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Rwanda, Factor 16: Education

### **Secondary Education in Rwanda: the key to food security**

Twenty years ago, Rwanda was a drastically different country than it is today. One hundred days of genocide left an estimated 800,000 to 1 million people dead. This translates to 6 deaths *every minute* (Terrill). This astronomical number of deaths over such a short period of time left 95,000 children without any parents; overnight they became the providers and caregivers of the family (UNICEF). Directly after the genocide, there was no typical family. Family structures were radically altered by the deaths of so many men, women, and children. Today, most Rwandan families consist of five to six children. This represents a decrease from seven to eight children before the genocide, but large families are still characteristic in Rwanda (E. Powley). Even twenty years later, 36% of families are led by women or orphans (Central). The genocide in Rwanda not only affected family structure, but almost every aspect of daily life.

Health care infrastructure was badly damaged in the genocide. There are approximately 0.84 physicians per every 1,000 residents in Rwanda (Partners). On average there is less than one public hospital per 200,000 people (Partners). An estimated 250,000 to 500,000 women and children were raped during the genocide, and an estimated 67% of those raped contracted HIV (Survivors). HIV and AIDS continue to be an issue in Rwanda's limited and extremely lacking health care system. Today, 200,000 individuals are living with HIV, 27,000 of whom are children. Mental health problems are prevalent in a society not equipped to deal with them. An estimated 97% of survivors lost at least one close relative in the 1994 genocide, and less than 10% of survivors had the chance to bury their relatives (Hagengimana). This has hindered the progression through the stages of grief, resulting in widespread psychological problems including post-traumatic stress disorder and chronic traumatic grief. Recent studies have concluded that about one in every four Rwandans suffers from post-traumatic stress disorder (Stone, Leydon, and Fellows).

One of the most devastating repercussions of the genocide was the effect on Rwanda's agriculture sector. Forty thousand survivors were left with destroyed land and without shelter due to the mass destruction, which in turn decreased the already low productivity of Rwandan farms (Survivors). After the genocide, mass clearing of forests made more land available for the relocation of refugees, but these same people also needed firewood and wood for rebuilding houses that had been destroyed and for road construction. The deforestation added to the 15,000 hectares of land that was destroyed and the 35,000 hectares that was damaged during the genocide itself (Moodley, Gahima, and Munien 115). It is estimated that more than eight out of ten families are engaged in agriculture in Rwanda. Despite the majority of the labor force being engaged in agriculture, the agricultural sector accounts for a mere 30% of the country's GDP (Feed). Most farmers practice subsistence farming, but their crop yields tend to be insufficient to sustain a family. After the genocide, two-thirds of the population of Rwanda was unable to meet even the minimum food energy requirement of 2,100 calories per person per day directly (Gasana). Rwandans farm by hand, using simple, multi-purpose tools, including machetes and hoes (World). Most Rwandans farm on small plots located on steep slopes (Pichon). Rwanda's main exports are tea and coffee, while the most popular crops for local consumption are beans, rice, potatoes, and plantains (Our). Erosion and poor agricultural practices have led to soil exhaustion, which also limit production (Feed). It is estimated that erosion is washing away the equivalent of 8,000 hectares per year, or enough to feed about 40,000 people for a year (Gasana). Most families own only one or two heads of local breeds of livestock, but this doesn't come close to meeting the household's milk or meat needs. With just shy of 40% of the population living on less than ninety cents per day, little is left for better seeds, pesticides, and fertilizers. This leads to a devastating cycle of poverty with crop yields decreasing year after year. Farm size has continued to

decrease in the years after the genocide as a result of this cycle (Central). Today about 50% of those who farm in Rwanda tend just over an acre (Moodley, Gahima, and Munien 4).

Sixty percent of the population still live below the poverty line. About 37% live in extreme poverty (Feed). With the highest population density in Sub-Saharan Africa, Rwanda, is slightly smaller than Maryland, but is home to almost twelve million people. It is estimated that there are 898 people for every square mile of land today (Information). This population crisis disadvantages Rwanda and its productivity in that there is not enough land per family to make subsistence farming sustainable. The population also hinders development because when any improvements are made to the agricultural productivity, Rwanda's high population growth rate completely cancels any ground that was gained at all (Diamond). There is no effective way of improving the agricultural productivity without also addressing the population growth. Despite the widespread devastation, there is hope for the future. Over the last twenty years, Rwanda has made remarkable progress and by many standards worldwide is the country to watch in the journey towards food security.

In addition to Rwanda's population boom, the lack of natural resources and increased soil exhaustion has made it evident that agricultural initiatives cannot be the only focus of efforts to battle food insecurity. Rwanda is trying to reach its full agricultural potential. Improvements are being made in Rwanda to decrease erosion through the plantation of grass and shrubs. Integrating new animal husbandry practices and agroforestry is also increasing farm productivity (Government). The ministry of agriculture in Rwanda is developing marshlands for rice cultivation and has also begun to encourage cooperative farming. In cooperative farming, neighbors join their shares of land for more large scale farming (Government). There have also been developments in aquaculture and fisheries in Rwanda. The Food and Agriculture Organization of the United Nations names aquaculture as "one of the most promising ways" to utilize current supplies to combat protein deficiencies (Schmidt and Vincke).

While improvements in agriculture are needed, the geographical size of Rwanda limits its agricultural competitiveness with other, bigger countries. Moreover, an economy based on subsistence farming alone has no future in Rwanda. A change in economic structure is imperative. Rwanda has had a unique opportunity to transform its economy through information and communication technologies. Its small size and location as the "gateway between East and Central Africa" has made it a perfect location to build the infrastructure needed to make Rwanda a telecommunication hub (Ministry). To achieve this transformation, the Government of Rwanda has created a strategy it calls "Vision 2020." The government claims that Vision 2020 is "pro-poor," giving all Rwandans equal opportunity in this new plan. This plan for Rwanda's economic future focuses in the short term on expanding the tax base, attracting investors, and decreasing debt by instituting tax reforms and competitive exchange rates and only focusing on services that Rwanda can deliver efficiently and competitively (Ministry).

This kind of economic transition requires the nurturing of a generation of young people equipped to fill these new jobs. The key to this transition is the education of the nation as a whole. However, in order to become a catalyst for this economic revolution, Rwanda's education system has many challenges it must overcome.

Before the genocide, education was limited to a privileged few (Murigande). It is estimated that over half of the surviving children gave up on their education as they dealt with the repercussions of the genocide (Survivors). Though the current focus is on primary education, Rwanda has gone further, guaranteeing students at least nine years of education. Rwanda's primary school enrollment today, however, is the highest in Africa (96.5%), as a result of new legislation. Secondary school enrollment, however, is a mere 28% (Central). Secondary education is really the key to building and maintaining this new economy. Yet, there are many obstacles that keep Rwandan children out of secondary school. Most secondary schools are boarding schools. Families must pay for books, uniforms, supplies, mosquito nets for their beds, and other costs of living away from home. One year of secondary education costs around \$350 (S. Powley). Seventy percent of rural Rwandans live on \$1.25 per day, which is only about \$460 per year. To make the

financial burden even greater, these students are no longer able to help on the family farm. The cost of an education is outweighed by the cost of seeds, food, and other necessities. There are also a limited number of secondary schools available. Schools are often far away from villages and travel costs can add yet another reason not to pursue secondary education. Students must take a national exam before continuing on to high school. Out of 28,000 who take this test, fewer than 13,000 are admitted (Murigande).

While mandating education through 9<sup>th</sup> grade for all Rwandan children has been a stepping stone to increasing school enrollment, this focus on numbers has revealed a problem with the quality of education. It is estimated that only about two-thirds of secondary teachers are adequately qualified (Leach). When the Rwandan government made the first nine years of education free of charge, it also mandated a switch to English from French as the main language in schools (Ahmed). English is seen as a medium to connect Rwanda with the rest of the world, especially in business. What started as a seemingly positive and necessary solution at the time has created other issues. The teachers themselves are still learning English; thus, they are unable to provide the quality instruction that is needed. Rwandan children need to be equipped with more than the answers to exam questions; rather they need the skills to find a job in the new economy and sustainably support a family.

Education of all future generations is critical to improving food security. Statistics show that girls are often under-served in developing nations (Central). A key component to combating food insecurity is ensuring that the girls' population is targeted. Educating girls would add another necessary piece to the food security puzzle in Rwanda: population control. When a girl receives seven or more years of education, she marries four or more years later and is estimated to have 2.2 fewer children (Rwanda). Even one year of secondary school can boost a girl's wages up to 25% (Rwanda). Studies show that when Rwandan women earn income, they reinvest 90% into their family, whereas men only invest 35% in the family (Rwanda). This reinvestment then, not only helps the current generation and her family but many generations to come as a cycle of empowerment is created. With three of the eight United Nations Millennium Goals related to women or education, the relationship between girls' education and food security is distinct. The United Nations is focused on achieving universal primary education, promoting gender equality and empowering women, as well as improving maternal health (United).

In 1995, 100% of the government budget came from foreign aid, as a result of the severe deterioration caused by the genocide. By 2011, this was reduced to 40% showing dramatic improvement (Terrill). However, the Rwandan economy is still not equipped to finance the changes necessary for developments in agriculture, education, the empowerment of women, and ultimate advancement towards nationwide food security. Rwanda's current economic limitations reveal a deficit in the resources needed to improve teacher education, build more secondary schools, and increase secondary school enrollment. As Rwanda's economy grows, its dependency on foreign aid will gradually decrease until Rwanda is completely self-dependent and able to finance its secondary education system itself. But until then Rwanda is dependent on partnerships with international aid institutions and non-profit organizations to initiate and sustain progress in the education sector.

Teachers are the most important resource in improving quality education. However, a majority of teachers still use the "chalk and talk" method, expecting students to learn by listening and memorizing. Studies have shown this is only optimally effective for a small percentage of students (Pike-Baky). The U.S Peace Corps is working with teachers in Rwanda, emphasizing strategies that engage students through interaction and application of topics. Over two-thirds of Peace Corps volunteers work in the education sector (Peace). Some specific new approaches that have been implemented, such as utilizing different learning aids, including posters that enhance lessons, and using materials from the environment to create tactile activities that make boring lessons fun. Student interaction is also emphasized, through the introduction of concepts such as learning through dialogue, question-answer activities, and small group tasks. When student interaction has been added to classrooms, students tend to be more attentive and interested in lessons. The Peace Corps has also worked with teachers to change the mentality that there

are only right answer to questions. Volunteers introduce a method of posing questions with multiple possible answers. This has helped students develop critical thinking skill instead of just memorizing answers. The Peace Corps also has volunteers who help teachers refine their English.

In addition to the efforts by the Peace Corps, the British Council has provided English language training for 45,000 teachers. The British Council's Teacher Service Commission works with Rwandan education officers to train mentors who help other teachers with their English when they go back to their schools (Simpson and Muvuyuni). The British Council and United Kingdom's Department for International Development have begun testing teacher's levels of English to better understand the needs and how they can assist in fulfilling these needs (Clover).

In some cases, the public function of the government— providing a free secondary education for all—is being fulfilled by private organizations such as *Every Child is My Child*, an organization devoted to improving secondary school enrollment rates in Rwanda and Burundi. *Every Child* tries to achieve this goal through partnerships and scholarships for tuition and associated fees. *Every Child* partners with rural community primary schools. Every student that passes the national exam from partnered schools receives a scholarship to continue on to secondary school. This scholarship includes tuition, school supplies, room and board, and uniforms. This model has been particularly effective because it provides a three-way buy-in between the student, parents, and *Every Child*. *Every Child* makes education more affordable, students in turn commit to studying, and parents commit to paying for transportation costs and giving students time to study. With the parents having to invest in the program, students are more likely to be encouraged to stay in school. It has also been evident that primary school attendance and grades have improved as students are motivated to pass their exams (E. Powley). Since *Every Child is My Child* has partnered with Nyacyonga and Ngenda schools in Rwanda, the number of students passing sixth grade has doubled and tripled respectively (E. Powley). Rwandan students take an exam after ninth grade and 100% of *Every Child* scholars pass their national exams. *Every Child* has never had a student not pass their exams. This testifies to the effectiveness this model has in encouraging increased attendance of secondary school and high performance. Another noteworthy quality of *Every Child is My Child* is that it educates whole communities as opposed to a select few scholarship recipients from different schools. With a rise in the education level of village, potentially there will be a decrease in the amount of young people who leave the village never to return. *Every Child is My Child* faces challenges in being optimally effective in transforming secondary school rates in Rwanda. *Every Child* was founded in 2007, and so far has only been able to partner with two schools in Rwanda due to dependence on private donor contributions. *Every Child* has yet to partner with any big philanthropic organizations. Its first class of seniors will graduate in 2014, which should provide data on the effectiveness of the model and possibilities for scale-up.

Secondary schools are often a great distance from villages, which hinders enrollment; thus, construction of secondary schools in rural communities is vital to the success of all Rwandan children, especially those that cannot afford travel costs to secondary schools and may not receive scholarships from organizations like *Every Child is My Child*. *Raise the Roof Inc.* partners with sponsors to fund the development of rural schools in remote areas in countries like Rwanda (Raise). *Raise the Roof* believes that investment in village schools creates a beacon of hope for the entire village as well as creating opportunities for bright futures for children in the village. The schools *Raise the Roof* builds have the capacity of over 1,000 boys and girls. This organization utilizes community involvement to maximize effectiveness. *Raise the Roof* also pays special attention to increasing access to education for girls.

HIV and AIDS has been named the most formidable challenge to development in the new millennium for developing countries (Gupta, Anjum, and Zaidi 120). By incorporating public health and sex education into secondary schooling, students are equipped with knowledge of prevention of sexually-transmitted diseases and other preventable diseases. Studies show that educated women are more likely to delay sexual activity and take measures to protect themselves (UNAIDS, UNFPA, and UNIFEM). In secondary education, there is also an emphasis on the concept of "self-empowerment." This can translate to an

increased attention among students to prevention and safe behaviors, ultimately decreasing birth rates and population growth (Women). Among young men, education has been found to accelerate behavior changes making them more receptive to disease preventative measures (UNAIDS, UNFPA, and UNIFEM). A lack of knowledge about different diseases and treatments can result in a patient not recognizing symptoms or understanding the importance of following a doctor's orders. Improved literacy and awareness is crucial for early detection, optimal treatment, and prevention (Women).

The economic transition to a food secure Rwanda must include all sectors of the economy. Nevertheless, Rwanda's agricultural sector employs 80% of the population, and farmers produce 90% of the food the country consumes (Randall). Yet, these farmers are not meeting Rwandans' daily nutritional needs (Gasana). Education has the ability to accomplish this economic transition by improving all sectors of the Rwandan economy.

Education directly affects farm productivity by improving the quality of labor, increasing the ability to adjust to any unexpected problems, and increasing knowledge and the ability to adopt innovations (Weir). Education is critical to a farmer in a rapidly changing technological and economic environment. Twelve studies of rural populations in developing countries in Africa and Latin America reveal that an additional four years of school increases output by 7.6% among traditional farming systems and 11.4% among modern farming systems. This almost 8% could mean the difference in food insecurity and security for some families (Weir).

Through the implications of programs like *Every Child is My Child* and *Raise the Roof Inc.*, the number of years students are in school can be extended. While not an overnight solution to eradicating food insecurity, this extension has the potential of impacting agriculture in Rwanda in two specific ways. In 1982, Rwanda established the National Agricultural Extension Strategy, or NAES. The NAES focuses on building partnerships between and with farmers and pairing extension workers with villages. This extension strategy was readopted in 2009. The NAES aims to promote farmers' organizations, strengthen the technical capacities of producers, improve service delivery, and promote a system of research adapted to the specific needs of farmers (Randall). A lack of qualified staff members limits extension programs' effectiveness. Students could receive advanced training to become agricultural extension agents after completing high school. By improving secondary education rates, literacy rates will in turn increase as well. Improved literacy rates, indirectly, would impact agriculture. An informed and literate population is more likely to listen to new ideas, assimilate new strategies, and implement new farming methods (Randall).

The benefits of education can infiltrate almost every poverty-related factor. Mandated quality education improves the overall health of the country, agricultural yields, and ultimately the economy of the country; the next generation is equipped with skills for jobs and knowledge necessary to make the changes today that are essential for food security tomorrow. The effect education could have on the most formidable challenges facing Rwanda today is one of great promise. By providing quality education for Rwandan children, Rwanda can become a self-sustaining, food secure country.

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