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Mary Katherine Deen
Washington State University

Lauren Hrnčířik Scanga
Washington State University

Kevin Wright
Washington State University

See next page for additional authors

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Keywords

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Mary Katherine Deen, Lauren Hrcirik Scanga, Kevin Wright, and Charles Berahino

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Mary Katherine Deen
Lauren Hrnccirik Scanga
Kevin Wright
Washington State University

Charles Berahino
Trauma Healing and Reconciliation Services
Bujumbura, Burundi

Abstract

The quality of education and training children receive today will significantly impact their development into adulthood and their impact on society (Kibwiki & Semana, 2001). Burundi, Africa is the second poorest country in the world and has a turbulent history laced with economic, political, and cultural challenges (Headrick, 2016). With more than half the population under the age of 18, educating the youth of Burundi is paramount to bringing about change in the country. The purpose of this qualitative study was to understand the needs of primary school teachers, administrators, afterschool program educators and their students; and to determine if a 4-H Youth Development school gardening program was a viable methodology to meet their needs. The desire of local partners to empower Burundian youth and the fact that empowerment is a fundamental principle of the 4-H methodology led to the selection of Empowerment Theory as the conceptual framework for this study. A needs assessment using focus groups was conducted with 34 primary school teachers, administrators, and afterschool staff in two rural communities in Burundi. Findings indicated that poverty and hunger were the primary barriers to quality education and climbing out of poverty. School educators also reported a need for professional development to better provide quality education for youth. Based on the outcomes of the focus groups, the researchers recommend that the 4-H Youth Development school gardening program is implemented in rural Burundi using Empowerment Theory as a framework to address the needs of educators and youth.

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Introduction

It is no secret that today's youth are tomorrow's leaders and change agents (Zimmerman, Stewart, Morrel-Samuels, Franzen, & Reischl, 2011). The quality of education and training children receive today will significantly impact their development into adulthood and their impact on society (Kibwiki, & Semana, 2001). In many developing countries, children face a multitude of complex barriers like war, trauma, and poverty, which further challenge their ability to attain the education and skills needed for a prosperous future. Burundi, Africa is the second poorest country in the world (Headrick, 2016), and half of the nation's population are children 18 years and younger. Similar to other developing countries, Burundi has a turbulent history laced with many economic, political, and cultural challenges. From 1897-1962, Burundi was a colony under German and then Belgian rule (Bamber, 2001). Since Burundi gained its independence from Belgium in 1962, the nation has been in a perpetual cycle of conflict, which erupted in 1993 as a civil war between the Hutu and Tutsi ethnic groups. The civil war lasted 12 years, killed 250,000-300,000 people (Amnesty International, 2004), and displaced 1.3 million (Haken, Imbriano, Ben Nun, & Tobias, 2011).

Today Burundi is still recovering from immeasurable destruction, with 81% of the population living below the international poverty line of U.S. \$1.25 per day (UNICEF, 2013) and 58% of people suffering from chronic malnutrition (World Food Programme, n.d.). There is a new generation of rising young leaders and Burundi is at a turning point. The history of violence can continue to repeat itself or today's youth can pave the way for a brighter future. Educating the youth of Burundi is paramount to bringing about

change. This qualitative study was conducted to determine the needs of primary school aged students and their educators in rural Burundi, and to determine if a 4-H Youth Development (4-H) school gardening program would be viable within Burundian culture.

Power of Education

Education has the power to make people more employable and thus increases the likelihood of economic growth (Haken, Imbriano, Ben Nun, & Tobias, 2011). Since the end of the civil war, Burundi has made significant strides in youth development by initiating a public education system. "According to the UN Children's Fund (UNICEF), the proportion of children in school increased from 59% in 2005 to 96% in 2011" (Sambira, 2012, p. 1). Although more students now have access to education in Burundi, schools still struggle with keeping youth enrolled. Some schools lose half the students before they even finish primary school (grades 1 - 6). Reasons for poor retention include inadequate sanitation facilities for girls, early marriage, pregnancy, grade repetition, and job opportunities (Sambira, 2012).

Rural communities tend to face additional challenges in ensuring children have access to quality and relevant education (Bennell, 2007). In Burundi, 88% of the population lives in rural areas, and the livelihood of the majority of Burundians is dependent upon agriculture, specifically subsistence farming of coffee, cotton, tea, corn, sorghum, sweet potatoes, bananas, and cassava (Central Intelligence Agency, 2015). Youth in rural communities are often more poorly educated than urban youth (Bennell, 2007) and "oftentimes the education rural youth receive does not prepare them with the livelihood skills necessary for their rural lifestyle" (Kibwika, & Semana, 2001, p. 1).

Local Partnerships

Motivated by the need to assist Burundians to recover emotionally from the civil war, a group of Burundian mental health professionals created a non-governmental organization (NGO), Trauma Healing and Reconciliation Services, in 2000 to provide resources for trauma healing and reconciliation in Burundi and the African Great Lakes Region. One of the organization's original delivery modes was offering afterschool programs in nine rural primary schools. The NGO further expanded its scope and purpose to include economic development through agricultural endeavors and youth empowerment. Upon learning about 4-H's history in agriculture and youth empowerment, the NGO partners became interested in the 4-H program, specifically in integrating 4-H into the school system and existing afterschool programs.

4-H Youth Development Methodology

For the past 100 years in the United States, the 4-H program has opened doors for young people to learn the skills needed to be a proactive force in their communities. The largest youth development program in the U.S., 4-H began as a solution to help address agricultural challenges in rural America (National 4-H Council, n.d.-a). Research shows that 4-H youth do better in school, make healthier lifestyle choices and are more engaged in their communities (Lerner, 2013). Over the years, the success of 4-H has inspired programs to develop around the world. In Africa, 4-H is present in 15 countries including Burundi's neighbors Tanzania, Kenya, and Uganda, and is "helping prepare Africa's young people to meet urgent regional needs, including hunger, sustainable livelihoods and food security" (National 4-H Council, n.d.-b, p.1). For example, the United States Department of Agriculture/United States Agency for International Development

(USDA/USAID) piloted the *Cultivating Learning with School Gardens* (CLSG; Crave et al., 2009) program in the Democratic Republic of Congo, Rwanda, and Mozambique (2005-2013). The program provides training for teachers on how to use school gardens as a hands-on method for students to apply academic concepts (USDA & USAID, 2013).

Youth empowerment is a core principle of the 4-H model, providing youth the opportunities and resources to grow and learn in partnership with caring adults (Weybright et al., 2016; Borden, Perkins & Hawkey, 2014). The desire of local partners to empower Burundian youth and the fact that empowerment is a fundamental principle of the 4-H methodology led to the selection of Empowerment Theory as the conceptual framework for this study.

Conceptual Framework

Many disciplines including community development, psychology, education, and economics use the term "empowerment" (Page & Czuba, 1999). It has been central in developing positive youth development curriculum (Zimmerman, Stewart, Morrel-Samuels, Franzen, & Reischl, 2011), planning and implementing programs in international development organizations (Hennink, Kiiti, Pillinger, & Jayakaran, 2012), and as an evaluation methodology (Fedderman, 2015). Although there does not seem to be a universal definition for "empowerment" (Hennink et al., 2012), researchers and practitioners agree on the components necessary to describe the construct. The components are multi-dimensional (have many levels and domains), social (are done with others), and include both processes and outcomes, resulting in people having more control over their lives (Hennink et al., 2012; Page & Czuba, 1999; Peterson, Lowe, Aquilino, & Schneider, 2005; Zimmerman,

2000). Perkins and Zimmerman (1995) suggest that using empowerment “compels us to think in terms of wellness versus illness, competence versus deficits, and strength versus weaknesses” (p. 569).

An empowerment philosophy helps to shape the role of the professional when working with communities and emphasizes the importance of cultural context. Professionals adopting an empowerment philosophy become partners with the participants, bringing knowledge and other resources but not forcing them on the community, trusting the local community members to guide the use of resources in the most culturally appropriate way. Through this lens, professionals are collaborators, not experts, at all levels of the program: needs assessments, program planning,

implementation, and evaluation. Success is dependent on a professionals understanding of the cultural context of the community, empowering all participants to have greater control of their lives (Perkins & Zimmerman, 1995; Peterson, Lowe, Aquilino, & Schneider, 2005; Zimmerman, 2000).

As shown in Table 1, Zimmerman (2000) offers a framework for applying Empowerment Theory that describes the characteristics of empowering processes and empowered outcomes across three different levels of analysis (individual, organizational and community). The processes listed (activities, actions, or structures) enable empowerment to occur at each level and result in empowered outcomes.

Table 1

A Comparison of Empowering Processes and Empowered Outcomes Across Levels of Analysis

Levels of analysis	Process (“empowering”)	Outcome (“empowered”)
Individual	Learning Decision-making skills Managing resources Working with others	Sense of control Critical awareness Participatory behaviors
Organizational	Opportunities to participate in decision-making Shared responsibilities Shared leadership	Effectively compete for resources Networking with other organizations Policy influence
Community	Access to resources Open government structure Tolerance for diversity	Organization coalitions Pluralistic leadership Residents’ participatory skills

Note. From *The Handbook of Community Psychology*, p. 47, by M. Zimmerman, 2000, New York: Kluwer Academic/Plenum.

Zimmerman articulates that there is a distinction between empowering and

empowered, and suggests that a “process is empowering if it helps people develop skills

so they can become independent problem-solvers and decision makers” (2000, p. 46). Thus, empowered outcomes are a result of empowering processes at the individual, organizational and community level. All levels of analysis are connected and are “both a cause and consequences of each other” (Zimmerman, 2000, p. 46). It is important to note that empowerment processes and outcomes look different across various situations. The activities or actions needed in one context to produce empowered communities may not be the same actions needed in another community, once again highlighting the importance for the professional to have adequate cultural knowledge for each situation and to work in close collaboration with local experts. Hennink et al. (2011) expanded upon Zimmerman’s (2000) three levels of analysis (individual, organizational and community), and includes domains (content areas where empowerment occurs) and mechanisms needed for empowerment to occur at each level within each domain.

Despite the cultural and historical differences between Burundi and the United States, the researchers and Burundian partners hypothesized that a 4-H school gardening program might be applicable within the rural Burundian culture to address agricultural challenges while teaching youth life skills; thus providing opportunities for empowerment at the individual, organizational, and community levels. A needs assessment guided by Empowerment Theory was designed.

Purpose and Objectives

The purpose of this qualitative study was to determine the needs of public primary school teachers, their students, school administrators, and NGO afterschool program educators, and to determine if a U.S. 4-H school gardening program was a viable methodology in the rural area of the

Gitega Province in Burundi. Specific objectives were to gain information on: How do public school teachers, school administrators, and NGO educators in rural Burundi:

1. Describe the needs of primary students and challenges of teaching/working with this population?
2. View or perceive the cultural appropriateness and feasibility of implementing a 4-H school gardening program in public schools?

Methods

Partnering with a local Burundian NGO, researchers developed a qualitative study design using focus groups to address this study’s research questions. To ensure trustworthiness various strategies were employed throughout the study. Credibility or internal validity was established by using well-established research methods, developing familiarity with the local culture, using strategies to encourage participant honesty, conducting frequent debriefing sessions with organizational leadership, and triangulating the data analysis. Reliability techniques included peer examination and investigator triangulation (Amankwaa, 2016; Merriam & Tisdell, 2016; Shenton, 2004). Thick description was utilized in reporting about the participants, data collection, and the findings to ensure external validity (i.e. transferability; Merriam & Tisdell, 2016).

The study design, guided by the principles of Empowerment Theory and Evaluation, was created to assure that the community members as well as the NGO staff, were included in the decision-making processes. The researchers relied on local community knowledge to foster capacity building, organizational learning,

community ownership, and accountability (Fetterman, 2015). Involvement of the community members in all phases of the research: planning, implementation, and data analysis inform the research team of cultural values, practices, and sensitivities (Halcomb, Gholizadeh, DiGiacomo, Phillips, & Davidson, 2007). The lead researcher spent time in Burundi and interacted with the NGO staff for two years before this study, which assured the researchers' familiarity with the culture, a vital credibility method (Shenton, 2004).

Focus groups engage a small, similar group of people in a group interview to acquire a better understanding of a problem (McMillan & Schumacher, 2010). The study used focus group design for a variety of reasons. First, the Burundian culture is an oral culture where ideas, opinions, concepts, and traditions are shared verbally (Embassy of the Republic of Burundi to Germany, n.d.). Using focus groups demonstrated respect for the local culture by using effective engagement strategies such as “listening as much as we talk” (King & Boehlje, 2013).

Secondly, due to Burundi's long history of colonialism, dominance by and dependence on outside groups (Haken, Imbriano, Nun, & Tobias, 2011), focus groups allowed the participants an opportunity to be actively involved in defining the problem, determining the needs, and shaping their future. Thirdly, focus groups help to create “a social environment in which group members are stimulated by one another's perceptions and ideas” (McMillan & Schumacher, 2010, p. 363), thus enhancing the value and breadth of the data. For these reasons focus groups have been shown to be a successful methodology to employ in intercultural settings and in supporting credibility (Halcomb, Gholizadeh, DiGiacomo, Phillips, & Davidson, 2007; Jones & Shen, 2005;

Malek, 2002; Mwaijande, Miller, Wailes, & Petersen, 2009; Shenton, 2004).

Participants

The participants were chosen from nine primary schools within one rural region of Burundi where the NGO was implementing programs. Participants included primary school teachers, school administrators, NGO administrators and afterschool staff. At the time of the study, primary schools in Burundi included students in grades 1 – 6. Sites were selected, and participants were recruited using the Reputational Case method of site and participant selection. This type of selection uses “the recommendation of knowledgeable experts for the best examples” of a topic or situation (McMillan & Schumacher, 2011 p. 326). Since the NGO had worked with the nine schools for many years providing afterschool programs and counseling, there was a trusted relationship between the NGO staff and the school personnel.

The NGO asked the school administrator from each of the nine primary schools to participate and to identify two teachers from their school to also participate in the focus groups. The afterschool program staff of all nine schools also participated. The focus groups were conducted in three locations: 1) in Bujumbura four members of the NGO administrative staff participated (two female and two male), 2) in Gitega five primary school teachers, five school administrators, and eight NGO afterschool staff participated (eleven female and seven male), and 3) in Bugendana seven teachers, three school administrators, and three NGO afterschool staff participated (six female and seven male). The total number of participants was 34 with the average age being 35 years of age.

At the time of this study, the teachers had completed the educational requirement

for rural primary school teachers (e.g. completion of secondary (high) school with an emphasis in education during the last two years). The school administrators completed the same level of education as the teachers and were nominated by district administration to serve in the position due to their high performance. The NGO staff had four-year degrees from a Burundian university or graduate degrees from Europe or the U.S. All participants worked with primary aged youth and considered themselves educators. This commonality allowed the educators to discuss the topic more deeply and provide rich feedback, an essential component of focus group membership (McMillan & Schumacher, 2011).

Data Collection

Focus groups were conducted in three locations: the NGO's primary office in Bujumbura, the capital of Burundi; the NGO education center in Gitega, 62 miles (100 kilometers) north of Bujumbura; and at the NGO branch office in Bugendana, a small rural community 17 miles (27 kilometers) north of Gitega. The locations were selected because they were centrally located, easily accessible, and familiar to all participants, while also available at no cost. Since the participants were not familiar with 4-H, the researchers provided an overview of the U.S. 4-H program model before each focus group. The overview included the history of 4-H in the U.S., the organization's mission, vision, the 4-H pledge, experiential learning, 4-H structure (clubs and projects), life skills, livelihood skills, essential elements of quality programming, and the history of 4-H in Africa. Also included was an experiential activity and overview of the school gardening curriculum, *Cultivating Learning with School Gardens* (Crave et al., 2009), which is available in French (one of the

official languages in Burundi). Each focus group lasted two hours.

This study's research questions guided the development of the focus group questions. Two experts, an Extension Evaluation Specialist with international experience and the director of the Burundian NGO, reviewed the questions for validity and reliability. The questions were revised based on the suggestions of the experts. Since neither researcher was fluent in Burundi's official languages (French and Kirundi), the NGO's program director, a native Burundian with a long trusted relationship in the community, served as the focus group interpreter and facilitator (hereinafter referred to as the facilitator). Trusting the facilitator is essential for participants to feel safe to share their thoughts and opinions (Halcomb, Gholizadeh, DiGiacomo, Phillips, & Davidson, 2007).

The facilitator used a semi-structured protocol where he asked the focus group questions and then followed with probes for further clarification (Mwaijande, Miller, Wailes, & Peterson, 2009). Participants were informed of the focus group procedures and were free not answer questions or withdraw at any time without consequences to their future participation in the program, adding to the study's credibility and ethics (Merriam & Tisdell, 2016; Shenton, 2004). Each participant was reimbursed for round-trip transportation costs to the focus group site and was provided light refreshments during the focus group.

After each question was asked, the facilitator translated the participants' answers for the researchers and they took notes. Researchers also observed and took notes on body language and the characteristics of each site location. Three strategies were engaged to assure validity of the data: multiple researchers came to agreement on observations, participants

were asked to confirm the translations (member checking), and after all three focus groups had finished, several NGO staff members met with the researchers to determine accuracy of the data (McMillan & Schumacher, 2011). The university-affiliated research office found the project exempt from full IRB review.

Data Analysis

Immediately after each session the researchers and facilitator met to discuss the translations and to clarify any misunderstandings or questions. Researchers determined coding categories based on the interview questions (template analysis style) and then independently coded the responses for each category (McMillan & Schumacher, 2011). To ensure consistency, researchers met periodically to compare results and discuss differences. Once the researchers concluded their coding, they met with the facilitator to triangulate the analysis (Merriam & Tisdell, 2016). Then the researchers shared the findings with the NGO organizational leadership, discussing, debriefing, and confirming the results, which added to the reliability of the study (Merriam & Tisdell, 2016). As a final step, an outside expert reviewed all aspects of the data collection and analysis to confirm the reliability of the processes (Merriam & Tisdell, 2016).

Findings

Needs of Students and Educators

Results are organized based on the two research questions. Two themes emerged in response to the first research question, "How do public school teachers, school administrators and NGO educators in rural Burundi describe the needs of primary students and the challenges of teaching/working with this population?" The first theme relates to the needs, hopes, and

dreams of the students. The second theme relates to the need for more professional development opportunities for educators to assist them in their role.

Theme 1: Hunger and Quality Education

Participants reported that poverty was the greatest challenge they faced in working with youth. Students arrive at school hungry, do not receive any nourishment while at school and cannot afford to bring food from home. Schools also lack reliable access to potable water. Additionally, students do not have sufficient books or school supplies. When asked, "What would make the most impact in the lives of the students?" participants agreed that quality education was the most important. However, for that to happen students needed "basics like food, clothing, and shelter as well as well-trained teachers." The participants described quality education in two ways.

First, they expressed the need for school resources, such as chairs for each student; teaching materials like textbooks, chalk, paper, and pencils; and uniforms for school teams and dancing groups.

Secondly, participants described the need for youth to learn livelihood skills, knowledge of technology, agriculture, and life skills (i.e. goal setting, cooperation, and conflict resolution). Participants also reported that students have little or no time for out of school activities (e.g. homework or reading) because they are helping with chores at home. Chores described included "fetching" water before and after school, caring for animals, helping with farming and cooking for the family.

If youth have any spare time, the boys enjoy playing soccer (futbal) and running, and the girls practice traditional dances. All youth enjoy listening to music. Participants also shared that the youth they work with wish to have more resources than

they currently have (e.g. getting out of poverty).

The youth also dream of becoming "important people" such as doctors, ministers or priests, well-known athletes, nurses, engineers, journalists, teachers, political figures or teachers. The educators also shared their hopes for the students. The participants wanted their youth to stay in school and work to empower themselves through education, moving towards a better future. One afterschool staff member specifically voiced his wishes that "more girls would stay in school past the 6th grade and would wait to marry and have children at a later age".

Participants felt that what the students like most in school are hands-on activities that allow for creativity and a sense of empowerment such as singing, dancing, games, drawing, and sports. The students also enjoy learning languages such as English and Swahili. This desire from the students to learn experientially led to the second theme.

Theme 2: Professional Development Opportunities

The teachers voiced a strong desire to have more professional development than what they receive. The school systems offer professional development for teachers during school breaks, however, due to a lack of funding the teachers felt it was not enough to help them with the challenging situations they face in the classroom. All participants reported a strong interest in learning more about classroom management, ages and stages of youth development, positive youth development, and gaining knowledge and skills in technology and horticulture to implement school gardens.

Although agriculture is one of the subjects taught in school, there is no professional development for teachers on this topic. Participants wanted to have more

knowledge to pass on to their students beyond what they had learned from their own home gardening experiences. Participants reported a strong interest in the 4-H curriculum, *Cultivating Learning with School Gardens* (Crave et al., 2009). They were most interested in applying the hands-on activities in the classroom and in the afterschool program to teach specific skills while producing food.

Implementing 4-H in Burundi

The second research question was "How do public school teachers, school administrators, and NGO educators in rural Burundi view or perceive the cultural appropriateness and feasibility of implementing a 4-H school gardening program in public schools?" The participants' responses centered on two themes: the 4-H pledge and the experiential learning model as manifested through the school gardening curriculum.

Theme 1: The 4-H Pledge

During the focus groups, participants asked for the 4-H Pledge (i.e., I pledge my head to clearer thinking, my heart to greater loyalty, my hands to larger service, and my health to better living, for my club, my community, my country and my world) to be translated into Kirundi. After translating the 4-H pledge into Kirundi, the participants spent approximately 20 minutes practicing and memorizing the pledge so that they could teach it to their students the next day. They shared that learning the 4-H pledge would be a joy for the students and help the students remember how working in the gardens could connect to the 4-H philosophy as described through the pledge. Also, participants unanimously agreed that the 4-H pledge aligned with the Burundian cultural values of caring for one's neighbors and having a strong sense of responsibility.

Theme 2: Experiential Learning Model

The participants felt the Experiential Learning Model (i.e., Do, Reflect and Apply) was a valuable method to teach students the concepts of personal goal setting and self-empowerment. One participant specifically described his desire for youth to view their world through the lens of what they could do for themselves, their families, and communities without waiting for assistance or aid from the government. He stated, "I want our youth to be empowered, not wait for others to do for them." Others felt using experiential learning methodology could be a way to cultivate creativity in their students, help them gain livelihood skills for obtaining employment, and to grow to their fullest potential. Participants viewed the school gardening curriculum as a tool to help with experiential learning while learning desirable life skills (e.g. teamwork, communications, and decision-making) and to produce food by teaching horticulture skills to the students, their families, and the community.

Discussion and Recommendations

The purpose of this study was to ascertain the needs of primary school aged students and their educators in rural Burundi and to determine if a 4-H school gardening program would be applicable in the public school and afterschool setting. Based on the findings from this study, the 4-H school gardening program has the potential for Burundian students to learn livelihood skills to obtain jobs in agriculture, feed themselves and their families, and learn valuable life skills of teamwork, communications, decision-making, and problem-solving.

To achieve these outcomes, it was important the researchers verified that the 4-H school gardening program would be a cultural fit in Burundi. Conducting this study through the lens of an empowerment

approach helped the researchers to focus "as much attention on how goals were achieved as on outcomes" (Zimmerman, 2000, p. 45). It also provided the tools needed to begin the empowerment process from the initial conversations with partners to conducting the study and designing recommendations for future steps.

Needs of Students and Educators

The focus groups revealed that poverty and hunger are the main needs of Burundian primary school youth. These findings confirm statistics showing that Burundi is the second poorest country in the world (Headrick, 2016) and that 81% of the population lives below the international poverty line of U.S. \$1.25 per day (UNICEF, 2013). Hunger causes impediments to student learning such as difficulty paying attention, moderated cognitive functioning, and lower performance levels on tests (Taras, 2005).

Implementing the *Cultivating Learning with School Gardens* (Crave et al., 2009) program has the potential to alleviate some hunger during school time while helping students learn gardening skills that they will then share with their families at home. The CLSG report from Rwanda, Congo, and Mozambique revealed that "A surprising number of students have gardens at home that utilize the skills they are learning in the SGP (School Gardening Program). The skills students talked about demonstrating to their parents included: making furrows, planting, watering, weed control, plant spacing, nursery construction, composting, and introducing new crops" (Coolman, Badini, & Taugher, 2010, p.14).

Focus group participants felt that the most effective pathway out of poverty and hunger was through quality education. The CLSG program provides the opportunity for students to learn science experientially while gaining lifelong skills to share with families

and communities. CLSG may also aid students in seeing the relevance of science in their daily lives and lead to more science related occupations (Glenn & Wingenbach, 2015).

A program similar to CLSG, the Junior Master Gardener (JMG) program, has shown that when implemented internationally the program has the potential "to improve science education and empower youth. JMG programs equip youth with improved scientific knowledge that may help them to transform their lives and the lives of those around them" (Glenn & Wingenbach, 2015, p. 71). Furthermore, research shows "that STEM [science, technology, engineering, and math] education is closely related to a country's development" (Glenn & Wingenbach, 2015, p. 70) and can help a country build a strong base for future growth (Osborne, Simon, & Collins, 2003).

Educators participating in the focus groups felt they needed more professional development in two key areas: 1) positive youth development and 4-H methodology including experiential learning, and 2) agricultural science and horticulture. The CLSG final report supports the need for training educators in experiential learning methodology. "Experiential learning is new to all the teachers we interviewed. Asking teachers to embrace such a new teaching method requires a long-term plan of training and skills development" (Coolman, Badini, & Taugher, 2010, p.42).

Cultural Appropriateness of 4-H School Gardening Program

Findings from the focus groups indicated that implementing a 4-H school gardening program is viable, desired by teachers, administrators, and afterschool staff, and that the 4-H philosophy as outlined in the 4-H pledge is a cultural fit. The 4-H pledge focuses on four learning

goals for program participants, both youth, and adults (Borden, Perkins & Hawkey, 2014). "I pledge my head to clearer thinking" indicates learning how to analyze situations for developing sound decision-making and problem-solving skills. These are greatly needed skills in a country where illiteracy can allow citizens to be misled by political corruption (Ntahobari & Ndayiziga, 2003). Also, decision-making and problem-solving skills lead to individual empowerment (Zimmerman, 2000).

The second and third goals of the pledge (I pledge my heart to greater loyalty and my hands to larger service) support Burundian values of tolerance, caring for others, personal and community responsibility, and being reliable (Haken, Imbriano, Nun & Tobias, 2011). The final goal of the pledge, "I pledge my health to better living," focuses on the need for physical and mental health. Focus group results highlight the need for more food for better health, which will enhance learning and provide a path out of poverty. The alignment of the 4-H pledge with Burundian cultural values and needs is critical. A program embedded in the culture of the community leads to empowerment (Zimmerman, 2000; Peterson, Lowe & Aquilino, 2005).

Results also indicated that the experiential learning methodology implemented through the school gardening program was highly valued. Burundi public schools are currently implementing a new system where students take the lead in their learning, and the teachers act as facilitators (Sambira, 2012). The school gardening curriculum provides teachers and afterschool staff the tools to implement this pedagogy while also providing greatly needed science lesson plans. The program supports 4-H's history as an organization capable of teaching agricultural science through positive youth development, increasing

participants capacity to improve the rural economy (Major & Miller, 2012).

With the above discussion in mind, we have four recommendations. First, the 4-H program is introduced into the school system and afterschool programs through the implementation of *Cultivating Learning with School Gardens* (Crave et al., 2009). By implementing a science-based experiential program that teaches livelihood and life skills, the potential is ripe for applying empowering processes at both the individual and organizational levels (as outlined in Table 1). The 4-H program using CLSG has the potential to make lasting change in the community. Secondly, we recommend that educators receive professional development which includes the 4-H philosophy and methodology, experiential learning, CLSG curriculum, positive youth development, evaluation, additional horticulture topics, and conflict resolution. Thirdly, we recommend that empowering processes such as decision-making and shared leadership are integrated into all aspects of the school gardening program: development of the budget, creation of action and staffing plans, and implementation of the program. The integration of empowering processes will provide opportunities for local partners to move towards empowered outcomes (see Table 1) and lead to program sustainability. Providing only knowledge or skills training to community groups is often not sufficient for long-term outcomes or lasting empowerment (Hennink et al., 2012). Lastly, the cultural context and the role of all professionals as collaborators must be foremost in the minds and actions of U.S. partners at all levels of the program. "Acknowledging the role of culture while implementing projects in Burundi is crucial to achieving sustainability in this war-prone country. We argue that only while taking into account both traditional Burundian

culture and the profound impact of colonization on Burundi's culture will positive societal reconstruction, and economic development become possible" (Haken, Imbriano, Nun, & Tobias, 2011, p. 35).

The majority of the citizens in developing countries like Burundi rely on agriculture for their livelihood (Bennell, 2007). Thus it is vital that today's students develop their interest and skills in gardening and horticulture while also developing valuable life skills that will empower them to improve their economic status and increase their civic engagement. The results of this initial needs assessment indicate that despite the economic and cultural differences between the U.S. and Burundi, the 4-H school gardening program is a viable option to assist rural Burundian students to achieve a brighter future.

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