



# Agriculture, nutrition and economics through training: A virtuous cycle in rural Ethiopia



Elena Urquía-Grande<sup>a</sup>, Elisa I. Cano-Montero<sup>b</sup>, Raquel Pérez-Estébanez<sup>a,\*</sup>, Julián Chamizo-González<sup>c</sup>

<sup>a</sup> Universidad Complutense de Madrid, Spain

<sup>b</sup> Universidad Castilla La Mancha, Spain

<sup>c</sup> Universidad Autónoma de Madrid, Spain

## ARTICLE INFO

### Keywords:

Agriculture  
Economics  
Nutrition  
Training  
Sustainable development  
Village empowerment

## ABSTRACT

The Sustainable Development Goals links together agriculture and education for developing countries towards sustainability. In line with these goals this research has done a “grass-root” experience in a rural area of a sub-Saharan country where a small NPO has been working for more than 20 years. Six villages have been chosen where the NPO already had built wells and child nutritional centres. Regularly, the NPO builds and donates the well for the farmers and starts a training program in both agriculture and nutrition on how to create small farms, cultivate several different vegetables.

The main objective of this research is twofold; firstly, to identify the farmers’ training preferences. Secondly, to analyze the factors that determine agriculture, accounting or nutrition training courses priorities in small local areas in rural Ethiopia. This research work will follow the exploratory research and “grass-root” case study methodology. The researchers have gone to the NPO’s area with a cooperation project in agriculture, nutrition and accounting training and have surveyed the farmers with quantitative and qualitative surveys. The results will be analysed through multivariate statistics. Farmers’ have described their antecedents, their objectives together with all the projects they are currently managing and their need for training in the three areas: agriculture, nutrition and accounting. Among the factors that determine their priorities were socio-demographic variables, types of crops, farmers’ financial inclusion, current and non-current assets and their use of income. Also, the reasons for the differences among the villages are reviewed.

## 1. Introduction

Sustainable Development Goals (SDGs) were developed at the United Nations Conference on Sustainable Development in Rio de Janeiro in 2012 (United Nations, 2012). The objective was to produce a set of universal goals that meet the urgent environmental, political and economic challenges facing our world. This research comprises SDG 2, SDG 4 and SDG 5. First, SDG 2 aims to end hunger, achieve food security, improve nutrition and promote sustainable agriculture. Agriculture can provide nutritious food for all and generate decent incomes, while supporting rural development and protecting the environment. The food and agriculture sector offers key solutions for development and is central for hunger and poverty eradication. Second, SDG 4 aims to ensure inclusive and quality education for all and promote lifelong learning; this research is particularly focused on training farmers in

skills for a long-life approach. Finally, this research connects to the aim of achieving gender equality and empowering all women (SDG5) through the training for both male and female farmers.

Under the Sustainable Development Goals (SDG) framework, much research has been done regarding economics in rural areas, linking advances in agriculture with nutrition and health, with improvement being sought in all these areas to alleviate poverty (Cervantes-Godoy and Dewbre, 2010; Christiaensen and Demery, 2007; Christiaensen et al., 2010; Ravallion and Datt, 2002; Hanjra et al., 2009; Majid, 2004; Minten and Barrett, 2005; Ravallion and Chen, 2005; Sarris et al., 2006; Thirtle et al., 2001, 2003). Not all issues are necessarily important, but according to Maslow (1943), for example, a hierarchy of needs exists in the form of a pyramid. In the base of the pyramid stand the basic needs everybody require to survive such as air, water and food are basic. These are the ones the Non-Profit Organization (NPO) has tried to

\* Corresponding author.

E-mail addresses: [urquiag@ccee.ucm.es](mailto:urquiag@ccee.ucm.es) (E. Urquía-Grande), [elisaisabel.cano@uclm.es](mailto:elisaisabel.cano@uclm.es) (E.I. Cano-Montero), [raperez@ucm.es](mailto:raperez@ucm.es) (R. Pérez-Estébanez), [julian.chamizo@uam.es](mailto:julian.chamizo@uam.es) (J. Chamizo-González).

<https://doi.org/10.1016/j.landusepol.2018.09.005>

Received 17 April 2018; Received in revised form 4 September 2018; Accepted 5 September 2018

0264-8377/ © 2018 Elsevier Ltd. All rights reserved.

provide to the farmers in the six villages with the building and donation of the wells. The wells will provide water and food throughout the villages. Security is the next goal, whether financial, physical (against illness or harm) or personal for humans to fulfill. The third stage in the pyramid is to promote fulfilling friend and family interrelationships. Then, the next stage is the development of esteem, which includes the realization of an individual's full potential or personal empowerment (Udo and Jensson, 2009).

In a framework of sustainable agriculture, researchers in the area of best practices in agriculture have identified several problems, including soil productivity in Sub-Saharan Africa, that are influenced by demographic growth, soil pressure, cultivation practices, dryness, soil fertility and farming technologies (Kassie et al., 2008). Agriculture best practices that guarantee a virtuous cycle of improving crop quality and environmental protection, as well as the nutrition and health of the most vulnerable people, are the key activities required for sustainability. In this cycle, management accounting will control the economic process of the harvests and promote resource optimization by identifying key variables that can be improved: water, fertilizers, nutrients and labour activities that close the gap between agriculture, nutrition and economics. Other research demonstrates that agricultural best practices can determine productivity and therefore the farmers' quality of life (Akuriba et al., 2011; Kassie et al., 2008). Agriculture development can be the basic source of employment and income generation, so a basic economic knowledge for cultivation optimization is important to farmers.

From an agricultural point of view, as with many other developing countries, Ethiopia is still suffering a huge migration of rural people, mostly young people, towards the capital in search of a job in sectors other than farming (Shiferaw and Bedi, 2013). However, in rural Ethiopia, agriculture is the major source of income and livelihood, which implies that the dynamics of growth in agricultural productivity directly affect the welfare of rural farmers (Abro et al., 2014). Thus, the Ethiopian Government is willing to support projects conducted outside of cities to increase the standard of living in rural areas (MOFED, 2010, 2012). Small vegetable gardens are proven effective if there is enough water (Urquía-Grande and del Campo, 2017; Urquía-Grande and Rubio-Alcocer, 2015; Nyssölä et al., 2012). Also, from a health point of view, Ethiopian families must acquire knowledge on proper nutrition for improvements in the nourishment of their children (Alderman et al., 2006). Population nutrition is dependent on one grain harvest after the rainy season and very few cattle. Access to water with excavated hand wells will allow the population to produce food continuously and year-round and to cook it without losing nutrients. In this situation, the NPO focused on donating infrastructure grants in the form of hand-dug wells in rural villages in Woreda region. The aim of a well is to provide enough water for four families, so they can maintain vegetable gardens, where they can cultivate several crops. The donated wells were intended as a socially and economically sustainable project that would help improve family nutritional standards, agricultural knowledge, economy and budgeting culture for family empowerment in line with the ideals of Yunus (1999, 2007). The introduction of home vegetable gardens at a family level represents a substantial improvement in the standard of rural population lives. One of the more innovative things offered by this NPO is the introduction of cultivation of different crops and nutrition training in the households of these villages, where families have been living only on a cereal called teff with very few nutrients (Urquía-Grande and del Campo, 2017). The NPO is a small Spanish missionary institution called the Missionary Community of St. Paul the Apostle, which has been working mainly in Ethiopia, Kenya, Sudan and Mexico for more than 25 years, with agriculture, nutrition and education projects.

In this context, the main objective of this research is twofold: first, to identify the farmers' training preferences, and second, to analyse the factors that determine agriculture, economics and accounting or nutrition training course priorities in local areas in rural Ethiopia.

Methodologically, this research follows, on one side, the qualitative case study methodology used by Rautiainen et al. (2017) and, on the other side, the 'grass root experience' described by Urquía-Grande et al. (2017). The researchers have gone to the area of the NPO with a co-operative project in agriculture, nutrition and economics training and have surveyed the farmers with quantitative and qualitative surveys. The results will be analysed through multivariate statistics (ANOVA and logistic regression). Farmers have described their farming antecedents and their objectives, along with all the projects they are currently managing and their need for training in the three areas—agriculture, nutrition and economics. Among the factors that determine their training priorities were their level of education, their use of income (meaning the farmers' use of income in food, housing or others) and their financial resources. However, factors as the capital assets they own (such as animals or land), income earned per month, gender or type of crops cultivated do not influence the farmers' preference for any training. In addition, the results of this analysis show that differences exist among the villages, and these differences are also analysed.

The main contribution of this research article is as microeconomic research with a 'grass-roots' view, where researchers have visited each village physically and have returned each year to follow the NPO's advances in farmer empowerment, as well as in agricultural, nourishment and economics knowledge enhancements. In this research, we give voice to the people living in the area (qualitative results) to complement the quantitative results. We want to highlight the importance of knowing the farmers' preferences towards different training in agriculture, nutrition or economics for replication of the study in other villages (there are 27 villages in the Woreda area). If the agricultural and economics training are joined, then farmers will be able to manage their resources more efficiently. We find that farmers know good agriculture practices related to their lands during the dry season (from October to June) but do not optimize their resources in the rainy season (from July to September). Furthermore, as observed in these six villages in Ethiopia, the resources are limited, and only the most efficient trainings can be organized; therefore, this research reveals how and what trainings are most necessary. The contributions for practitioners can be the link between training farmers and crop cultivation, nourishment and management improvement towards the eradication of poverty and the development of better standards of living.

The article structure is as follows: first, a bibliographic review is provided, then the methodology, sample and instrument are described, and finally, interesting findings are discussed, such as how the different scenarios in the rural villages imply a need for different agricultural, nourishment and accounting trainings. Conclusions are drawn for both practitioners and researchers.

## 2. Best practices in sustainable development training

Training that addresses the virtuous cycle involving agriculture, nutrition and economics has been studied broadly in order to alleviate poverty and empower poor households in Africa. Some pilot programmes have linked nutrition training to rural agriculture, as in the case of Mali, where small agricultural farms supplied schools and therefore received local government support (Masset and Gelli, 2013).

Much research has been done on the improvement of agricultural training and techniques in low-income countries (Bezu et al., 2014; Dercon et al., 2012; Deressa et al., 2008; Nyssölä et al., 2012). Other research has focused on quantitatively analysing the real impact of all these measures for improving health, education, agriculture and economics together and aligned with the Sustainable Development Goals (Armendáriz and Morduch, 2010; Karlan and Appel, 2011; Valbuena et al., 2015; Van Rooyen et al., 2012; Verrest, 2013). Van Rooyen et al. (2012) show that the majority of researchers demonstrate that financial or grant assistance in the form of group lending, with training in business management and agriculture, has a greater impact in health, food security and education. In line with this trend, Urquía-Grande

Download English Version:

<https://daneshyari.com/en/article/11000107>

Download Persian Version:

<https://daneshyari.com/article/11000107>

[Daneshyari.com](https://daneshyari.com)