, uniforms, transportation, and lunches. Indirect or opportunity costs include the household labour not done or the income not earned by children in school. Parents decide to bear the cost of educating their children if they perceive that the returns from education such as higher future income, more productive household or greater prestige justify the expense (Lockheed & Verspoor, 1991).

Even if education is indeed free, it must still be beneficial for the family to have the child do some work, for instance taking care of smaller siblings while the parents are at work. One of the major issues in relation to child labour is the divergence about the financial needs of the family and the right of the individual child to go to school (Hammarberg, 1997). Poor families have to decide whether sending their children to school is cost-effective. Even when education is free, schooling entails expenses such as nominal registration fees, and uniforms. In the poorest countries, family choice as to who goes to school and for how long depends mostly on financial need. In order to survive, families need the economic contribution of their children. This contribution can be in terms of family unpaid labour in agriculture or remunerated activities in the industrial or the service sectors (WCEFA, 1994).

Household income affects the decision whether or not to send a child to school. When the decision is seen as investment, household income should not be in principle a barrier to going

to school. Richer households may be less risk averse, they may have better information on the benefits of education, and they may discount future benefits at lower rates than poorer households. Furthermore, due to credit constraints, household resources play an important direct role in the investment decision. Richer households are more able to afford the direct and indirect costs of schooling from current income, and they are less likely to be credit-constrained than poorer households (Colclough, Rose & Tembon, 2003).

Wage work or participation in other economic activities is not cited as major reasons for the non-enrolment or dropout of children. However, participation in other economic activities and in domestic work is cited as more important than participation in wage work. It appears that there is no conclusive evidence on the role of opportunity costs of schooling in children's participation in education. On the whole, economic factors, including financial constraints and opportunity costs are an important reason for non-enrolment of children from poor families (Tilak, 1999).

2.4.4 School Quality

Quality is a fundamental concern through the education system and the indicators of quality prove the need for improvement. There are several areas in which quality can be improved: the qualification of teachers, the availability of books and other educational materials, the relevance of the curriculum, the standard of school premises, and the atmosphere within the school (Rwanda, 2003a).

Four aspects of school quality can be identified. First, schools with trained teachers are expected to have higher quality education and therefore produce students with 'better' human capital. Second, in crowded schools, less attention is paid to each individual student and the interaction between students and teachers is limited. This increases the probability of poor educational outcomes and decreases the probability of subsequent labour market success. A higher student-teacher ratio is negatively related to school quality and has a negative impact on labour market earnings. Third, crowded school facilities impede proper instruction of material and consequently are expected to have a negative impact on human development and on earnings. Finally, assessing how connected a school is to the country's physical infrastructure includes the provision of electricity in a school, which indicates the ability to employ other quality school services. Electrification measures the connection of the school to

the rest of the country and is a proxy for the capacity of a school to attract high quality teachers (Bedi, 1997).

Another common indicator of the quality of schooling is the pupil-teacher ratio. Higher pupil-teacher ratios are associated with lower quality teaching (Colclough, Rose & Tembon, 2003). Class sizes may be larger than measured pupil-teacher ratios because of teacher absenteeism. On the other hand, class sizes would be lower than observed pupil-teacher ratios in multiple-shift systems (where students attend school on double or triple shifts rather than at the same time) (Lee & Barro, 2000).

If all schools were of the same quality, all children, whatever their socio-economic background, could have equal access. If however there is a difference between the two groups access to quality, economic status should be an important divider because poor children will not be able to access good schools if they are not available in their community. Transportation cost for example, might make access to school prohibitive. If good schools are concentrated in urban areas, a matter to be discussed below, economic factors should be less significant to access in urban areas because transportation systems, though not necessarily good are more extensive and less expensive than in rural areas (Gibbison, n.d).

2.4.5 Household structure

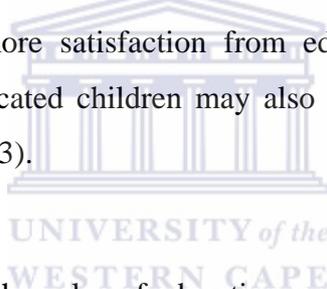
The size and structure of the household have been noticed as important determinants of the demand for schooling. The number of children within a household may affect the level of resources available to each- either negatively because of the need to share, or positively, because older children can provide support for younger ones. Children may also share workloads, so that those with larger number of children potentially have a reduced average workload (Colclough, Rose & Tembon, 2003).

Even if family size impedes the decision of parents to enrol the children, in developing countries larger families may facilitate schooling, at least for some children. Therefore, it is important to examine the structure of the family and activities of siblings. Child labour is not always unfavourable to schooling. It is evident that children are able to work and attend school, with apparently no negative effect on their schooling progress. The question is whether working makes it possible for the children to go to school. Working children are able

to earn enough money to cover expenses such as uniforms or books. Work does not interfere with schoolwork so that working children do not need to repeat grades. However, the problem is to determine with certainty what type of work and how much it affects schooling. The relationship between child work and schooling is complex. While work may have detrimental effects on schooling, without work many children may not be in school at all. Therefore, a ban on child work may not necessarily solve the problem of access to school, without improving the situation of poor relying on such labour (Psacharopoulos & Patrinos, 1997). The situation indicated above affects more the secondary education level as pupils in primary schools are considered as minors to work.

2.4.6 Parents' education

Parental education level is an important determinant of a child's chances of attending school. Educated parents are more able to assist their children's learning and to recognize its benefits. Educated parents may derive more satisfaction from educated children than uneducated parents and hence tastes for educated children may also differ by parental education level (Colclough, Rose & Tembon, 2003).

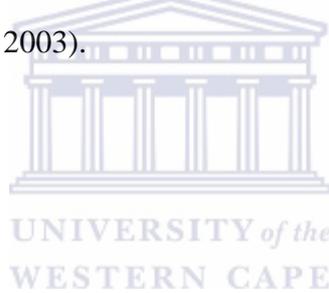


Parents do not always appreciate the value of education, probably because in some cases their own school experiences were negative. There is a growing awareness that a positive attitude among parents is important for whether and how children benefit from school (Hammarberg, 1997). Parental education comprises the household environment in which the child is being raised. In addition to having greater resources, educated parents are also more likely to use limited resources more effectively, provide better guidance to their children and contribute to their human capital development. These effects are expected to convert into higher earnings (Bedi, 1997).

2.4.7 HIV/AIDS

In developing countries HIV/AIDS epidemic is undermining the education system in the same way it is weakening the human body. Schooling is damaged as there is a decrease in the teaching capacity, the community support, the public funds and there is lack of adequate planning (Kelly, 2000).

Children or young people may be needed in the AIDS-stricken home to care for or stay with the sick; to release an adult from domestic or economic activities so that the adult can care for the sick; to care younger siblings; to head households because of the death or terminal sickness of parents. Parents are not motivated to send children to school because little learning occurs when teachers are frequently absent. When demand for education is uncertain, girls are negatively more affected than boys especially in rural areas. If there are problems related to costs of education, a boy will be favoured in preference to girl who is deprived of educational opportunities. Apart from the direct costs, students face indirect costs related to cash payments of educational materials such textbooks, exercise books, pencils, additional tuition and uniforms. When HIV/AIDS is prevalent, cash may not be available for these educational items because the family wage earner may have died or the only persons who can engage in production work are the older survivors or very young unproductive people. HIV/AIDS originated opportunity costs reduce the enrolment rates in schools or the participation in other educational programs (UNESCO, 2003).



2.5 Conclusion

The education system is a geographical phenomenon as it operates over a national territory. It also creates patterns in space, and is affected by processes that operate over space and normally in education systems schools are the points of delivery of that service.

In developing countries, the development of education between 1950s and 1970s expanded considerably as enrolments doubled and tripled in some regions. However, by the early 1980s, the economies of the developing countries declined dramatically. The cost of schooling increased and population growth exceeded the supply of schools; enrolments declined and quality of education worsened. Education in Third World countries is determined by various factors such as poverty, residence, gender, school quality, household structure, parent's education and HIV/AIDS.

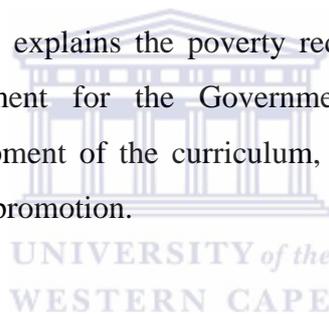


CHAPTER THREE

THE STRUCTURE OF PRIMARY AND SECONDARY EDUCATION PROVISION IN RWANDA

After explaining the relationship between the education and Geography, and the development of education worldwide (focusing on developing countries), this third chapter examines trends in primary and secondary education in Rwanda since independence 1962-1994, and overviews primary and secondary education and the Rwandan education policy. The trends examined comprise, among others, the teaching personnel, the number of school children, the school infrastructure, enrolment rates, and the school output.

Analysis of the education policy explains the poverty reduction strategy in relation to the education sector, the commitment for the Government of Rwanda to international development targets, the development of the curriculum, the textbook policy, the financial policy, gender and the automatic promotion.



3.1 Trends in primary and secondary education since independence to 1994

At independence in 1962, Rwanda had 217,000 pupils in primary schools. By 1994 enrolments increased eightfold to 1,7 million. The 5,059 classrooms of 1965 had expanded to 18,826 by 1990. After the 1994 genocide, the policy was to expand the original schools instead of constructing new ones. This had a negative impact on spreading the geographical distribution of schools in Rwanda. In 1968, there were 2,017 primary schools and 1,884 schools by 1994. Not all these schools offered all the grades of education. Due to constraints on quality in schooling, performance and transition rates were not improved significantly. The transition rate from primary to secondary school was 7% in 1972 and it increased slightly in 1992 by 10%. The secondary education sub-sector was under-developed. Due to the lowest transition rate, few students continued in secondary schools. In 1994 there were 280 secondary schools including 168 private schools and 112 private subsidized and private schools. During the school year 1993-1994, there were 3,077 students in secondary schools (Obura, 2003).

Rwanda's education can be divided in four phases: the start of national education in the 1960s, education reform in the mid-1970, reform division in 1991, and post-war developments. The structure of education was six years of primary education, six years of secondary education and three or four years of higher education. During the 1970s and 1980s, an eight-year primary cycle was introduced and abolished later. Upper primary and lower secondary education provided vocational education with a seventh and eight grades added to the primary cycle. After 1977, primary education's structure was maintained without the seventh and eighth grades. The focus was put on rural skills for rural development in primary schools (Obura, 2003).

3.2 Overview of primary education

The structure and content of primary education evolved in several different phases namely before the school reform of 1978-1979, the readjustment of the school reform of 1991 and the period after the genocide of 1994. Rwanda, like many other countries is committed to achieving certain international development targets, particularly, Universal Primary Education (UPE) and Education for All (EFA). Furthermore, the education system must also fit in the guidelines defined in Vision 2020, the Poverty Reduction Strategy, the Decentralization policy and the Information and Communications Technology policy. The new Education Sector policy reflects this new policy environment (Rwanda, 2002a).

3.2.1 Number of school children

Data concerning the number of children who had reached the age of attending school were until 2003 based on estimates provided by the UNESCO report after some projections. That report appeared in the document entitled 'study of the educational sector'. In 2004, such data come from the national census of 2002.

The number of pupils enrolled in the primary education during the school year 2003/2004 is 1,752,588 including 890,432 girls and 862,156 boys. There was an increase of 116,025 pupils, 7,1% in comparison to the school year 200-2003, and 7,6% in comparison to 2001- 2002. The number of girls increased compared to that of boys: 64,454 girls against 51,571 boys or 7,8% against 6,3% in 2003-2004 (Rwanda, 2004a).

3.2.2 Teaching personnel

During the school year 2000/2001, 62,7% of the total number of teachers in primary education was qualified (Table 3.1). The percentage of qualified primary teachers has increased dramatically from 62,7% to 81,2% during 2001/2002. This is due to the Ministry of Education policy to drop the non-qualified teachers and employ qualified teachers at the same time. In 2003-2004, teachers in schools increase by 26,192 including 13,702 women (52,3%) with 23,112 qualified. In other words, 88,2% of the total number are qualified compared with 85,2% in 2002-2003. Women are proportionately better qualified than men: women at 89,3% of the total versus men at 87,1% (Rwanda, 2004j).

Table 3.1: Primary school teacher numbers and qualifications 1998/1999 to 2003/2004

Number of teachers	Sex	1998/1999	1999/2000	2000/2001	2001/2002	2002/2003	2003/2004
	<i>Males</i>	10,546	12,457	14,034	12,975	13,616	12,490
	<i>Females</i>	12,890	14,042	14,664	13,049	13,703	13,702
	Total	23,436	26,499	28,698	26,024	27,319	26,192
Qualified teachers (%)	<i>Males</i>	52,9	55,0	62,1	80,8	84,4	87,1
	<i>Females</i>	46,2	54,3	63,3	81,6	86,0	89,3
	Total	49,2	54,7	62,7	81,2	85,2	85,2

(Source: Rwanda, 2004j)

3.2.3 Enrolment rates

The number of children of school going age (7-12 years) was 1,493,725 in 2004, including 732,872 boys and 760,853 girls. In seven years, they would be 254,025 with 124,739 boys and 129,286 girls (Rwanda, 2004a).

The admission rate in the first year highlights the efforts to enrol children in primary school, whether they are seven years old, more, or less than twelve years old. In 2004, the gross admission rate calculated by using the projection of the population from the data of the national census of August 2002 is 198,7%. This rate is higher for boys (199,8%) than for girls (197,7%). The net admission rate was 25,3% with 24,9% for boys and 25,7% for girls (Rwanda, 2004g).

3.2.4 Transition from primary schools to secondary schools

The rate of transition from primary schools to secondary schools is a key indicator of the performance of the educational system. It indicates the efforts made in order to allow learners to go on with their basic general training; but it depends on receiving capacities established by the public and the private sector.

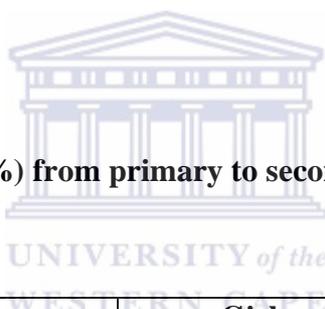


Table 3.2: The transition rate (%) from primary to secondary education from 2001-2003

	Boys			Girls			Total		
	2001	2002	2003	2001	2002	2003	2001	2002	2003
Public and semi private schools	23,5	24,6		16,6	16,4		20,2	20,6	-
Private schools	14,3	20,1		20,0	24,9		17,0	22,4	-
Total	37,7	44,6	51,0	36,6	41,3	45,4	37,2	43,0	48,2

(Source: Rwanda, 2004a)

The transition rate from primary to secondary has dropped 5% in the school year 2000-2001 to 2001-2002, from 42,2% to 37,2%. This is due to an increase in the number of pupils completing primary school, with a slight drop of pupils admitted at secondary education level. For the school year 2003, the transition rate was 48,2%. The rate for boys (51%) was higher than the one for girls (45,4%). Table 3.2 illustrates that there is still a small number of children in primary education who go to secondary schools. One of the reasons is that the

places are limited in secondary schools. This causes a high level of dropout in primary education. Other reasons include the direct and indirect fees to support the children in the secondary schools especially in private ones (Rwanda, 2004a).

3.2.5 School Output

The output of an education system can be analysed based on three indicators. First the promotion rate (percentage of pupils of a specific class that are admitted or "promoted" to the higher level); second, the repetition rate (percentage of pupils that repeat the same class) and the dropout rate. While the first two are known through the statistical census which registers the pupils according to whether they repeat or are promoted, the third indicates the percentage of pupils whom one cannot find in the education system.

Table 3.3: The average outputs (%) from grade one to five from 1998 to 2003

		1998	1999	2000	2001	2002	2003
1 st to 5 th year	Promotion	56,2	51,2	49,6	54,0	66,2	64,2
	Repetition	32,1	38,4	37,6	31,8	17,2	20,6
	Drop out	11,7	10,4	12,8	14,2	16,6	15,2

(Source: Rwanda 2003f)

The output of the Rwandan education system (Table 3.3) has remained at a low level since the promotion rate is 64,2% in 2003 and has decreased by 2% compared to 66,2 % in 2002. In 2003, there was a reverse of the tendencies observed in 2002. The repetition rate has increased to 3,4% whereas the drop out rate has slightly decreased to 1,1%. Currently, in the first five years of primary school, one out of five pupils repeats the year and almost 15% drop out. The information is not geographically specific and might hide spatial variations.

3.3 Overview of secondary education

Secondary education was offered before 1994 in two distinct formulas, starting from the first year: a long cycle of six years and a short cycle of 4 years. In 1996, the education system has

been renovated into two consecutive cycles, the first cycle of three years, which constitutes the general lower secondary education level for all streams, and a second cycle of three years of upper secondary level with different streams. Courses were taught in French. However, since the end of the 1994 genocide and the return of refugees from Anglophone countries, certain secondary schools provide courses in English language teaching (English for Francophones and French for Anglophones). It has been reinforced by the standardization of secondary education curricula in all schools. In all streams, students continue to study Kinyarwanda until at least 5th year. Secondary education includes general secondary education, teacher-training and technical and vocational education (Rwanda, 1998).

3.3.1 General secondary education and teacher training

General secondary education comprises scientific streams (Mathematics/Physics and Biochemistry) and two literacy streams (Arts and Humanities). Eleven teacher-training colleges (TTCs) -- one in each province -- offer initial and in-service teacher training and help to improve the quality of teaching staff by upgrading existing under-qualified teachers and giving new recruits an intensive basic training. These TTCs have the capacity of approximately 2,500 students each year. There are also several private or government-subsidized schools with special sections to train primary teachers.

Initial and in-service training of secondary teachers is concentrated in two institutions: One is at the National University of Rwanda; the other is Kigali Institute of Education (KIE). In 2001, a distance-training programme started at KIE to upgrade under-qualified secondary teachers. In 2001-2002, only 52% of the 6368 teachers in the secondary system are qualified. Of these teachers, approximately 1200 are women of whom only about 25% are qualified. Teacher-pupil ratios at secondary level are 1:24 (Rwanda, 2002a).

In 2003, there were 7,058 teachers in secondary schools – 49% of them were qualified with only 9,5% of qualified females. The teacher-pupil ratios at secondary level were 1:26.1 in public schools and 1:24.9 in private schools (Rwanda, 2003d).

3.3.2 Technical and vocational training

Technical education is offered in technical schools in the second cycle of secondary education. Vocational training is offered at two levels. The first is offered after primary education and produces artisans. The second includes courses such as Nursing and Agro-Veterinary, which are offered at the second cycle of secondary school (Rwanda, 2002b).

Historically, Rwanda has a shortage of technicians, and where technical education has existed, it has often been of poor quality. This situation was exacerbated by the events of 1994 when some of the few technicians that existed were killed in the genocide or fled the country. The official technical streams start in the secondary level and are available in seven schools (Rwanda, 2002a).

Technical subjects on offer include Electricity/Electronics, General Mechanics, and Public Works/Construction. However, only 3,500 out of a total of almost 58,000 upper secondary pupils (6,1%) were enrolled in Technical Education. Professional education focuses mainly on traditional skills such as secretarial skills, agro-veterinary, nursing and teaching, and caters mainly for girls. The Ministry of Youth, Sport and Culture supports vocational training centres. It provides a year's training to disadvantaged young people (Rwanda, 2002b).

3.3.3 Schools

When the school year 2003-2004 started, 504 schools were providing the secondary education either in common core (the first three years of secondary school) or in the second cycle. In 2004, in order to increase the number of pupils in secondary schools, the Ministry of Education opened supplementary 100 schools shared by all provinces. These were previously centres for rural and art education (CERAI), non-operational after the 1994 genocide, whose classrooms have been transformed into lower secondary schools. The schools are distributed based on their status, 147 public schools (they were 78 in 2003), 139 private subsidized schools (teachers are paid on the public budget) and 218 private schools. The secondary education is considerably increasing particularly in 2004 because the number of schools has shifted from 405 in 2002-2003 to 504 currently. This increase is mainly due to the role played by the Government in opening 69 supplementary schools. The private subsidized schools have

also increased to 27, while the private sector stayed almost static with an increase of 3 schools (Rwanda, 2004i).

3.3.4 Role of the private sector

After 1964, access to secondary education was determined by a system of national competition introduced due to the limited number of places in public secondary schools. The system was based on quota by ethnicity and region as criteria for admission and orientation to secondary education. After the 1994 genocide, transitional measures were taken in favour of private education such as the separation of secondary education into two cycles, the abolition of the quota system in favour of the new education system based on merit and the introduction of a single examination for pupils who complete the secondary studies. This measure involves public, private subsidized and private schools (Rwanda, 1998).

Before the 1994 genocide, private education was prevalent at the secondary level of education. It was provided mainly by parents' associations and religious or youth movements. It was guided by the Presidential Decree 509/13 of 20 October 1985. Basically it was the process of financing and approval of diplomas, which differentiate the public from the private education. Private education attracted national and international partners, this contributed to raise enrolment rate in secondary schools to cope with the demographic pressure on one hand and to economic decline faced by Rwanda during that period on the other hand. Strongly encouraged by the state (which was unable to satisfy the demand for education without the partnership of the private sector), private schools operated essentially with funds and contributions from parents by agreement with the Ministry of Education. Private education institutions represented half of enrolments of public education institutions, while the number of schools exceeded those in the public sector (Rwanda, 2004d).

In private education, the quality of teaching varies from one school to another. The notable characteristic of private schools is that while public schools are situated in cities where basic school infrastructure exists; private education has developed mainly in rural areas. Therefore, these institutions are often considered as 'education for the poor' depending on poor parents while in the city they could become 'a business'. Recruitments by private schools were carried out after the publication of the official admissions of public schools. Many private

schools were not recognized and thus diplomas obtained from those schools were not recognized by the state (Rwanda, 1998).

Table 3.4: Secondary pupil pass, repetition and drop out rates (%) by sex, 2001-2003

		Boys			Girls			TOTAL		
		2001	2002	2003	2001	2002	2003	2001	2002	2003
Year 1	Promotion	86,9	96,8	87,2	83,7	92,9	88,5	85,3	95,0	87,8
	Repeating	11,1	6,7	6,4	13,6	8,9	8,4	12,4	7,7	7,4
	Drop out	2,0	3,5	6,4	2,6	1,8	3,1	2,3	2,7	4,8
Year 2	Promotion	89,6	91,5	82,9	83,6	84,8	81,0	8,5	88,2	81,2
	Repeating	8,9	7,9	8,8	11,9	12,1	12,5	10,4	9,9	10,6
	Drop out	1,5	0,6	8,3	4,4	3,1	6,5	3,0	1,9	8,2
Year 3	Promotion	99,2	93,7	82,1	93,4	79,8	72,2	96,2	86,6	77,2
	Repeating	5,7	7,4	11,8	10,6	12,4	17,8	8,2	9,9	14,7
	Drop out	4,9	1,1	6,1	4,0	7,8	10,0	4,4	3,5	8,1
Year 4	Promotion	87,9	93,3	88,7	87,4	87,7	82,8	87,7	90,5	85,9
	Repeating	6,7	4,5	5,8	10,3	6,8	8,6	8,5	5,6	7,1
	Drop out	5,4	2,2	5,4	2,3	5,5	8,4	3,8	3,9	7,0
Year 5	Promotion	95,7	93,8	86,4	90,7	87,2	93,2	93,2	90,4	89,8
	Repeating	4,8	5,0	3,9	8,0	7,8	6,3	6,4	6,4	5,0
	Drop out	0,5	1,2	9,7	1,4	5,0	0,5	0,4	3,2	5,2
	Promotion									
Year 6	Repeating	5,8	6,2	2,2	8,9	9,0	3,5	6,6	7,6	2,9
	Drop out									

(Source: Rwanda 2003h)

The secondary school education presents high promotion rates superior to 77%. The repetition rate is higher in grade two and grade three (10,6%) and (14,7%) respectively (Table 3.4). The dropout rates are generally low in secondary schools. Female pupils have the highest rate of repetition at all levels compared to male pupils. The difference is between 1,3% in Grade Six and 6% at the end of Grade Three. For the dropouts, there are significant differences. Male

pupils mainly drop out in Grade Five (9,6% more than girls) and in Grade One and Two (differences from 3,3 to 1,8%). The drop out rate of female pupils is higher than that of male pupils in grades three and four with differences from 3,9% to 3,1% respectively. There is a decline in the repetition rates and the drop out rates in 2002 but they shortly increased (except for repetition rates in grades five and six). The decline is noticeable for both male pupils and female pupils, except for the repetition rate of male pupils in Grade Five and Grade Six (Rwanda, 2003h).

Table 3.5: Pupils by school type in secondary schools in 2003

	Public		Private subsidized		Private		TOTAL	
	Number	%	Number	%	Number	%	Number	%
Arts and Humanities	2304	13,9	6127	36,9	8191	49,3	16622	23
Math-Physics	988	19,5	2869	56,6	1212	23,9	5069	7
Bio-chemistry	1861	18,7	5175	52	2922	29,3	9958	13,8
Total General Education	5153	16,3	14171	44,8	12325	38,9	31649	43,9
TTC	1151	12	4120	43,1	4292	44,9	9563	13,3
Agro-Veterinary education	1512	48,9	657	21,2	924	29,9	3093	4,3
Health sciences	1384	30,3	1104	24,2	2079	45,3	4567	6,3
Accounting/ Secretariat / Administration	898	5,7	3249	20,7	11538	73,6	15685	21,7
Hotels	0	0	0	0	414	100,0	414	0,6
Other professional education	94	9	93	9	859	82,1	1046	1,4
Total professional education	5039	14,7	9223	26,8	20106	58,5	34368	47,6
Electricity/ Electronics	641	21,8	265	8,9	2050	68,6	2986	4,1
General mechanics/ Auto	586	44,7	68	5,2	658	50,2	1312	1,8
T.P. / Construction	573	33,3	203	11,8	944	54,9	1720	2,4
Other Technical education	89	100	0	0	0	0	89	0,1
Total Technical education	1889	30,9	566	9,2	3652	59,8	6107	8,5
TOTAL	12081	16,7	23960	33,2	36083	50	72124	100

(Source: Rwanda 2003d)

Professional education has the highest share of pupils with 47,6% in 2002 and 53,1% in 2003. It is slightly higher than general education which has 43,9% and 40,4% in the corresponding years. The technical education has the lowest numbers of pupils despite the slight increase of pupil numbers to 6107 (8,5% of the total) in 2003.

Arts and Humanities absorb the highest number of pupils with 23% (19,9% in 2003). Accounting and secretariat follow with 21,7% (19,6% in 2003). Almost all the pupils in the accounting and secretariat option are found in private schools. The percentage of pupils in teacher training centres has decreased from 20,6% to 13,3% of the total in 2003. The Sciences streams receive relatively few pupils: 5069 pupils (7%) in the mathematics-physics streams (this is a slight increase compared to the school year 2002 with 3729 (5,7%)), and 9958 in bio-chemistry (14,7%) in 2003). The private subsidized schools provide more than 53% of the teaching of sciences and the public schools offer only 19% (17,6 % in 2003), which is less than what the private schools provide (27,6%). Professional education represents (47,6%) of the total number of pupils in the second cycle (53,1%) during the school year 2002-2003. The private sector provides the most important part (58,5%) of the professional education. It is followed by the private subsidized sector (26,8%). Public education focuses mainly on agro-veterinary education (48,9%) and health sciences (30,3%). The hotels option is found in private schools only. Lastly, the technical education option receives 6,107 (8,5%) of the total number of pupils in the second cycle. This technical training is given in public schools (30,9%) and in private schools (59,8%); the private subsidized sector receives only 9,2% of the pupils (Rwanda, 2003d).

3.3.5 Teaching personnel

The teaching personnel in secondary schools was 7750 in 2003, Female teachers represent only 19,9% of the total. The pupil per teacher was 27,7:1 in 2004 in secondary schools, (25,4:1 in 2003). However, slight differences in pupil-teacher ratio are noticed depending on the status of schools: 22,5:1 for the public sector, 30,4:1 for the private subsidized sector and 47,2:1 for the private sector. The administrative staff represents 2,881 out of 10,631 (Rwanda, 2004h).

Table 3.6: Qualified staff (diplomas) in different schools in 2003

		Teaching staff		Administrative staff		All staff	
		Number	Qualified (%)	Number	Qualified (%)	Number	Qualified (%)
Public	Males	1372	49,7	435	45,5	1807	48,7
	Females	377	23,3	232	10,3	609	18,4
	Total	1749	44,0	667	33,3	2416	41,0
Semi-private	Males	1815	53,1	476	47,1	2291	52,0
	Females	540	21,8	381	15,2	921	19,5
	Total	2355	45,9	857	36,0	3212	42,5
Private	Males	3023	62,9	877	49,7	3900	59,9
	Females	623	31,3	480	13,5	1103	23,6
	Total	3646	57,5	1357	36,9	5003	51,9
Total	Males	6210	57,1	1788	48,0	7998	55,1
	Females	1540	26,0	1093	13,4	2633	20,8
	Total	7750	51,0	2881	34,9	10631	46,6

(Source: Rwanda 2003h)



For the school year 2003-2004, the qualification rate of secondary school teachers is low with only 51% (52,1% in 2003). One teacher out of two is qualified. Female teachers are less qualified (26%). The qualification of females remains almost the same regardless the status of schools.

According to the status of schools, the qualification rate is high in private schools: (57,5%) followed by private subsidized schools with (45,9%) and public schools with 44%.

Concerning the administrative staff, the qualification rates presented in Table 3.6 do not have the same significance. These data include supporting personnel who sometimes teach and other administrative staff who do not need any University training for their work. However, 34,9% are qualified (37,5% in 2003) – in this case, (13,4%) of females and (48%) of males respectively (Rwanda, 2004h).

3.4 Rwandan education policy

As the war and genocide of 1994 paralysed the country's socio-economic infrastructure and disrupted Rwandan's values, the Government is committed to rebuild the country through the social reconstruction and economic development. It is in this regard that education is expected to play an important role and contribute to the socio-economic reconstruction of the country by enhancing human development resources. Policy for education sector and its objectives reflect the broader policy environment set by the guidelines of vision 2020, the poverty reduction strategic plan, policies on Decentralisation and ICT, and the commitment of Rwandan Government to achieve certain international development goals, particularly Universal Primary Education and Education for All by 2015 (Rwanda, 2003a).

Education is a fundamental human right and an essential tool to ensure the full blossoming of the potential of every individual. The development of human resources is one of the principal factors in achieving sustainable economic and social development. Education is considered as a critical lynchpin to achieve development and poverty reduction in Rwanda. Education should provide the necessary skills and values whilst improving the quality of human life (Rwanda, 2002a).

As a Rwandan Government policy, the Ministry of Education has decentralized its administrative functions. Central Government will remain responsible for policy formulation, national planning for education setting standards and norms, monitoring and evaluation, curriculum production and approval of educational materials. Local Government on the other hand, will be responsible for the execution of policy, planning, administration of schools and follow up of education activities. Therefore, decision-making power is transferred to district and provincial levels, and the local management of schools is encouraged, in cooperation with parental committees. For decentralization to be successful, extensive capacity building is required at both central and local levels, given the lack of experience in the decentralized administrative and financial procedures (Rwanda, 2000).

The Rwandan Government is committed to share power with local communities, and to encourage the population to participate decisions that concern their future. Therefore,

decisions regarding planning are taken at the provincial level and district council. This includes teacher development and management. Teacher salaries and welfare are also handled at the local level. It is in this context that the Ministry of Education is closely collaborating with the Ministry of Local Government and Social Affairs to deal with such educational issues. The Ministry of Education would make policy and play an advisory role to the local authorities. Key specialized areas such as curriculum development and national examination will continue to be planned, designed and organized at the national level. Thus the decentralization of education in Rwanda has marked a major shift in the organization of the education system in Rwanda after the 1994 genocide (Obura, 2003). The education system comprises twelve directorates at the provincial level to reinforce the district inspectorates for a greater decentralization of decision-making power to the provincial and district level (Rwanda, 1998).

3.4.1 Poverty reduction

Rwanda's poverty is the result of both economic and historical factors. First, the economic structure reflects a persistent failure to achieve productivity increases due to a high population growth rate. This failure became increasingly evident especially in the 1980s and early 1990s. Second, the war and the 1994 genocide left a horrific legacy, further affected the country's economy and leaving a number problems and challenges for different sectors (Rwanda, 2002b).

Poverty is not only about low incomes, but includes other aspects of life. There is a strong linkage between education and poverty as disadvantaged groups in the education sector have limited access and control over economic opportunities and thus are more likely to fall under the poverty line.

Primary education is the most critical part of basic education as it absorbs a large number of school children. Completing primary education may increase incomes. In addition, primary education has a major impact on health outcomes, particularly girls' knowledge of fertility rates and child mortality and morbidity. Basic literacy also reflects increases in agricultural productivity and small enterprise development. Improvement of educational outcomes can support better governance. Finally, primary education is a crucial input into higher levels of

education. The quality of education delivered at the primary level is the most significant determinant of sustained enrolment. It is therefore important to ensure high quality in primary education if high-quality secondary and tertiary education is to be delivered (Rwanda, 2002b).

Education in Rwanda intends to provide the necessary human capital for poverty reduction, making available the only negotiable capital to which the majority of the population will have access. Key priorities within the poverty reduction strategy paper in the education sector include achieving the education for all (EFA) by 2015, reducing gender inequality in education; the provision of textbooks and relevant curricula at all levels of the education system; the training of more teachers particularly at primary level; and the provision of HIV/AIDS education to all school children. The Poverty reduction strategy paper places also considerable importance on Science and Technology with special attention to information communication technology, vocational and technical education and functional adult literacy (Rwanda, 2002a).

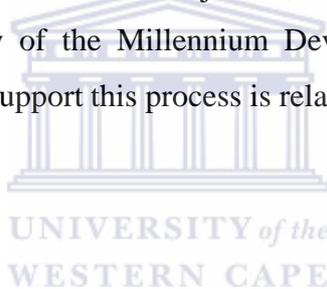
3.4.2 International Development Targets

Rwanda is committed to International Development Targets in Education such as Education for All (EFA) by 2015, narrowing gender disparity in education, the development of science and the use of Information communication technology (ICT) in education (Rwanda, 2002a). Within the emerging information revolution worldwide, ICT is a key factor for achieving progress in economic and social development in Rwanda. ICT offers Rwanda a window of opportunity to leap-frog the key stages of industrialization and transform her subsistence agriculture dominated economy one driven services and high value-added information. The country aims also to be producer and developer of technology, not just a consumer (Hayman, 2005).

An educated workforce is a prerequisite for reaching these ambitious goals. This in turn requires a heavy investment in human resource development and capacity building at all levels, and partnership with donors and the private sector is encouraged for the development of the education sector. The government's primary objective in Vision 2020 for education is to provide Universal Primary Education (UPE) by 2010 and subsequently Basic Education for All (EFA) by 2015. To achieve these targets, Rwanda will have to deal especially with

the high dropout and repetition rates and will have to continually review school curricula (Rwanda, 2002a).

Particular attention must be given to the teaching of science and technology that has been neglected for a long time due to poor teaching and under-funded research. Science teaching at all levels of education constitutes currently the heart of the education system. The Rwandan Government is introducing programs in science and technology, including for example projects on medical applications of local biodiversity, agricultural processing and energy. In connection to the existing research programs and the private sector, it will be easier to avoid duplication and ensure commercial exploitation (Rwanda, 2002b). Although Rwanda is beginning behind the starting line in trying to achieve Millennium Development Goals (MDGs) due to the negative reversal since 1990 caused by the civil war and the 1994 genocide, the determination of Rwandans and the sound policies that have been adopted are laying the foundation for sustainable and reliable justice, democracy, and economic growth as preconditions for attaining many of the Millennium Development Goals. The process of creating a policy environment to support this process is relatively positive (Hayman, 2005).



3.4.3 Curriculum

Before the 1994 genocide, there was a 'pedagogical bureau' in charge of a curriculum development, assessment and examination, and teacher training. Important decisions and authority were concentrated in one institution. This characterized the rest of the education system and other government services. Consequently, this increases corruption, inefficiency and failure of the education system as a whole. In 1996 the 'pedagogical bureau' was fragmented and three major institutions were set up as supportive organs of the Ministry of Education namely the National Curriculum Development Centre, the National Examination Council, and the General Inspectorate of Education. The restructuring has been an important step in the process of education reform since the 1994 genocide (Obura, 2003).

The National Curriculum Development Centre (NCDP) was created in 1998 with the aim of educating Rwandans to be critical, well informed, self-reliant, patriotic, scientifically aware and competitive in the local, regional and international labour markets. The Rwandan Government puts much emphasis on the curriculum reform within education policies over the last ten years as it is considered central to correcting the errors in the education system, which

stimulates hate and discrimination among Rwandans. The NCDP six-year plan (2003-2008) highlights values and skills to be promoted such as employability, life skills, ICTs/science, rural development, vocational skills, peace and reconciliation, and critical thinking (Rwanda, 2003g).

One measure introduced in school was to exclude the categorization of learners and teachers according to their ethnic identification. A new set of values such as similarities among Rwandans, equity, inclusiveness, and individual responsibility was taught at school (Obura, 2003). To solve the historical divisions among Rwandan people and build a permanent constant peace, the curriculum needed to be reformed to address these concerns. It emphasises values that can bring people to live peacefully together. Peace, social cohesion, unity and reconciliation should pass on through education the civic values that were missing in the previous curriculum (Rwanda, 2003g).

Another significant change was to recognize the post-war diversity of Rwandan children and to accommodate their diverse past schooling from exile and languages within a new curriculum. This serves also to pursue the direction of inclusiveness. The new curriculum also focuses on foreign language learning at all levels of the education system: French and English were compulsory subject from first Grade; English was for the first time introduced in Rwanda's education into the primary curriculum as a compulsory subject from Grade 1. French or English were used as the medium of instruction in upper primary (P4-P6), the decision depending on the school administration (Obura, 2003).

3.4.4 Textbook policy

Rwanda has been developing a textbook policy during the school year 2001-2002 in order to accelerate textbook production and improve the quality of books provided to schools. Different factors such as the general goals of education, the curriculum, the education language policy and cost were considered for the development of such policy. The private sector publishing has been recognized as faster as and more professional than concerned departments in the Ministry of Education. Therefore, the textbook policy intends to improve national publishing capacity.

The Ministry of Education aims also to decentralize textbook selection and budgets to school level. The tendering board and a textbook approval committee have been set to ensure quality of textbooks. Local publishing capacity is to be expanded in Rwanda under the Ministry of Education, which determines the different parameters to be followed to increase local involvement. This will motivate foreign publishers to build up local publishing skills and capacity during the process of developing new materials. The textbook policy specifically targets capacity building in the private sector rather than concentrating on the department in the Ministry of education for an efficient production process (Obura, 2003).

3.4.5 Financing policy

A new financial planning tool has been developed, namely the medium-term expenditure framework (MTEF), which represents the governments' shift from short-term, relief-oriented annual plans to three-year budgetary framework for more realistic projections of spending. This will allow planners to match resource availability with resource requirements over a three-year period.

As education is considered as a sector, a sector-wide approach has been developed within the education system for the development and implementation of the education policy and education sector plan. The aim is to develop a coherent sector-wide plan for education, prioritising goals and matching programs with resources available. Increasing internally generated budgetary provision associated with contribution of external partners, and the private sector will improve educational development in Rwanda. Communities will also make significant input into decision-making regarding planning and expenditure at local level, and organize ways of contributing to local education funds (Obura, 2003).

3.4.6 Gender

Gender parity and equality in access to education is an important component of the international goals. In Rwanda, it is likely to be inequalities in education between girls and boys especially when the level of education gets higher (Rwanda, 2000). The education of girls yields high economic and social profits considering fertility, and maternal and child health. Despite important progress, the participation of girls in school lags behind boys due to barriers such as sexual harassment, the social expectations from girls, and the lack of school

facilities. A special emphasis is required to overcome the impediments of girls' education. In this regard, the Ministry of Education aims to take actions such as training teachers and the community in gender sensitivity, increasing the number of trained female teachers, and improving learning environments to overcome the gap between the sexes in the education sector (Rwanda, 2002b).

The Ministry of Education in collaboration with the Forum of African Women Educationist (FAWE) focuses on the development of girls' education. It has been identified as an essential to overcome poor national indicators related to maternal mortality ratios, and problems associated with child mortality rates, women's low literacy rates and poor representation in decision making. One of the major achievements of FAWE is the construction of a girls' secondary school in Kigali City. Currently, FAWE intends to extend and spread its activities to primary and secondary schools in rural areas (Obura, 2003).

3.4.7 Automatic promotion

Internal efficiency is concerned with the extent to which particular educational goals are achieved with a given input of resources. The goal is for students to flow through the system and graduate with minimum waste. Wastage in the flow of students is expressed quantitatively in the form of dropouts and repeaters (Nadeen & Othman, 2002). Rwanda adopted the automatic promotion policy after the 1994 genocide. However the decision to promote students depends on the teachers' committee which assesses the reasons of failing and decides on who should advance to the next class.

3.5 Conclusion

The primary education situation in Rwanda in 2003-2004 was characterized by an increase in the schooling of children and the qualification of teachers. However, problems such as the drop out rate, the repetition rate, the low promotion rate and the lack of classrooms persist. The gross enrolment rate of 135% is still high and it reflects that many pupils are not enrolled in primary schools at the normal age (less than 7 years and more than 12 years).

The Rwandan curriculum has been the subject of much debate. Rwandan history is still not taught in schools today despite official encouragement to teach those elements of history which are not in dispute. Rwanda is simply not yet ready to tackle the revision of the history curriculum, although national and international historians continue to produce new and exciting findings on Rwanda's social history. Since 1994 no history textbooks have been written.

A number of studies have already shown the reasons of gender disparities in Rwanda. First of all, at macro-level, overall poverty induces inadequate allocation of resources for education. HIV/AIDS pandemics, war and genocide with their consequences for girls and women add to the difficulties. Secondly, socio-cultural factors hinder the education of the girls: some parents whose expectations of girls and boys are different in favour of boys (especially in the context of poverty, child labour, early marriage for girls and gender socialization) are the main causes of gender disparities. To address these issues, the mentalities of parents need to be changed: they should also encourage girls to go to school. Thirdly, legal and policy factors need to be addressed. Until recently, there was no national girls' educational program. There were limited and poorly coordinated interventions and implementation of existing laws and policies.

After the 1994 genocide, Education for All has played a unique role in a country which has been torn apart by discrimination and exclusion and where the education system was used as an instrument of social destruction. The lesson to be learned is that the time for Education for All is now: the state needs to reach out to every child, in every circumstance, with something that she or he can call school and to demonstrate to all children that they are, each one of them, the concern of the state.

CHAPTER FOUR

THE GEOGRAPHY OF PRIMARY AND SECONDARY EDUCATION IN RWANDA

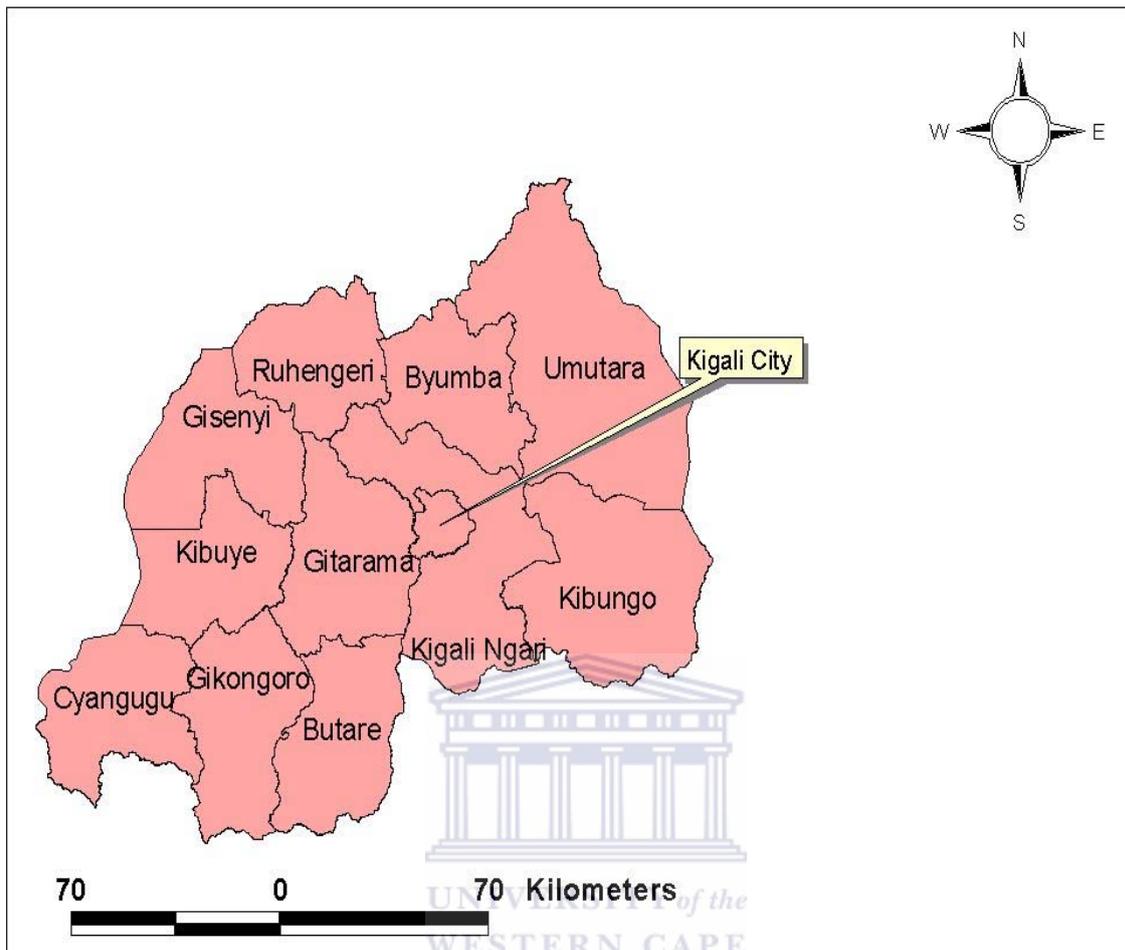
This chapter is viewing primary and secondary education to better understand the spatial aspect of the Geography of education in Rwanda. It also explains in detail the internal efficiency of the Rwandan education system and its different components.

Improving the quality of education is a key element for enhancing its internal efficiency because low quality contributes to low demand for education. School childrens' learning potential is inhibited where there are insufficient or inappropriate inputs such as trained teachers, curriculum, and school infrastructure. In this context, repetition and dropout rates are usually high which have a negative impact on the quality of education (Colclough, Rose & Tembon, 2003). Internal efficiency in education systems usually refers to 'the proportion of students who complete designated segments in those systems. This is calculated on the basis of dropout, repetition and promotion rates' (Lerotholi, 2000: 83). The education system is considered inefficient if dropout and repetition rates are high before the end of the cycle. By contrast, the education system is efficient when pass and completion rates are high. The most important educational inputs that positively affect efficiency are per-pupil expenditure, teacher ability, teacher education, teacher experience, teacher-pupil ratio, and school and class size (Greenwald, Hodges & Lane, 1996).

The major symptoms of internal inefficiency are repetition and dropout rates. School repeaters are defined as 'pupils who are enrolled in the same grade as the previous year'. The repetition rate is measured as the percentage of repeaters in the total number of students enrolled at a given level. The dropout rate is defined as the percentage of children who start primary school but do not eventually attain the final grade of primary school (Lee & Barro, 2000).

This part of the study examines the internal efficiency of the education sector in Rwanda. It explores the reasons for dropping out in developing countries and in Rwanda in particular focusing on primary and secondary education. It also analyses the reasons for the geographical disparities in education.

Figure 1: The twelve provinces of Rwanda



4.1 Primary education in Rwanda

There was a regular increase of percentages of pupils over some years (7% for the school year 2002-2003 and 7,2% and 6% for the previous two years), which causes an improvement in the gross enrolment rate of 130,8% and a net enrolment rate of 93,0% during the school year 2003-2004. The drop out rate decreased slightly from 16,6% to 15,2%. The gross enrolment rates (GER) was 131, 0% for girls and 130,6% for boys. The net enrolment rate (NER) was 94,5% for boys and 91,5% for girls. Note that the difference between the GER and NER comes from the presence among in-school pupils of those who are less than 7 or more than 12 years old. The gross enrolment rate is the proportion of the total enrolment, regardless of age, to the proportion, which, according to the official national regulations, should be enrolled at a specific level. While net enrolment rate is the proportion of the number of pupils enrolled of a given age group to the size of the population of the same age group (Rwanda, 2003c).

There was an improvement concerning teacher qualification which reached 88,2% and was slightly higher for females (89,3%) than males (87,1%) (Rwanda, 2004a). The teacher-pupil ratio is still high 67:1 compared to the standard average of 40:1. The system of studying either in the morning or in the afternoon also handicaps pupils as far as their results are concerned. During the school year 2003-2004, 57,8% of the existing classrooms are believed to be of good quality. The drop out rate is still significant (15,2%) and it is particularly strong in 5th form (24%), with important differences from one district to another. There is need to deal with the repetition rate since it has an impact on the drop out rate.

The majority of classrooms are in good condition, but 23% of the total number of 677 classrooms needs to be rebuilt as they are in bad condition, and this is applicable to all provinces except Kigali City. The rebuilding mainly concerns the classrooms that are built in mud bricks mixed with building blocks in the provinces of Ruhengeri, Gitarama and Kibuye, as well as other buildings in wood in the provinces of Cyangugu and Kibungo. There are 2,3% of the 677 classrooms under plastic sheeting, and/or trees, and an other 215 rooms out of the schools. Those rooms are borrowed or rented from the district, religious organisations or other individuals. All these situations indicate therefore that classrooms are not sufficient especially in the North Western and Eastern regions (Rwanda, 2004a).

4.1.1 School Infrastructure

The number of schools has increased to 59 in 2004 that is from 2233 in 2003 to 2291 in 2004. The provinces of the Northwest including Gisenyi (2727) and Ruhengeri (3392); and those of the central region such as Gitarama (3568) and Kigali Ngari (2895) had the highest number of classrooms (Table 4.1). The unfavourable situation is noticed for Kigali City (1670) and Umutara (1536). The provinces with the highest number of schools are also located in the Northwest region and central region, Gitarama (278), Gisenyi (237), and Ruhengeri (236). Provinces with lowest number of classrooms are mainly in the North-East, Umutara (121), Kibungo (168) and in Kigali City (90).

During the school year 2003-2004, new schools were created in Kigali-Ngari (9 schools), Byumba, Cyangugu and Kibungo (6 schools). More than half of the existing classrooms are

built in long lasting material while 38% are built in a mixture of long lasting material and non-long lasting material. 1338 classrooms are built of wood. More than half of the existing classrooms are of good quality (57,8%) while 4527 (15, 4%) need to be rebuilt (Rwanda, 2004g).

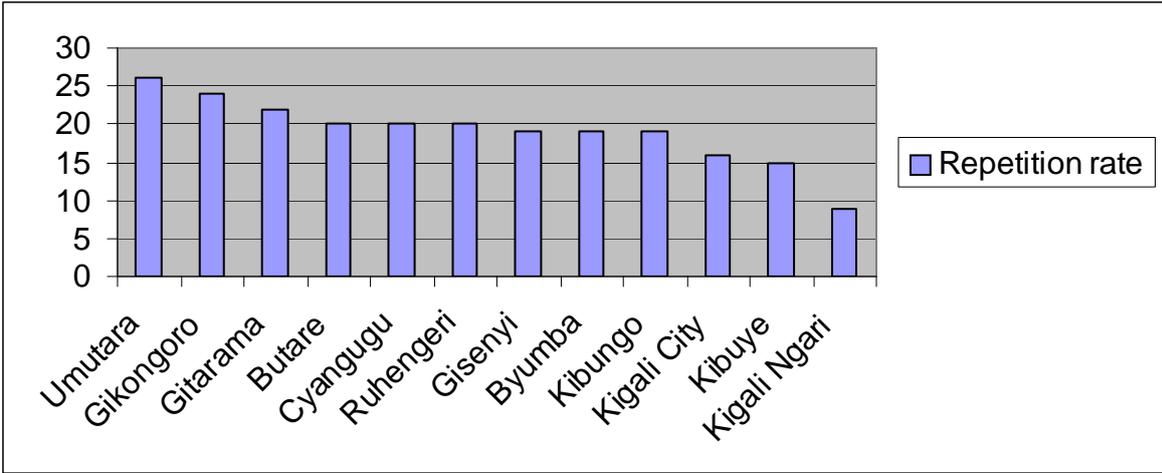
Table 4.1: Number of primary schools and classrooms in 2004

Provinces	Schools	Classrooms
Butare	208	2409
Byumba	173	2515
Cyangugu	186	2606
Gikongoro	168	1941
Gitarama	278	3568
Gisenyi	237	2727
Kigali City	90	1670
Kigali Ngari	200	2855
Kibuye	197	1909
Kibuye	197	1909
Ruhengeri	236	3392
Umutara	121	1536
Rwanda	2291	29037

(Source: Rwanda, 2004g)

The ‘percentage of pupils who repeat per province’ illustrates important variations regarding the repetition and thus the output of the education system (Figure 2). Two provinces are particularly noticed because of their repetition rates which are much lower than the national average. These provinces are Kigali Ngari and Kibuye with 8,8% and 14,7% respectively. On the other hand, three provinces have rates which are superior to 20%. These are Umutara (25,8%), Gikongoro (23,9%), and Gitarama (22,3%) (Rwanda, 2004b).

Figure 2: Distribution of repetition rates (%) by provinces in 2004



(Source: Rwanda, 2004b)

4.1.2 Pupil-class, pupil-teacher and pupil-school ratios

The pupil-class and pupil-teacher ratios complete the indicators of the preceding results and they indicate the means which the Government has to acquire in order to satisfy the education demand or to reach the target objectives such as the universal primary education in a fixed time frame or the improvement of teaching. Such means relate to the development of school infrastructure such as schools, classrooms and laboratories. The Government should also focus on the qualification of teachers at all levels (Rwanda, 2003c).

The 2291 schools in the country have an average of 774 pupils and each school has 15 classes (Table 4.2). The highest pupil-school ratio is at Kigali City (1010 pupils) followed by Kibungo (969), and Kigali Ngari (902) provinces. The lowest averages are found in Kibuye (557) and Gikongoro (600) (Rwanda, 2004c).

The pupil-class ratio for the first and second cycle of primary school is 51% for the whole country. The situation in Gitarama province is the most favourable with an average of 46% while Kibungo has 69 % and Kigali-Ngari 56%, where the pressure seems to be higher.

Concerning the pupil-teacher ratio, it depends on the system of ‘double shifting’ whereby pupils study either in the mornings or afternoons only. This has a direct impact on the quality

of teaching and thus on the outputs of the education system as a whole. At the national level, the average is 67 pupils per teacher. This illustrates an increase if compared to 2002/2003 with an average of 59 (Rwanda, 2003c). Kigali City presents a particular case with an average of 50 pupils per teacher because of the low number of classes with double shifting and the involvement of private sector in education sector compared to other provinces. Kibungo presents the most unfavourable situation (78%), followed by Umutara (75%) and Kigali Ngari (72%) (Rwanda, 2004c).

Table 4.2: Pupil-class, pupil-teacher and pupil-school ratios in 2004 in primary schools

Provinces	% Qualified teachers	Pupil-class	Pupil-teacher	Pupil-school
Butare	59	51	65	648
Byumba	34	48	67	811
Cyangugu	51	54	64	694
Gikongoro	52	49	62	600
Gisenyi	45	47	67	892
Gitarama	51	46	63	672
Kibungo	42	69	78	969
Kibuye	42	48	67	557
Kigali Ngari	58	56	72	902
Kigali City	73	50	52	1010
Ruhengeri	43	47	69	862
Umutara	43	52	75	836
Rwanda (Average)	49	51	67	774

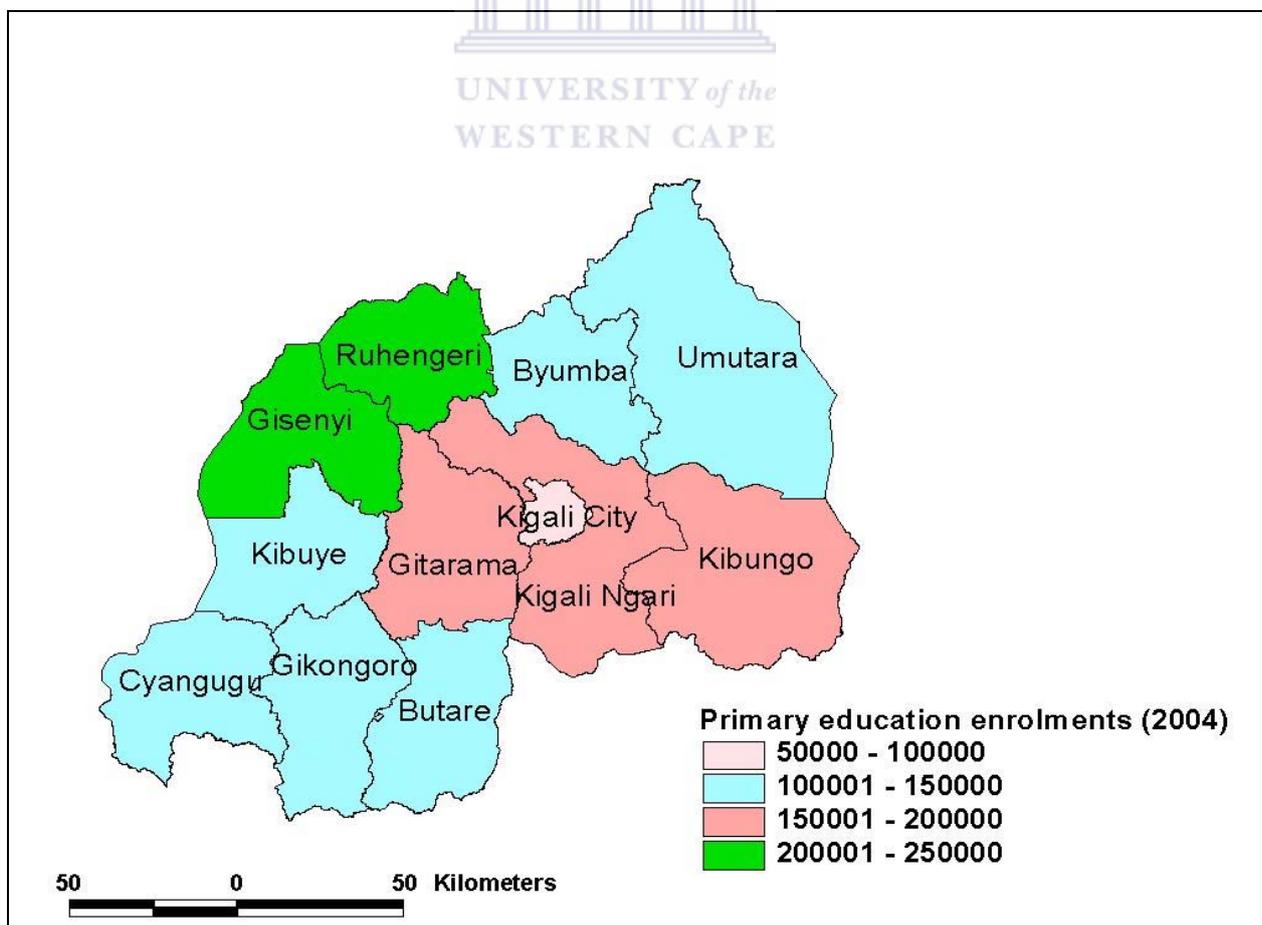
(Source: Rwanda 2003c)

4.2.2 Enrolments compared to other educational variables in primary schools

Enrolment depends on different variables such as public spending, the population density, distance to school, pupil-class and pupil-teacher ratios. Expanding access to education, especially at lower level, is a common objective of governments in developing countries. For any given level of efficiency, increased enrolments require increased resources in order to maintain the quality of education.

The provinces of the North (Gisenyi and Ruhengeri) and the central provinces (Kigali Ngari, Gitarama) and Kibungo in the East have a high number of pupils enrolled ranging from 150,001 to 200,000 and 200,001 to 250,000. They are followed by the provinces of the South (Gikongoro and Butare), Southwest (Cyangugu and Kibuye), Byumba in the North and Umutara in the North-East (Figure 3).

Figure 3: Enrolments in primary schools (2003-2004)



4.2.2.1. Public and household spending on education

The often-encountered inefficiencies and inequities of public expenditure on education have combined with expanding the public spending enrolments at all levels to increase the share of GNP of public spending on education, since unit costs are higher for secondary and tertiary students than for primary pupils (World, Bank, 1995).

In the Rwandan context, Government spending or the unit cost per primary pupil to the State was reported as RWF 6,745 in 2000, which is almost half of what household spend on education (11,010) or 39% of the total cost of primary education. Family bears 90,6% of school costs; 4,5 % are borne by the state and 3,9% by other organizations. The Ministry of Education allocates a fixed amount of RWF 5,000,000 for each of twelve provinces for primary education regardless of the school population or the number of schools in the province (Obura, 2003).

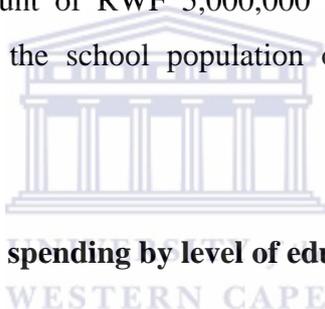


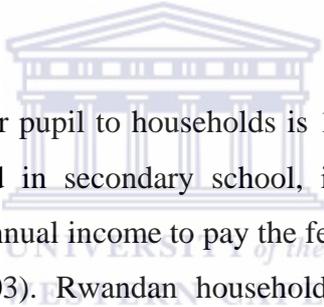
Table 4.3: Rwanda Government spending by level of education

Year	Spending on education as % of GDP	Capital spending as % of Total	Spending by level of Education		
			Primary	Secondary	Higher
1996	3,2	37,4	70,1	15,2	14,7
1997	3,4	40,9	64,6	16,0	19,4
1998	3,1	28,9	49,3	15,7	35,0
1999	4,3	21,9	47,7	18,5	33,8
2000	4,0	19,1	45,2	17,4	37,4
2001	5,5	39,8	45,2	17,6	37,3

(Source: World Bank, 2003).

Total spending on education reached 5,5 % of GDP in 2001, but much of the increase after 1994 genocide reflects rapid increase in capital spending. Total spending in relation to GDP was 65% higher than in 1996. Considering levels of education, the increased spending has mostly benefited higher education, whose shares of expenditures increased from 15% in 1996 to more than 37% by 2000 (Table 4.3).

Expenditures in secondary education also increased modestly from 15 percent in 1996 to 18 percent in 2001. The allocation of budget in primary education is decreasing due to the increase of expenditure allocated to the higher and secondary education. Expenditure in the primary education sector fell from 70 percent in 1996 to 45 percent in 2001. Notwithstanding the high increase since 1996 in total spending on education in relation to GDP, spending on primary education increased slightly and reached only 1.5 percent of GDP by 2001 (World Bank, 2003).



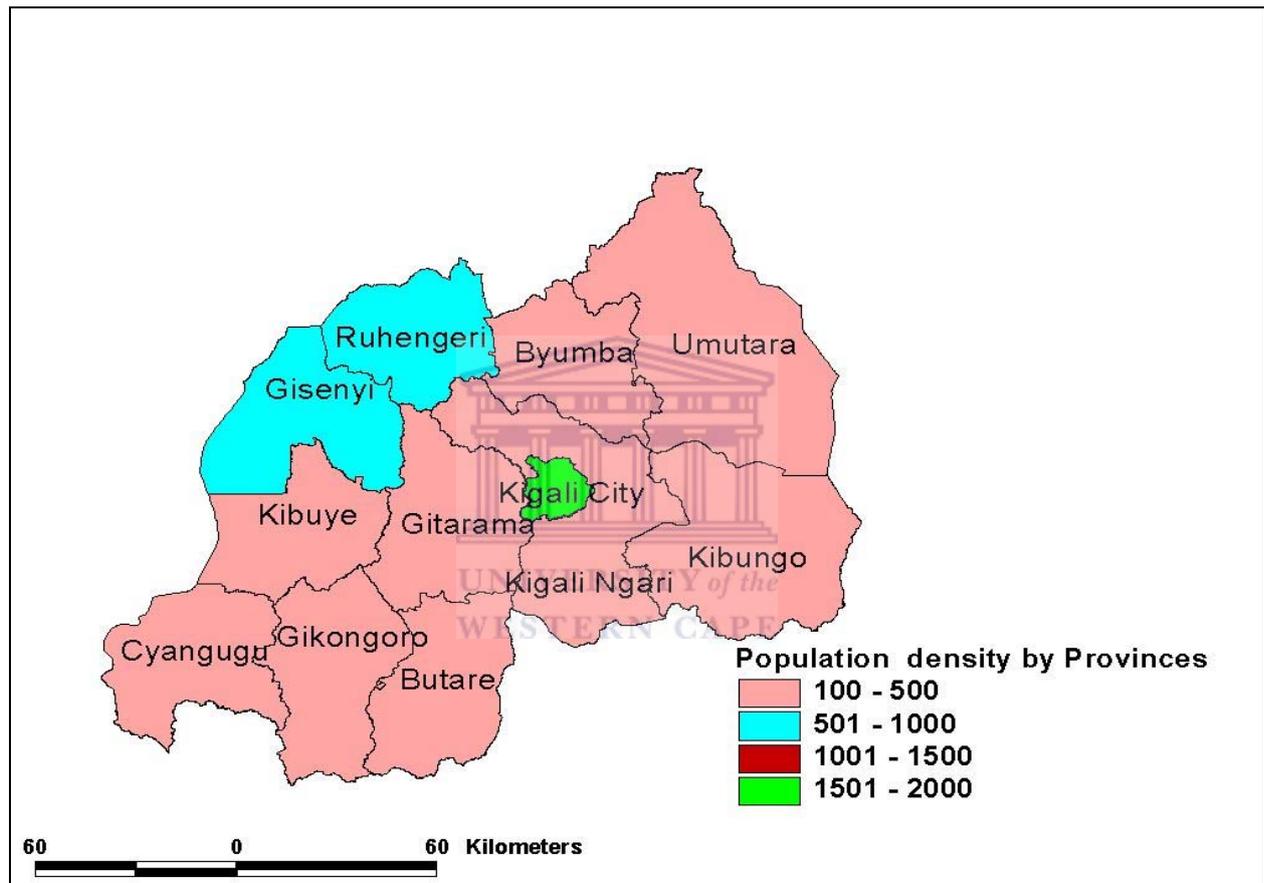
The estimation of school costs per pupil to households is 11,000 RWF (US\$22) per child in primary schools. With one child in secondary school, it would cost over 21,500 RWF (US\$43) or (17%) of the family annual income to pay the fees, exclusive of uniform and other scholastic materials (Obura, 2003). Rwandan households complement the government's investments in education to a large measure. Almost all students, irrespective of level of schooling and without considering the status of the school, pay similar education spending. Families spend from US\$5 per child per year in public primary schools up to US\$318 per year. In 2000, household spending was 1,5 percent of GDP, or about 41 percent as much as public spending on education in 2001. Schools fees are an important item throughout the education system. In private primary schools they are half or more of the total costs to families, while in public primary schools they account for 23 percent of the total. Uniforms appears to be the most expensive item (accounting for about 45%), followed by books and school supplies (24%) (World Bank, 2003).

4.2.2.2 Population density

Population density can also be used as an indicator of the availability of schools and thus high enrolment rates. Population density of a province is measured as the number of people per

kilometre square in that province. Data are obtained from the population census of 2002. One can expect better access to schooling in the densely populated areas. Therefore, residing in urban areas definitely increases the probability of receiving higher schooling compared to rural areas.

Figure 4: Provincial population density in Rwanda in 2002



In Rwanda, the capital city of Kigali with the highest population density of 1942/km² has the lowest number of enrolled pupils ranging from 50,000 to 100,000 pupils (Figure 3). This due to the fact that Kigali City has the lowest number of classes with the double shift systems and the private sector is more involved in education compared to other provinces.

The northern provinces of Ruhengeri and Gisenyi have the highest population density (Figure 4) and highest number of enrolled pupils, ranging from 200,000 to 250,000. They are

followed by the provinces surrounding the capital city of Kigali City (Gitarama and Kigali Ngari) with enrolments ranging from 150,000 to 200,000.

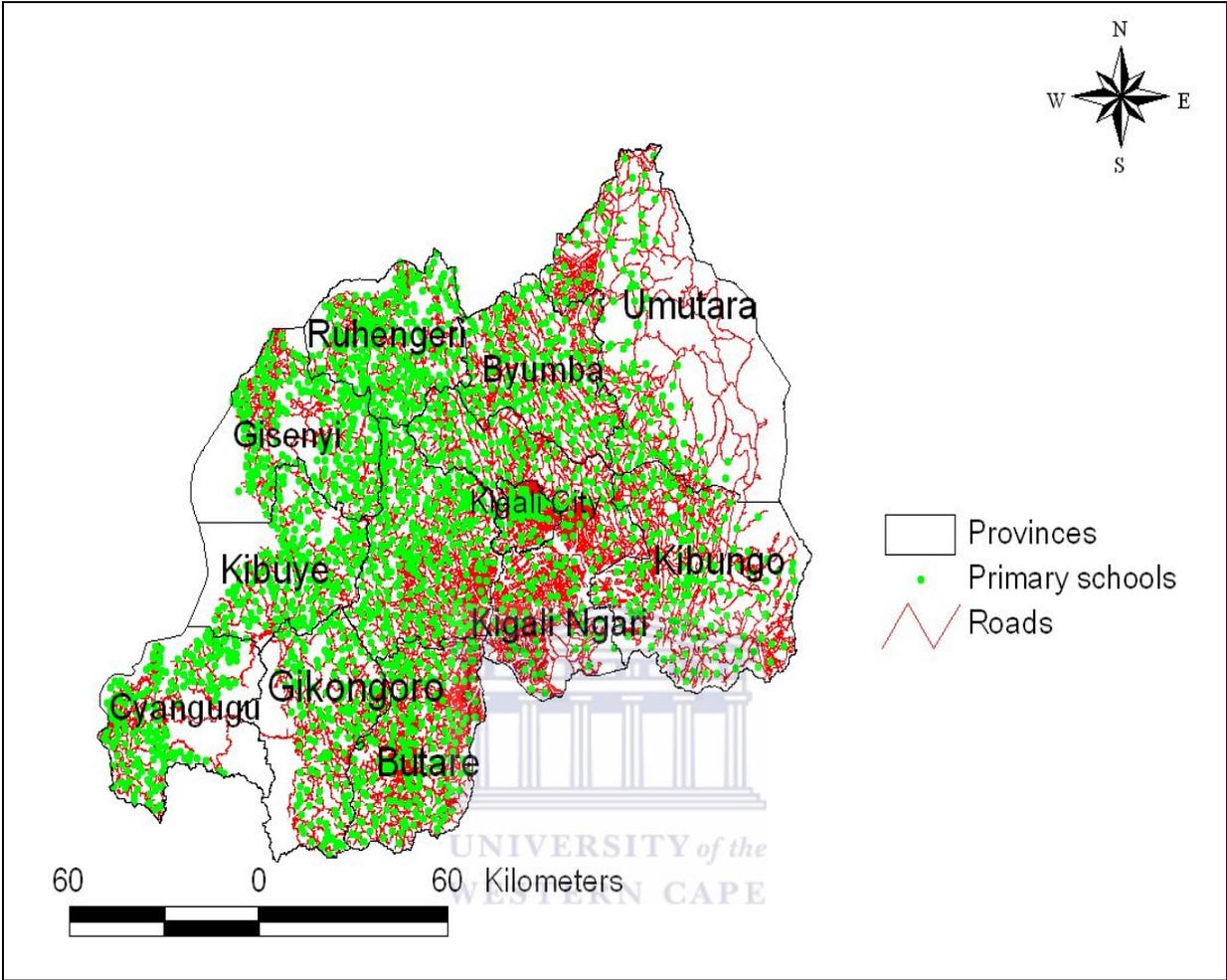
The provinces of the South-West (Kibuye, Cyangugu, Gikongoro and Butare) and East (Umutara) have generally low population density ranging from 100/km² to 500/km² and a low number of enrolled pupils ranging from 100, 000 to 150,000 (Figure 3).

The Eastern province of Umutara is an exception with low population density ranging from 100/km² to 500/km² and low number of enrolled pupils ranging from 100,000 and 150,000. This is due to the fact that the province was recently created to accommodate refugees from the neighbouring countries after the 1994 genocide and is still in the development process. It was part of Akagera national park before 1994. Kibungo was also among the disadvantaged provinces before 1994 after which the policy of providing school infrastructure in each district was implemented by the government in that particular province. This explains the high number of pupils enrolled in Kibungo.

4.2.2.3 Distance to school

Using GIS tools, the average small distances (10km) and long distances (15km) between roads and schools are calculated and used to highlight the impact of distances on internal efficiency (enrolments, repetition and drop out) of the Rwandan education system especially in primary schools. Lack of proximity to schools due to absence of roads is an important cause of wastage, especially for younger school children in rural areas who need a school close to their home. Distance from home to school has an impact of education provision particularly in primary schools. In Rwanda there is connection between the distribution of road density with provinces and variables such as enrolments, repetition and dropout rates. The provinces of the North (Gisenyi, Ruhengeri) and the central provinces (Gitarama, Kigali Ngari) with high road density (Figure 5) where the average distance from the road to school is less than 10km, have the highest number of pupils enrolled and low repetition and dropout rates. On the other hand, the provinces of the East (Umutara and Kibungo) and the provinces of the South (Butare, Gikongoro) and South West (Kibuye and Cyangugu) with low road density where the average distance from the road to the school is greater than 15km have the lowest number of enrolled pupils, high repetition and drop out rates.

Figure 5: Average distances between primary schools and roads



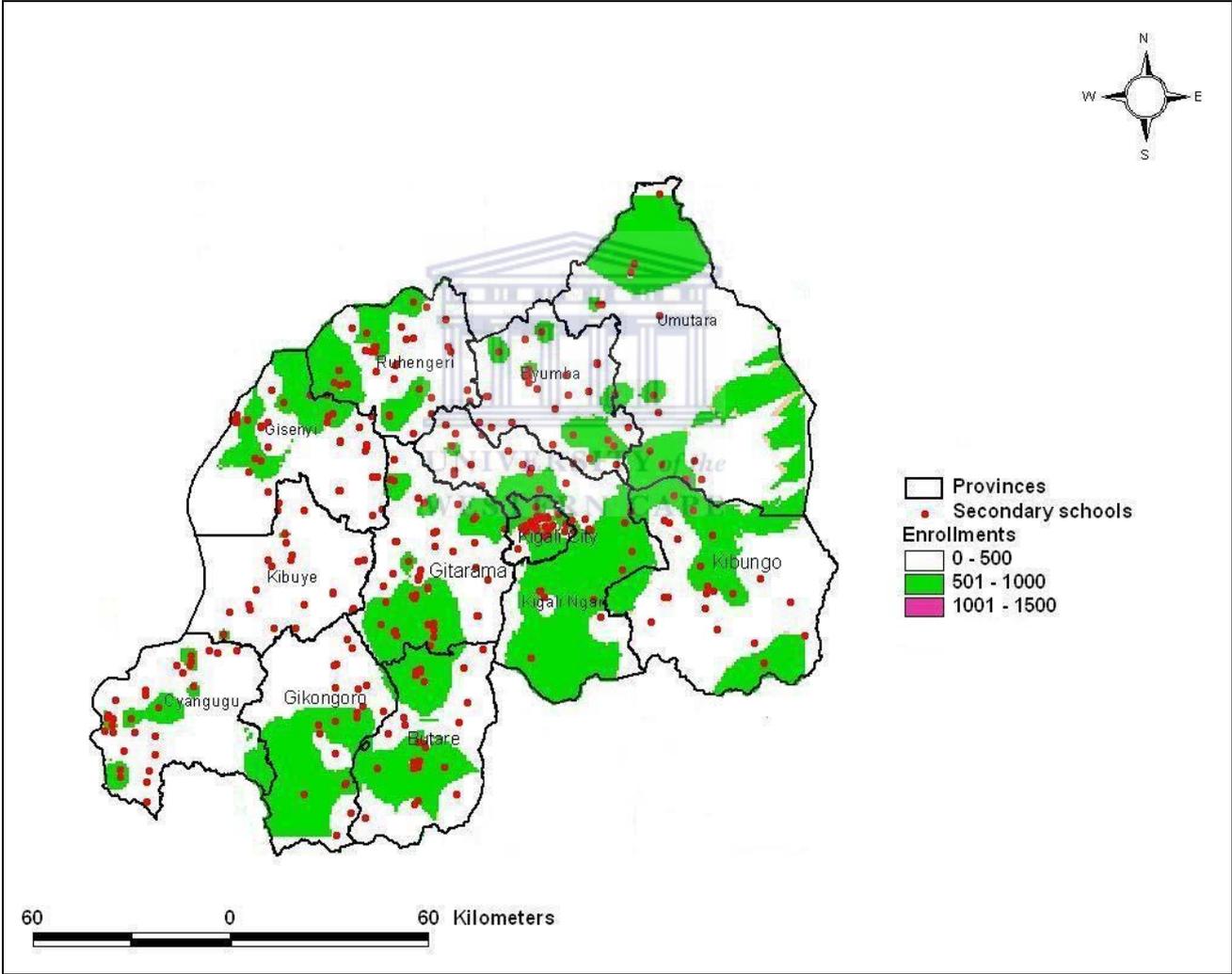
4.2.3 Repetitions

Repeat enrolments in a class are a sign of inefficiency in the education system. In developing countries like Rwanda, the scarce resources spent on repeating students could be better spent on the quality inputs such as books or learning materials (WEF, 2000).

In primary schools (Figure 6), the provinces of the North East and South West have high repetition rates ranging from 21% to 40%. These include Umutara (North East), Butare, Gikongoro (South West). Some districts of Ruhengeri and Gisenyi (North West), Kibungo (East) and Cyangugu (South West) share the repetition rate mentioned above. By contrast, the provinces of the central part of the country including Kigali City and surrounding provinces

of Kigali Ngari and part of Gitarama have repetition rates between 0% and 20%. This range of is evident also in the provinces of the Northwest such as Ruhengeri and Gisenyi and Kibungo in the eastern part of Rwanda. The percentages have been calculated considering the number of schools whose repeater numbers fall in the three following ranges: 0-500, 501-1000, 1001-1500.

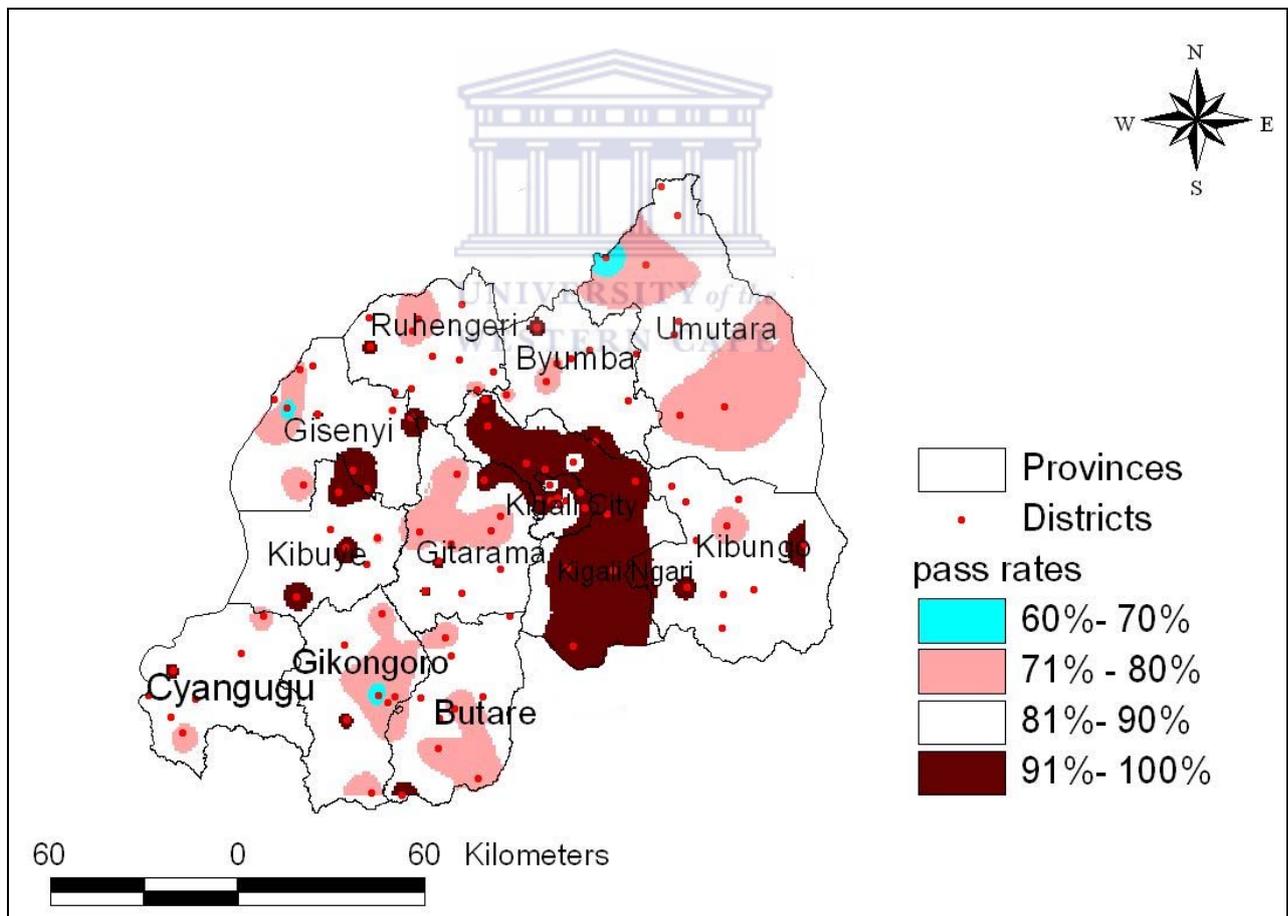
Figure 6: Repetition rates in primary schools (2003-2004)



4.2.4 Pass rates

During the school year 2003-2004, high pass rates ranging from 91% to 100% are found mainly in the provinces of Kigali City and surrounding provinces of Kigali Ngari and Gitarama. The same high rate is also found in Gisenyi, Ruhengeri, Kibungo and Kibuye. The pass rates between 71% and 80% and between 81% and 90% are found in all provinces of Rwanda. The lowest pass rate ranging between 60% and 70% is found mainly in the provinces of Umutara and Gikongoro (Figure 7).

Figure 7: District distribution of pass rate in different provinces for primary schools (2003-2004)



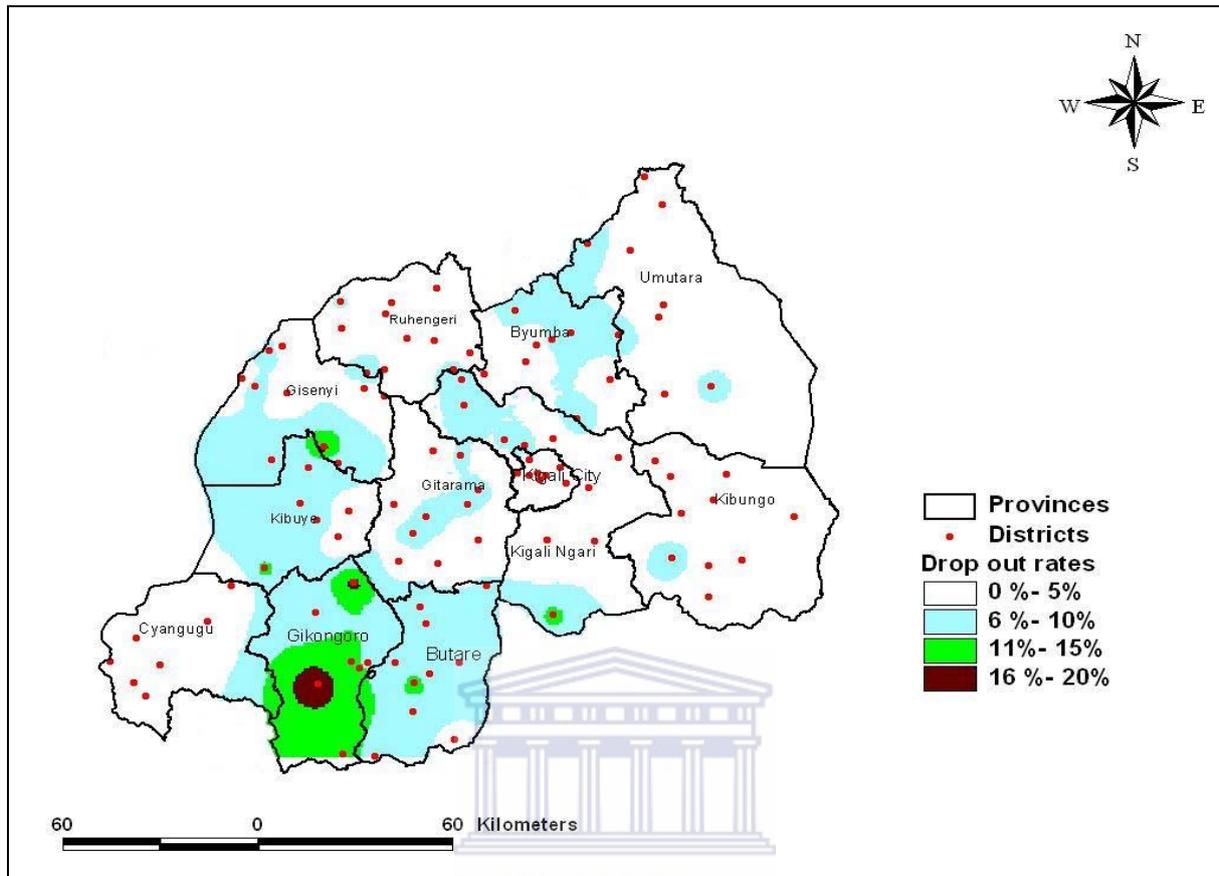
The pass rate depends on the qualifications of teachers and pupil-class. The provinces with high pass rates have also high proportion of qualified teachers. These include mainly the provinces of the North-West such as Ruhengeri (99%), Byumba (99%), and Gisenyi (93%).

The central provinces have similar situation as the provinces of the North-West (Fig.7). These comprise Kigali City (91%), Kigali Ngari (94%) and Gitarama (95%). The provinces of the Southwest and North-East with low pass rates have also low rate of qualified teachers. These include Butare (62%), Kibuye (83%), Kibungo (80%) and Umutara (59%). The same provinces mentioned above with high pass rates, high-qualified teachers have low rate of pupil-class while the provinces with low pass rate and low qualified teachers have high rate of pupil-class (Table 4.2).

4.2.5 Dropouts

In primary schools, the (Fig.8) illustrated that high drop out rate ranging between 16% and 20% are found in the southwest part of the country in Gikongoro province. The provinces of the southwest mainly have also the dropout rate ranging between 11% and 15%. These include Butare, Gikongoro and Kibuye. This range is found also in Byumba (North-East), Gitarama and Kigali Ngari (central). The lowest dropout rate ranging between 0% and 5% is found in the provinces of the Northeast including Ruhengeri and Gisenyi. The provinces of the central including Kigali City, Gitarama and Kigali Ngari have also the range between 0% and 5% and Kibungo in the eastern part of the country. In secondary schools, data on dropout rates were not available.

Figure 8: Dropout rates in primary schools (2003-2004)



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4.3 Secondary education in Rwanda

For secondary education, the number of pupils has strongly increased since 1996 to an annual average of 20%. The transition rate from primary to secondary school is 48,2%. This transition rate is a key indicator to analyse the out put of the educational system. It indicates the efforts made by the Government and different partners involved in education sector to allow pupils to get the basic general training. However, it depends on the receiving capacities established by the public and the private sector.

The analysis of how pupils perform in secondary schools indicates a difference between the common core (the first three years of secondary school) and the second cycle (the last three years). Out of 100 pupils who enter the first year of the common core, only 65 reach the third form. In the second cycle, the ratio is 65,9%. Thus, the surviving rate of the whole cycle of

secondary school is 35,3% (43% in 2003). The selection seems to take place at the two levels, and the transition rate between the two sub-cycles is 100%.

The repetition rates are also different considering the two sub cycles: 10,4% (9,1% in 2003) in the common core against 5,3% (6,4% in 2003) in the last three years. These rates differ when the status of schools is taken into consideration, and they are more significant in private schools.

Comparing the unit cost to the size of the school-establishment reveals that if the personnel expenses are increased to 10%, the number of pupils might also increase to 16%. This has to be combined to the fact that secondary schools are small in size. At the common core for example, half of the public schools receive less than 300 pupils while the scale economies are only effective beyond 400 pupils. Regarding pedagogic management, the relationship between resources and results is once more weak (Rwanda, 2004a).

4.3.1 Number of students

During the school year 2003-2004, the secondary education sector admitted 203,551 pupils whereas there were 179,153 pupils admitted during the school year 2002-2003. There was a development of the secondary education sector since the school year 1998-1999 (105,292 pupils) with an increase of 93, 6% during the school year 2003-2004.

The evolution of the number of pupils by province according to the school status reveals significant differences (Table 4.4). The increase rate is higher in public schools, with Kibuye (86,4%), Ruhengeri (49,8%), Kigali Ngari (49,3%) and Umutara (46%). The situation in Gisenyi and Cyangugu is less favourable with an increase of 7,5% and 14,1%. The private subsidized sector decreases (12,2%), with 46,3% in Kigali City and only 2% in Gisenyi province. For the private sector, the number of pupils remained constant on average (7,4%) but with significant differences. For example, Gikongoro province registered 24,7% while Butare noted 10,7% (Rwanda, 2004e).

The figures (Table 4.4) illustrate the fact that private sector is not yet much involved in the education sector. Combining increased funding for primary education with greater

involvement and reliance on private financing in education must be a priority to ensure that all Rwandan children can complete a full course of primary and secondary schooling of reasonable quality.

Table 4.4: Percentage of pupils by provinces in 2004

Provinces	Public Schools	Private subsidized	Private
Butare	34,0	15,1	10,7
Byumba	32,0	12,5	9,6
Cyangugu	14,1	17,0	23,1
Gikongoro	43,8	7,3	24,7
Gisenyi	7,5	2,0	0,9
Gitarama	24,0	12,3	8,6
Kibungo	15,8	4,5	34,7
Kibuye	86,4	6,0	9,2
Kigali Ngari	49,3	19,8	5,7
Kigali City	42,7	46,3	6,4
Ruhengeri	49,8	23,2	7,3
Umutara	46,0	10,1	13,3
Rwanda	29,7	12,2	7,4

(Source: Rwanda, 2003e)

4.3.2 Comparison between enrolments and pupil-class, pupil-school and pupil-teacher ratios in secondary schools

Evidence from both developed and developing countries does not support the general view that larger classes have negative impact on student achievement. Even if the limits for the upper level of the class size have not been fixed yet, classes of up to 45 pupils are considered as convenient (Colclough, Rose & Tembon, 2003). The normal value for the pupil-teacher

ratio is 40:1. Countries above this level aim to adjust the pupil-teacher ratio to 40:1 and countries below the above level intend to achieve it to improve the quality of education (Bruns, 2003).

The 504 secondary schools of the country have, on average, 403 pupils per school. The highest pupil-school ratio is in Kigali City (489 pupils), followed by Gitarama with 474 pupils, 450 in Kibungo and Ruhengeri with 420 (Table 4.5). The lowest averages are in Kibuye (308) followed by Byumba (328), Cyangugu (366) and Gikongoro (368).

The pupil-class ratio for secondary education is 44 for the whole country. The provinces of Ruhengeri and Kibungo have the highest pupil-class ratio of 48. They are followed by Gikongoro, and Gitarama (46). Kigali City has the lowest pupil-class ratio of 38 followed by Gisenyi (42) and then Kibuye and Byumba with 43 each.

At the national level, the average is 26 pupils per teacher (Table 4.5). Kigali City presents a particular case with an average of 23 pupils-teacher, because of the low number of classes with "double-shifting " and the importance of the private sector, as it is the case for primary education. Umutara and Gitarama follow Kigali City with 24 each.

In secondary schools, the provinces of the Central part of the country including Kigali City, Kigali Ngari, Gitarama, part of Butare, Gikongoro have enrolments ranging between 501 and 1000 (Figure 9). This range is also found in the North-West, in the provinces of Ruhengeri, Gisenyi and Byumba. Ruhengeri has the highest number of enrolled pupils range between 1001 and 1500. In contrast, the provinces of the South-West (Kibuye, Cyangugu, Gikongoro, part of Kibuye and Butare) and East (Umutara and Kibungo) have low enrolments ranging between 0 and 500 (Figure 9). The provinces of the Central, North and East (Kibungo) with high enrolments also have high pupil-school and pupil-teacher rates (Table 4.5) compared to the provinces of the West and South-West. On contrary the provinces with high enrolments have the lowest pupil-class ratio compared to the provinces of the West and South.

Figure 9: Enrolments in secondary schools (2003-2004)

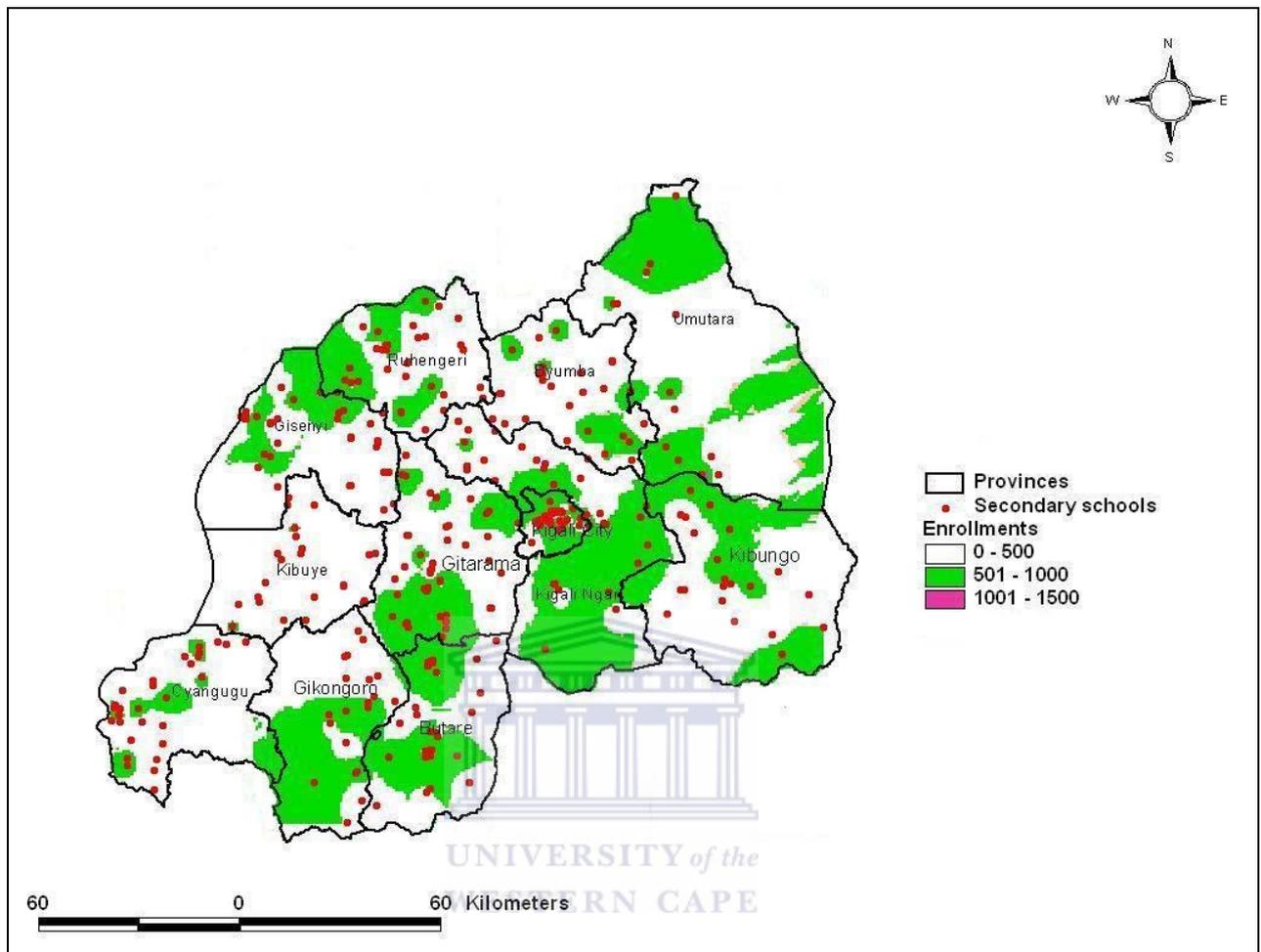


Table 4.5: qualified teachers, pupil-class, pupil-teacher and pupil-school ratios for secondary schools in 2003

Provinces	% of Qualified teachers	Pupil-class	Pupil-teacher	Pupil-school
Butare	63	44	26	400
Byumba	99	43	27	328
Cyangugu	93	45	25	366
Gikongoro	82	46	30	368
Gisenyi	93	42	26	403
Gitarama	95	46	24	474
Kibungo	80	49	28	450
Kibuye	83	43	27	308
Kigali Ngari	94	46	28	365
Kigali City	91	38	24	489
Ruhengeri	99	49	29	420
Umutara	59	45	25	410
Rwanda (Average)	88	44	26	403

Source: Rwanda, 2003c).

4.3.3 Relationship between pass rate and qualified teachers, pupil-class, pupil- School and pupil-teacher

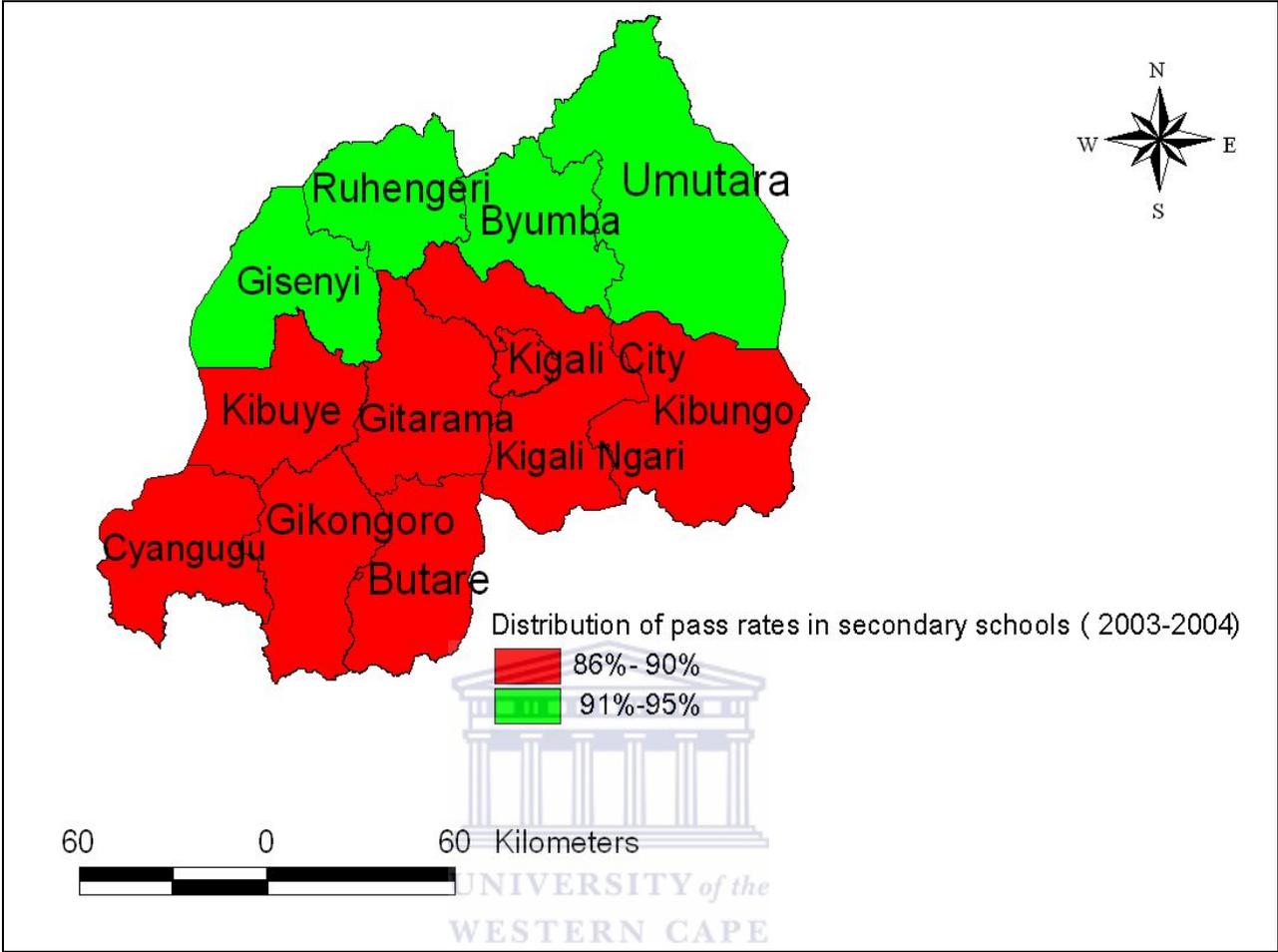
In secondary schools, the provinces of the North West (Ruhengeri, Gisenyi and Byumba), the provinces of the central regions of the country (Kigali City, Kigali Ngari and Gitarama) and Umutara in the East have the high pass rate ranging between 91% and 95% (Fig.10). The provinces of the South and South West follow these provinces (Butare, Gikongoro and Cyangugu) and Kibungo in the eastern part of the country with the pass rates ranging between 86% and 90%.

The provinces with high rate pass rates have necessarily high rates of qualified teachers (Table 4.5). The concerned provinces are the provinces of the North West including Byumba (99%), Ruhengeri (99%), Gisenyi (95%), and the central part of the country which comprises the provinces of Gitarama (94%), Kigali Ngari (94%) and Kigali City (91%). On the contrary the provinces of the South and South West with low pass rates have also low qualified teachers. These include Butare (63%) and Gikongoro (82%).

The figures illustrate how the education system was organized by the two former governments before the 1994 Genocide. The provinces of the central and northwest regions of the country were advantaged in the education sector compared to other regions of the country. Therefore, the pass rates in those regions are higher compared to the Southern, South-Western, and the Eastern regions which were neglected during 32 years (1962-1973) and (1973-1994) of the two governments' reign.

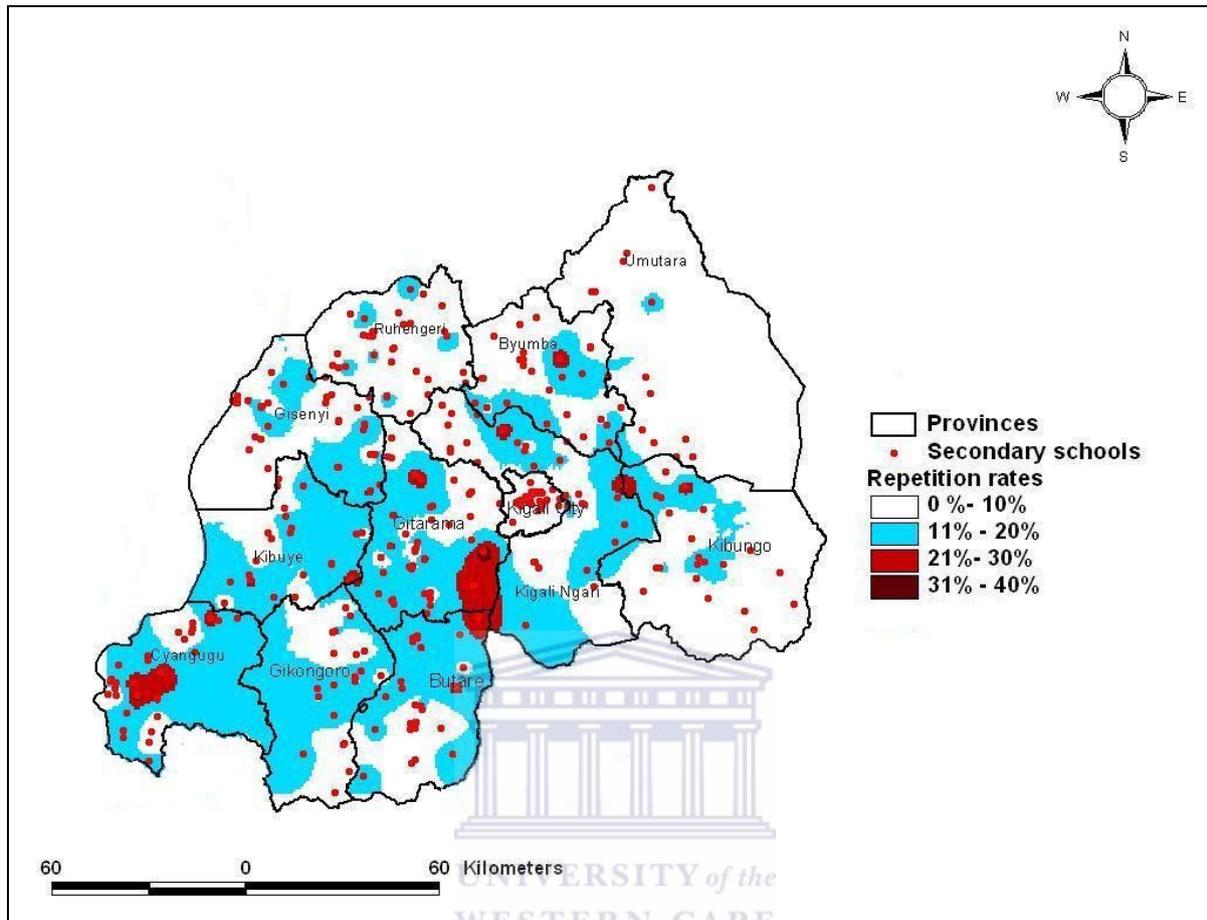


Figure 10: District distribution of pass rates in secondary schools (2003-2004)



In secondary schools the high repetition rate ranging between 21% and 30% is found in some districts of Cyangugu, Kibuye, Butare and Byumba. The repetition rate ranging between 11% and 20% is found mainly in the provinces of the South (Butare), South-West (Cyangugu and part of Kibuye) and in the provinces of central including part of Gitarama and Kigali Ngari. Kigali City, the provinces of the Northwest (Ruhengeri, Gisenyi and part of Byumba), the provinces of the East (Kibungo and Umutara) have the lowest repetition rate ranging between 0% and 10%. In the southern part of the country, Gikongoro has also a low repetition rate ranging between 0% and 10 % (Figure 11).

Figure 11: Repetition rates in secondary schools (2003-2004)



4.4 Reasons for dropouts and repetition in developing countries

The factors behind the phenomenon of drop out are the same as the factors responsible for students never enrolling, though the relative emphasis of various factors varies. Lack of interest is the most important reason for the poor; it is the second most important factor for the rich. Lack of interest on the part of children is more important than lack of interest by parents, while it is the lack of interest of parents that is more responsible for the non-enrolment of the children. Economic factors are the second most important reason for the poor not being able to continue their studies. Surprisingly, inability to cope with studies is a more important factor for the rich than the poor (Tilak, 1999). In Rwanda the southern region especially the province of Gikongoro has the highest rate of dropouts ranging from 11% to 20%. The region is located in rural areas and there are long distances from households to school. In addition the region is

not productive compared to the rest of the country. The lack of interest by parents and the direct costs of education are the major obstacles to education.

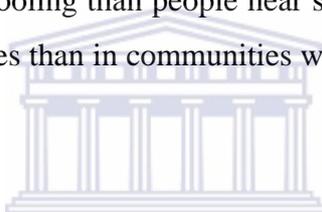
The inability to meet the direct costs of schooling was found to be one of the most important causes of non-enrolment and early dropout from school even though tuition fees were not charged at primary level. Parents are expected to pay for opportunity costs related to registration, and to buy the necessary scholastic material such as books, exercise books, and uniforms for their children. The large number of pupils enrolled in school when costs are generally reduced illustrates the negative impact of direct costs on schooling. For example in the middle of the 1990s, primary enrolments increased by 52% and 200% after the implementation of fee-free primary education policies in Malawi and Uganda respectively (Colclough, Rose & Tembon, 2003).

The number of children in the household is also likely to affect the opportunity costs of schooling, although the direction of this impact is uncertain. On the one hand, the larger the number of children in the household, the more household work there is likely to be (especially for girls) and, therefore, the higher will be the opportunity costs of their time. Direct costs also increase with sending each additional child to school. On the other hand, a particular child from a larger household might have a higher probability of attending school because work is spread over a large number of household members. Therefore, the direct costs of schooling for all children taken together are greater in larger households, but the opportunity costs for at least some of them are likely to be lower than for children with fewer school year siblings (Colclough, Rose & Tembon, 2000).

Another factor that contributes to dropout is child labour. Whilst some school children are able to combine their income-earning with studies, others find it difficult and finally leave school. In Ethiopia for example, school children that enrol at the beginning of the year in September, drop out by November because demands of labour during the harvest period are high. In some cases, children with their peers re-enrol the following year in the same grade but unfortunately do not complete the school year siblings (Colclough, Rose & Tembon, 2003). Educated parents are more likely to have higher education targets for their children and to understand that child labour is actually a burden on society (UNESCO, 1998).

Inadequate supply of schools or of enough school places also contributes to drop out. Generally, schools are concentrated in urban areas, whilst rural areas are under-served. The larger the distance from home to school, the less likely is a child to attend school (Colclough, Rose & Tembon, 2003). In addition, there is usually lack of space in the next grade or distance from the next level school. This is exacerbated by pupils who demand more than one year to complete a grade taking up space, teaching time, textbooks and other resources that could be allocate instead to other pupils (UNESCO, 1998).

Poor school quality also contributes to repetition and dropouts. It is associated with poor academic results and slower progress to higher levels of the education system than is the case for schools with better quality education. Communities surrounded by poor quality schools are likely to benefit less from schooling than people near strong schools. Therefore this leads to high repetition and drop out rates than in communities with high quality school (Colclough, Rose & Tembon, 2003).



Repetition and drop out rates can depend on the socio-economic situation of parents when considering education quality. As an example richer and better educated parents will have also better educated pupils than poor parents as they can afford to pay fees for schools with high quality education. These are characterized by small class sizes, higher teacher salaries and lower distances from home to school. These factors contribute to high quality education for pupils from educated parents (Lee & Barro, 2000).

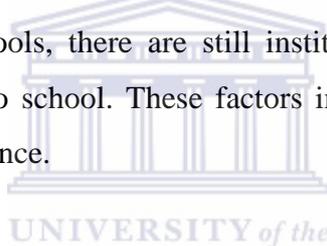
4.5. Reasons for repetition, dropouts and low performance in Rwanda

In Rwanda, the education system is examination oriented. Children are subjected to examinations at every grade and level of education, which determined their retention. At P6, they are subjected to preliminary tests that are used as criteria for selection for the P6 exams. Those not performing according to expectations repeat or drop out of school. The number of places in secondary schools determines the P6 results. Therefore, some school children are pushed out of the education system annually.

Most school children especially in rural areas miss school at least twice a week to look after young siblings, accompany their mother to market, or provide labour for extra income. This corresponds to 8 days a month and 24 days a term. In a year a girl from a poor family will lose 2,5 months (almost a term) of learning (Rwanda, 2003a).

Lack of follow up by parents on the education of their children is another obstacle. They have neither the capacity nor the time to follow up the education of their children. This is common in districts where school age children are working in tea plantations or bricks factories to raise household income. They are also sent by their parents to work in urban centres as house helpers. School infrastructure such as toilets was constructed regardless of gender. The lack of privacy due to inappropriate sanitary facilities discourages regular attendance and increase dropout rates especially for girls.

Even with the Rwandan Government commitment to invest in education sector and the parents to send the girls to schools, there are still institutional problems such as limited essential facilities and distance to school. These factors inhibit girl's education and have a negative impact on their performance.



Indicators from the core welfare indicators in 2003 highlighted the reasons for repetition in addition to the dropout rate. The main reason people are dissatisfied with the schooling system is due to the lack of books, materials and furniture in schools (91%), whilst the main reason children stop going to school is due to the cost. The cost of education to households is a strong impediment to attend school. At the primary education level, the reasons for dropouts were lack of interest (29,8%), illness (13,0%), and domestic tasks (12,7%) (Rwanda, 2003a).

The repetition rate during the school year 2000-2001 was 36,1% with 45% of all first primary pupils being repeaters. Approximately 55% of pupils aged between 7 and 12 who attended primary school had to repeat at least one year. Average number of hours a pupil misses the school was 3,6 hours a week, whilst it is 1,4 hours in secondary school regardless the gender aspect. Among the sample school interviewed an average of 8,6% pupils per school could not be admitted in the first year of secondary education level because of lack of space. Of all students who succeeded and passed the first year, 8% and 6% respectively in public and private subsidized schools during the school year 1998-1999 and 1999-2000 did not go on

because of lack of tuition fees. The decision to repeat the year seems to be related to class characteristics. The possibility to repeat the year is reduced from 4% to 5% if the pupil is in a double-shift class compared to when the pupil is in a simple class (Rwanda, 2003a).

4.6 Relationships between variables

Statistical measures are used to determine the relationships between independent variables such as the total number of teachers, the total number of qualified teachers, the number of schools and classrooms and the dependent variable which is the number of passes in different provinces. The statistical measure used is the simple correlation. It is a way of measuring how strongly associated or related variables are. The purpose of calculating correlations is to find a relationship between variables. There are two directions of correlation: positive and negative.

In a positive correlation, as the value of an independent variable increases the value of the dependent variable increases. Similarly, as the value of an independent variable decreases the value of the dependent variable decreases. In a negative correlation as the value of the independent variable increases, the value of the dependent variable decreases, and vice versa.

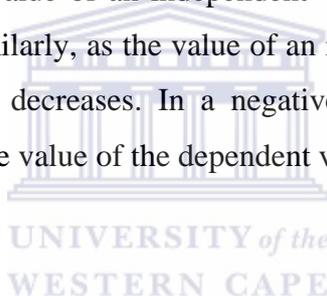


Table 4.6: Correlations for primary education

	Number of teachers	Qualified teachers	Pupil-school	Pupil-teacher	Pupil-class	Number of classrooms
Promotion	0,8	0,5	-0,2	0	-0,5	0,8
Repetition	0,7	0,6	0	0	-0,5	0,6

(Source: Rwanda, 2003d).

In primary education, in line with the numeric variables presented in (Table 4.6), there is a positive correlation between the dependent variables (promotions and repetitions) and the number of teachers, the percentage of qualified teachers and the number of classrooms. However there is no correlation between the dependent variables and the pupil-teacher variable. There is also a negative correlation or no correlation between the dependent variables and the pupil-class, pupil-school ratios. Better qualified teachers, more schools and

classrooms, fewer teacher-pupils, less pupil-class and fewer pupils-schools contribute to a higher number of passes. There is also high repetition rate when there are fewer qualified teachers, less classrooms and schools. Low pupil-class, pupil-teacher and pupil-school ratios are factors that contribute to a low rate of repetition.

Table 4.7: Correlations for secondary education

	Number of teachers	Qualified teachers	Pupil-school	Pupil-teacher	Pupil-class	Number of classrooms
Promotion	0,9	0,8	0,1	-0,03	0,2	0,9
Repetition	-0,4	0,2	-0,1	-0,006	-0,04	-0,5

(Source: Rwanda, 2003d).

Promotions depend on the number of teachers, the level of qualifications, the number of schools and classrooms, and the number of pupils in a school or a class, the number of teachers per pupil (Table 4.6). All these factors facilitate a high promotion rate in a school. It also illustrates the fact that the lack of classrooms and the number of pupil per class are major factors which are increasing the repetition rate.



In secondary education, similar variables are used as in primary education to evaluate the correlation between variables. There is a positive correlation between the depend variable (promotion) and the number of teachers, the percentage of qualified teachers, pupil-school, pupil-class and the number of classrooms. In contrary there is a negative correlation between the same dependent variable with the pupil-teacher variable.

There is a negative correlation between the dependent variable (repetition) and the independent variables such as the number of teachers, pupil-school, pupil-class and the number of classrooms. However there is a positive correlation between the same dependent variable and the percentage of qualified teachers.

The number of passes (promotion) depends on the number of teachers, the level of qualification, the number of pupils per school or class, the number of qualified teachers, the

number of teachers per class and the number of classrooms (Table 4.7). The number of teacher per pupil is a major factor to influence the increase of the promotion rate. The table demonstrates also that the repetition depend mainly on the lever of teacher's qualifications the number of classrooms. Mostly students repeat where a school is lacking teachers and has fewer classrooms. The higher number of students per school also increases the repetition rate.

One of the objectives of the Ministry of Education is to increase access to primary education with an aim of reaching the universal primary education by the end of the year 2010. The situation of primary education in 2003-2004 is characterized by an increase of pupils and the qualifications of teachers. That is mainly due to the recruitment of qualified young graduates from Teacher Training Centers (TTC). The school infrastructure in place is not yet enough as enrolments increases in each level of education. Although there is a budget allocated to the construction of schools, the strategy of the Ministry of Education includes community participation, the community developments centre's involvement and private sector participation.

4.7 Reasons for geographical disparities in education

There is a strong variation in educational variables among different provinces of the country. Urban areas are considered privileged compared to rural areas. In the Rwandan context, while the capital city of Kigali and surrounding provinces (Kigali Ngari, Gitarama) are the best-off in terms of school provision and related educational indicators, in peripheral areas such as Cyangugu, Gikongoro and Kibuye the demand exceed the supply. Therefore, parents can either choose to send their children to costly private schools, as do parents in residential peripheral area or let them remain out of school.

Although the northern part of the country is located in rural areas, it presents better education provision with high enrolments and passes and limited number of children repeating or dropping out. The region has also good educational facilities (schools and classrooms). This is due to the 'quota system' which favoured that region ignoring the south west, the south and the east since 1970s. By the 1970s, entry to public and private subsidized schools and tertiary institutions was determined by 'ethnic and regional' quotas. The results of primary

examinations were never published. Children were admitted or not for secondary education without being aware of their results.

These are the official criteria that were given for the transition from primary to secondary school: 85 percent entrants according to performance (unpublished) and ethnic/regional quotas, 10 percent selected by churches, 5 percent selected by the Ministry of Education. The quota system in education not only ignores differences in performance, but also differences in enrolment ratios per districts. Therefore, the quota system had the effect of reducing the quality of secondary schools entrants (Obura, 2003). In addition, the northern part of the country is more productive than other regions. This has an impact on education because parents can get enough money from their subsistence farming to pay the school fees and other necessary costs.

After the 1994 genocide, the Rwanda Government increased the number of secondary schools by constructing at least one public school in each district. This explains why Kibungo in East Rwanda has currently better educational provision in terms of passes and enrolments, and school infrastructure compared to the province of Umutara. It was recently created to accommodate refugees from the neighbouring countries after the 1994 genocide. It was part of the National Park of Akagera. In secondary schools the province of Butare has also better school facilities, as it was the capital of Rwanda where missionaries created the most prestigious private subsidized schools during the colonial period.

4.8 Conclusion

The primary and secondary education analysis presents two areas of educational provision within the country. The North (Ruhengeri, Gisenyi), the central (Kigali City, Kigali Ngari and Gitarama) and the Eastern (Kibungo) part of the country are characterized by low drop out rates and high enrolment rates whilst the repetition rate is still high. The second area of education provision comprises the South West (Cyangugu, Kibuye) and south region including the provinces of Butare and Gikongoro. This region is characterized by inefficiency in education with high drop out and repetition rates, whilst enrolment rates are low. The same situation to other variables such as the number of teachers, the number of qualified teachers, the pupil-school ratio, the pupil-class ratio, the teacher-pupil ratio and the school infrastructure.

The difference between provinces in terms of school infrastructure and high enrolments rates can be explained by the fact that the leadership of the First and Second Republic of Rwanda concentrate school facilities in their own regions. The political power shift from the central region during the First Republic (1962-1973) to the Northwest during the Second Republic (1973-1994) reinforced the policy of ethnic quotas and regional preferences in the education system. This was carried out by concentrating schools, increasing enrolments and allocating qualified teachers systematically in the leadership's region.

After the 1994 Genocide, under strong commitment from the Rwandan Government, supported by parental and pupil determination to restore education, noteworthy achievements have been made in primary-school enrolment in a comparatively short time. Secondary enrolments have also increased significantly, mainly owing to the rapid expansion of private schools. Central budgetary allocations for education have increased, reducing the burden on communities and parents. Education planners have recognised the need to reduce drop-out and repetition rates. The major continuing challenge is to provide accessible, relevant education for the poorest and particularly for child-headed households.

Analysis of secondary education uses the same variables as the primary education but it is based on the location of each school. Geographic Information Systems (GIS) reveal new aspects to the geography of education provision. It also allows evaluating the internal efficiency of secondary education.

Using available data, the primary education analysis focuses on the spatial distribution of educational indicators at the district level. Secondary education analysis is based on variables of each school. Therefore 348 schools out of 504 schools are used as a sample due to the availability of data on secondary education. This represents 69% of the overall secondary schools in 2004. Variables include enrolments, repetitions, dropouts, passes, teacher qualifications, teacher-pupil-teacher ratio and school infrastructure specifically schools and classrooms. Using GIS, areas of need have been highlighted for effective education provision in Rwanda. Mapping is based on data for the school year 2003-2004 for primary and secondary education.



CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

In Rwanda, the colonial system introduced formal education and missionaries managed schools. Their objective was to evangelise and to train the administration of the colonial power. With independence, administrative structures, including a Ministry of Education, were established and various laws securing the general regulations of the education sector were introduced. The education system was characterized by consecutive adjustments and reforms in 1979 and 1981, which did not achieve the intended goals. Rather than correcting the errors of the colonial era, education remained very discriminatory and was based on the ethnic and regional quota. After the 1994 Genocide, the emergency phase enabled the relaunching of the education sector. As other sectors, the education sector follows the principles set out in vision 2020. In this regard, education is aimed at creating in young people values, which have been neglected before 1994 Genocide.

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The Rwandan education system is internally inefficient. In Primary education, the repetition rate increases and in the first five years of primary school, one out of five pupils repeats the year and almost 15% drop out. Problems regarding the drop out rate, the promotion rate and the availability of classrooms persist. The Gross enrolment rate of 135% is still high and it reflects that many pupils are not enrolled in primary schools at the normal age (less than 7 years and more than 12 years). The secondary school education presents high promotion rates superior to 77 % and dropout rates are generally low in secondary schools.

The primary and secondary education analysis presents two areas of educational provision within the country. The North (Ruhengeri, Gisenyi), the central (Kigali City, Kigali Ngari and Gitarama) and the Eastern (Kibungo) part of the country are characterized by low rate of drop out, high enrolment rate whilst the repetition rate is still high. The second area of education provision comprises the southwest (Cyangugu, Kibuye) and south region including the

provinces of Butare and Gikongoro. This region is characterized by inefficiency in education with high drop out and repetition rates, whilst enrolment rate is low. The situation can be applied for other variables such as the number of teachers, the number of qualified teachers considering gender, pupil-school ratios, pupil-class ratios and the teacher-pupil ratios.

After creatively exploring the relationships between and amongst different patterns of the education sector in Rwanda, GIS is used to better highlight geographically relationships between layers of information, make inferences about the geographical distribution of education provision within entities using district, province constrained and bounded data base; which enables a better mapping, analysis of educational provision and its weaknesses. GIS was also used to geographically calculate the degree to which the presence of one element affects the presence of another. For instance, mapping has highlighted that long distance between home and school affects negatively pupils' enrolment. Low qualifications of teachers at all levels affects also pupils' pass rate.

The study highlights how geographical interventions play a big role in education provision by giving a powerful view of patterns and highlighting educational aspects which change over space. They are also valuable as they allow for integration of different kinds of data from different sources (roads, schools, political and administrative boundaries).

Instead of using only mapping based on artificial aggregation within predetermined boundaries of the countries, Geographical information systems (GIS) techniques as the main methodology have been used to spatially reveal new aspects to the geography of education provision in Rwanda. The comparison between areas enables identification of areas of need for effective and efficient geographical provision of education in Rwanda.

Reducing repetition increases the flow of pupils through the system, therefore creating space for new pupils, and reducing the costs of producing a graduate at any level. In this regard, strategies should aim at improving the material conditions in which learning takes place, via the better provision of books, training of teachers and provision of school facilities. They may also be aimed at improving the teaching-learning process via curriculum reform, improving teaching methods. One response to the problem of high levels of repetition, especially in the lower level grades, has been the implementation of automatic promotion policy. However, such policy will work effectively after improvements to school quality.

5.2 Recommendations

The recommendations comprises two sections, one provides actions to be taken by the Government and the Ministry of Education in particular to improve the education provision in Rwanda. The second section suggests areas of future research.

5.2.1 Government actions

In collaboration with other partners in the education sector such as donors, private sector, religious organizations, communities, the Government should continually invest in regions of the Southwest, South and North (Umutara province) where there are internal inefficiencies and shortages of school infrastructure and qualified teachers.

The Ministry of Education should work towards raising educational quality to improve efficiency without requiring additional public funds. Emphasis should be put on economizing by encouraging the private sector such as religious organizations, communities and individuals to invest in education sector. Given the limited resources, the government needs support of other providers of primary and secondary education. Private education continue to flourish and individuals are willing to pay for private schools in the case they offer high school quality. What becomes an issue of concern in the private education is when the access compromises quality especially in secondary schools. The Government, through the inspectorate board should continue to restrict the entry of private school owners, especially those with uncertain educational backgrounds, as they maximize profits instead of increasing the quality of education.

Another cost-related issue is the variation in the level of fees charged by schools. A lot of work needs to be done especially in secondary schools to ensure that parents pay only for what schools need to function. The Government for all secondary schools should fix standard fees and other necessary costs. There is an urgent need to for the Ministry of Education to develop clear instructions on the types and levels of fees that may be charged by secondary schools.

The decentralization process was put in place in 2001. It aimed to create a sense of local ownership of public programs and allows local governments to respond to local needs and increases the accountability of Government to the people. The decentralization in education sector needs to be performed by involving all stakeholders at the local level. To achieve the intended goals, rules and regulations related to the process need to be monitored by local government according to the decentralization introduced recently. The central Ministry of Education retains the tasks of identifying schools that require additional support and payment of teachers' salaries, and has the power to guide issues relating to educational policies.

School distance is one of the major obstacles to access to education. The Government should introduce feeder schools nearer to places of residence by using the multi-grades teaching system where one teacher can instruct more than one grade. In addition, the Government should continually encourage community involvement in the development of education in order to increase the number of schools in areas of need. Households and communities that invest in education are more likely to take greater interest in their schools than would be the case if the Government was providing education free of charge.

The government should deal with the issue of quality and relevance to increase learning achievements. This includes the evaluation and reviewing of the curricula. Emphasis should be put on the necessary foundation to master three official languages (Kinyarwanda, English and French), as teachers do not speak more than two of these languages. At primary and secondary levels, the Government should put several efforts in the development of Science and technology given its importance in this century.

5.2.2 Future research

In urban areas, there is a private tutoring. This has become a business whose purpose seems to be to create opportunities for teachers to earn additional money especially during holidays. This area of education provision has not yet attracted researchers' interest even though it consumes resources and has implications for the geography of education provision in terms of access and equity.

There is a general view that households and communities who invest in education are more likely to take greater interest in their schools than would be the case if everything was provided free of charge. However, inequalities between households and communities are exacerbated where communities finance education. This is also an area of education provision which is under-researched. The socio-economic factors of households and strategies should be determined by the Government to reduce the gap between the rich and the poor in education provision.

Textbook provision is another area of future research. The Government is responsible for all the cost of textbooks without any support from households and communities. However, research should focus on the inventory of textbooks at any education level to ensure that all pupils have access to learning materials offered by the Government.



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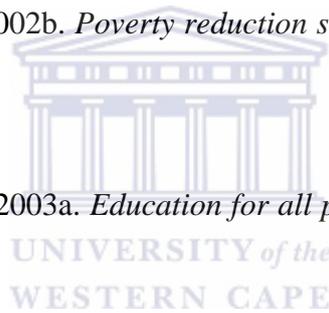
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