



Enhanced community capital from primary school feeding and agroforestry program in Kenya



David Borish^{a,b,*}, Nia King^{a,b}, Cate Dewey^{b,c}

^a Bwaliro Primary School, PO Box 191-50405, Butula, 011 254 733 945 899, Kenya

^b Department of Population Medicine, Ontario Veterinary College, Guelph, Ontario, Canada

^c Centre for Public Health and Zoonoses, University of Guelph, Guelph, Ontario, Canada

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ABSTRACT

This case study examines the impact of the Bwaliro Primary School feeding and agroforestry program on the human, financial, natural, and social capitals of the surrounding Bwaliro community in western Kenya. Additional to the targeted improvements in attendance and educational performance, program spillover effects likely included enhanced child health, community agroforestry knowledge, increased tree planting and diversity of crops and trees, saved household income, and improved relations within the family unit and among community members. Participants suggested that increasing the community's capacity to contribute to and collaborate with the school is necessary for program sustenance and for further community development.

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1. Introduction

In 2003, the Government of Kenya established a goal of universal primary education, and introduced a policy of compulsory, free primary education (Finan et al., 2010; UNESCO, 2005). However, large numbers of children are still not enrolled in or do not attend school (Finan et al., 2010). Barriers, such as exam fees, lack of uniforms and food prevent children from attending primary school (UNESCO, 2005). Feeding programs serve as a strategic approach reaching the most vulnerable children (such as orphans), and provide incentives to attend school for malnourished children (Bundy et al., 2009). Feeding programs implemented in the central, east, and north provinces of Kenya have increased school enrolment, attendance, retention rates, overall academic achievement and numbers of students continuing on to secondary school (Finan et al., 2010).

A lack of income generating-activities is one challenge to ensuring sustainable school feeding programs, especially when there are increased enrolment rates (Gelli, 2010). School agriculture projects, such as growing crops and raising livestock, are

practical ways to generate revenue to support feeding programs (Foeken et al., 2010). Agroforestry projects, which integrate the harvest of trees and tree products in addition to other farming activities (Dawson et al., 2013), can also be a practical way of generating revenue. According to Thorlakson and Neufeldt (2012), agroforestry projects improve productivity, wealth, and the environmental quality of agricultural activities. While studies have been done to evaluate the impacts of agroforestry on communities, there do not appear to be studies that have evaluated agroforestry projects relating specifically to school feeding programs.

While some schools have successfully implemented feeding and agriculture programs, there remains little knowledge about the impacts of a school program on the surrounding community. With this knowledge, community-based strategies could be implemented to extend benefits from the school to the community and ensure sustainability. This case study examines the impacts of one school feeding and agroforestry program on the surrounding community in Bwaliro village of rural western Kenya.

The agroforestry project includes: a new well; crops, including maize, kale, millet, dry-land rice, sweet potatoes, cassava, and napier grass; a greenhouse for tomatoes; breeding age pigs and sheep; a tree nursery, including fruit trees such as avocados, mangoes and jackfruit, trees for lumber, fire wood, termite-resistant bananas, and animal food (fodder). The students are taught composting, crop rotation, nitrogen fixation (using peas and/or sespania trees), inter-crop planting, use and maintenance of

Abbreviations: OVC, orphaned or vulnerable children; NOVC, non-orphaned or vulnerable children.

* Corresponding author at: Department of Population Medicine, Ontario Veterinary College, Guelph, Ontario, Canada.

E-mail addresses: dborish@uoguelph.ca, borishdavid@gmail.com (D. Borish), cdewey@uoguelph.ca (C. Dewey).

green houses, animal husbandry, growing and caring for trees from seed and the use of swales to capture water. The terms permaculture and agriculture have been used in previous literature to describe similar project designs. For this paper, the term agroforestry refers to all income-generating activities mentioned above.

1.1. Regional context

Busia County of western Kenya has a population of approximately 653,000 people (International Labour Organization, 2011); of which more than 80% live in rural areas (Finan et al., 2010). Most of the livelihoods in the Busia County are reliant on small-scale subsistence farming for income and food security (International Labour Organization, 2011). Poverty is a major challenge in the county, with 66% of people living in absolute poverty, specified at 1562 KSH (17.53 USD as of June 3rd, 2014) per month (International Labour Organization, 2011). With 75% of households considered food insecure, malnutrition is a significant issue (International Labour Organization, 2011). HIV is prevalent in approximately 14% of the total county population, which is higher than the national level of 6% (International Labour Organization, 2011). Increasing numbers of orphans and households headed by guardians are the consequences of the HIV/AIDS pandemic (National Council for Population and Development, 2013), with 18.3% of households taking care of one or more orphans or vulnerable children (OVC) (HIV and AIDS Profile Busia County, 2011). Subsequently, children are denied an education because of working to support their families (NCAPD, 2013), or lack of resources to pay for school related expenses. Children (64%) between the ages of 5 and 17 drop out to contribute to the household income and basic necessities (International Labour Organization, 2011).

1.2. Capital benefits from feeding and agroforestry programs

This study recognizes that there are various factors to enhance the livelihood capacities of people living in poverty. In line with the Sustainable Livelihoods Framework, livelihood resources are basic social and material assets that can be conceptualized as different “capitals” that contribute to progressive livelihoods (Krantz, 2001). The aim of this section is to outline the effects of the feeding and agroforestry programs on four capitals: human, financial, natural, and social.

1.2.1. Human capital context

According to Krantz (2001), human capital is the knowledge attained by a group of people that can be used directly for productive livelihood strategies. Human capital can be seen as one beneficiary of a school feeding and agroforestry program. In early childhood, malnutrition can adversely affect physical, mental, and social aspects of health (Kristjansson et al., 2015), but conditions can improve when children take part in school feeding programs (Foeken et al., 2010). The Government of Kenya has recognized these programs as a means to distribute food to children attending school as a food security net (Walingo and Musamali, 2008). Improving nutritional status may contribute to a child’s short-term attention spans, energy levels, and the motivation to learn (Galloway, 2010; Kristjansson et al., 2015). A feeding and agroforestry program can also have spillover effects on human capital in the surrounding community. Informal education regarding farming practices can provide practical learning for children (Foeken et al., 2010).

1.2.2. Financial capital context

Financial capital refers to resources such as availability of cash that a household can use to achieve its economic objectives

(Department for International Development DFID, 1999). Feeding programs have a direct economic effect on the annual household budget, as there are reduced costs (4–9%) associated with food purchases when children are fed at school (Finan et al., 2010). In order to acquire food, rural African households require both productive resources, such as tools, seed, and livestock, and income to purchase food not produced by the household (Benson, 2004). Household income that would have been spent on food for children can instead be allocated to other productive assets, such as livestock or tools, improving their economic livelihoods (Sumberg and Sabates-Wheeler, 2010).

Furthermore, when designed properly, feeding programs can create employment opportunities (Essuman and Bosumtwi-Sam, 2013). The “home grown” concept of a feeding program can “promote local agricultural production and development by providing an ongoing market for small landholders” (Espejo et al., 2009). Sumberg and Sabates-Wheeler (2010) state that having the resources such as seed or fertilizer purchased from the community can stimulate economic activity. Relating to human capital, healthier and better-educated adults are more economically productive (Masset and Gelli, 2013). Therefore, the practical agricultural techniques taught and used throughout the community can improve yields and overall agriculture production, often resulting in increased incomes.

1.2.3. Natural capital context

School and community agroforestry projects positively affect a region’s natural capital. Natural capital is any stock of natural resources that produce valuable goods and services for a population (Roseland, 2000). Department for International Development DFID (1999) claims, “none of us would survive without the help of key environmental services and food produced from natural capital”. This capital is especially important to livelihoods that depend on resource-based activities, such as subsistence farming (Department for International Development DFID, 1999). Agroforestry is one way to support the natural environment within a rural community, and can provide income-generating capacity for rural livelihoods (Asaah et al., 2011). Thorlakson and Neufeldt (2012) found that in western Kenya, agroforestry improved farm productivity, off-farm incomes, and farm environmental conditions, which result in improved standards of living. Agroforestry projects also result in conserved tree resources, enhanced biodiversity, supported sustainable agricultural systems, and income generation through diversification and specialization (Agri-overseas, 2012).

1.2.4. Social capital

School feeding and agroforestry programs can also have positive outcomes on social capital of the surrounding community. Social capital can be described as benefits to a society that derive from the established networks and cooperation between groups and individuals (Australian Bureau of Statistics, 2002). In particular, improved social capital can have economic benefits by enhancing collaborative behavior (Australian Bureau of Statistics, 2002). Recent work in social capital theory identifies three types of social capital: bridging, bonding, and linking. Bridging social capital is the relationship between a group of people who are different in some way (eg. sex, age, and ethnicity) (Szreter and Woolcock, 2004). Bonding social capital is the association within a group of people who are in some way similar, such as family members (Woolcock, 2001). Linking social capital refers to the relationships built between individuals and institutions (Woolcock, 2001). Often, weak relationships among the three learning environments (school, home and community) interfere with the schooling experience of the students (Taylor and Mulhall, 2001). Many problems associated with socio-economic conditions result

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