Anthropologist 32(1-3): 102-106 (2018)
DOI: 10.31901/24566802.2018/32.1-3.2004

Farmers' Attitude towards Organic Farming Practices: A Concept of Sustainable Organic Farming Development in South Africa

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KEYWORDS Attitude. Descriptive Statistics. Environmental Safety. Organic Farming. Sustainable Development

ABSTRACT Organic agriculture as a sustainable approach is growing increasingly all over the world. In South Africa, organic farming has demonstrated its potential as an important food production mechanism but its deployment in attaining optimum results in food security and environmental safety remains limited. This paper assessed the attitudes of farmers in Amathole District Municipality toward organic farming. The descriptive research design was employed in which structured questionnaires were distributed to 160 respondents. The results revealed that many of the respondents have a positive attitude towards organic farming, but there were concerned about its viability. To improve farmers' attitude towards organic farming in a way that it becomes a sustainable practice, requires synergy between farmers and critical stakeholders especially extension personnel who would be invested with the responsibility of cultivating farmers on sustainable organic farming practices.

INTRODUCTION

Organic farming is gaining popularity all over the world and continues to receive increasing support from government and the private sector. The system has developed gradually but steadily in developing countries such as Uganda, Tanzania, Kenya and South Africa (Lind and Pedersen 2017). The growing acceptance of organic farming is not unconnected to the environmental degradation caused by inorganic farming especially the bioaccumulation of chemicals which results in soil and food contamination, soil erosion and land degradation (Gomiero 2016). Some scholars hold that organic farming is not only a potent method of overcoming the harmful effects of chemical farming (Ramdwar and Siew 2018), but also an environmentally friendly way of achieving optimal and sustainable food production (Darnhofer et al. 2013). Organic farming is seen as an effective system of conserving biological diversity and maintaining long-term soil fertility. According to Darnhofer et al. (2013), the organic "farming system protects the environment, improves biological productivity, minimises soil degradation and erosion, decreases pollution and promotes a sound state of health."

In order to enthrone a viable organic farming culture, farmers must not only have a buy-in but be positively disposed to making it a way of life. This disposition is key if the idea of making organic farming a plank of sustainable economic development is to be realised. The major goal of organic farming as a sustainable pathway, is to produce quality and nutritional foods that are free from chemicals without damaging the environment in a sustainable manner for both plants and animals and thus, enhancing farmers' livelihood through the income generated from the sales of the products (Paschke 2017). A positive farmers' attitude is critical in ensuring sustainable organic farming practice. It is in this light that this paper sought to ascertain the farmer's attitude toward organic farming in South Africa.

Research Objective

The purpose of this study was to carry out a descriptive assessment of farmers' attitudes to-

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ward organic farming practices in the Amathole region of the Eastern Cape Province of South Africa.

Review of Literature

Attitude has been defined as a "mental or neutral state of readiness" structured through experience which has a positive impact on a person's reaction or behaviour towards a phenomenon (Brousmiche et al. 2016). Attitude emerges from a combination of different factors such as the individual's "personality, beliefs, values behaviours and motivations." Attitude helps us define how we see situations as well as define how we act towards the situation or object. For instance, a person's attitude towards new innovation is based on his or her previous experience, values and personality. Attitude underpins individuals' predisposition to adopt an innovation. Wisdom et al. (2014) describe adoption as the method a person passes through when an innovation (technology) is being adopted on a continuous basis. Technology refers to any initiative, practice or object that is seen as new by individuals of a social system (Agostini et al. 2017). According to Berg (2015), a social system represents a group of unified entities that are involved in problem solving with the aim of achieving a common purpose in an innovation. A social system involves individuals, organisational groups, or agencies and their methods of adoption (Greenwood et al. 2017).

The term innovation can be viewed from two broad perspectives the product and the process innovations types. Some scholars such as Ganzer et al. (2017) see product innovation as an end product for utilisation while "process innovation" is classified as a resources to a "production procedure" which bears on the attitude of individuals. Attitude helps us define how we see situations and how we act towards the situation or object. There are three components of an attitude, an effect "a feeling", cognition "a thought or belief", and behaviour "an action". The composition of attitude poses a challenge in measuring it. Hence, standard "rating scales" are necessary for significant quantification in survey research. These scales serve as a medium of communication between the "researcher and respondents". It is essential that "communication validity" is apparent in all survey research (Cha 2017). Rating scales may implore "degrees of frequency", "agreement", "importance", "quality and likelihood", "and a host of other measures". However, choosing a response option is not so uniform either. This may involve choosing a single 608 response from a "dichotomous scale" ("yes/no"), a "trichotomous scale" ("yes/maybe/no"), or scales with different range and response options, for instance, "Strongly Agree", "Agree", "Disagree", "Strongly Disagree".

A number of studies have examined the attitude of farmers to organic farming which showed that farmers' attitude are affected by a variety of factors. In Southwest Nigeria for instance, it was discovered that farmers' attitude to organic agricultural methods was dependent on size of the household, farm, the experience of the farmers, their information sources and level of involvement in the administration (Oluwasusi 2014). A study in Syria that examined cultivation of organic vegetables and fruits, identified level of education and income as major factors influencing farmers' attitude to cultivating fresh vegetables and fruits (Issa and Hamm 2017). Another study in Nigeria found positive correlation between farm size, household size, farming experience, involvement in social organisation and the frequency of contacts with extension officers and attitude to organic agricultural practices (Adebayo and Oladele 2013).

In measuring farmers attitude researchers have employed different methodologies and scales. For example, Kumar (2016) while studying the attitude of farmers towards organic farming in Erode District, measured farmers' attitude using a Likert method of summated ratings and concluded that it is necessary to know the attitude of farmers and then generated a scale comprising twenty-one statements which can be used to measure the attitude of farmers towards organic farming. Similarly, Priyadharshini and Pirabu (2016) adopted Edward's equally appearing intervals scale to generate a scale which was used "to measure the attitude of farmers towards organic farming practices in Tamil Nadu." The scale consisted of ten statements that were standardized for administration. Using dichotomous scale categorised into 'yes' or 'no' response Coombs (2017) sought to "determine inter-rater reliability for information such as mental phase of care in clinicians."

While the existing studies appears to have focused on examining the factors affecting organic farming, this paper on the other hand, fo-

cused on assessing the attitude of farmers to organic farming practices. To the best of researchers' knowledge very few studies have been done which investigated thoroughly the problem of farmers' attitude towards organic farming in South Africa. In the light of this void and the contextual challenges highlighted in literature, it is therefore important to embark on a research of this nature in order to ascertain farmers' attitude towards organic farming practices in South Africa. It is important to find out the attitude of farmers to organic farming as this would help direct policy formulation and assistance to farmers.

METHODOLOGY

Area of Study

The study was carried out in Amathole District Municipality of the Eastern Cape Province of South Africa. The region is located between "Port Alfred and Port St John's" in the Eastern Cape Province of South Africa. The region extends from the Indian Ocean coastline in the South to the Amathole Mountains in the North. The region covers a land area of approximately 23,577.11km^2 and comprises of seven local municipalities and one Metropolitan. The region has a human development index of 0.52 with a population of over 1,635,433 and a moderately high population density of 78 people per square kilometre (Statistics South Africa 2013). Majority of the inhabitants are blacks with some whites and coloureds. The occupation of the people varied. However, majority of the inhabitants are small-scale farmers while others engage in petty businesses and administrative work.

Sampling Plan

Information on organic crop farmers in the study area was obtained from the Department of Agriculture and Agrarian Reform. The organic farmers form the population of the paper. Descriptive research design was adopted to gather a descriptive data for the paper. To achieve the objective of the paper, a multi-stage random sampling was used to select one hundred and sixty respondents from Amathole District Municipality in the Eastern Cape Province of South Africa. Firstly, Raymond Mhlaba and Amahlathi local municipalities were randomly selected from Amathole District Municipality. Four villages were randomly selected from the two local municipalities and they included: Ntelamasi, Mathole, Mavuso and Alice. Forty (40) organic crop farmers were chosen from each of these villages given a total sample size of one hundred and sixty (160) organic crop farmers.

Data Collection

The researchers employed primary source of data which were collected through structured questionnaires. The aim was to get information on the attitude of farmers towards organic farming practices. The data collection took place between June and August 2016. Respondents were given a structured questionnaire containing dichotomous questions where the value 1 stood for 'Yes' and 0 meant 'No'. The questions were based on the knowledge level of the farmers on the various organic farming practices being adopted in the areas as well as on modern organic farming methods.

Data Analysis

A descriptive statistics was used to describe farmers' attitude towards organic farming practices. A dichotomous scale was adopted and the results were presented in form of table. The scale was categorised as 'Yes' or 'No' response. Six attitudinal statements were presented to respondents in the questionnaires. Farmers were asked to tick the appropriate reaction ('yes' or 'no' response). This procedure was adopted in this study for quantitative measure of data analysis.

RESULTS AND DISCUSSION

As shown in Table 1, it was observed that application of animal manure by organic growers was one of the best approaches of improving soil organic carbon, enhance soil quality and ensure future farming productivity. About 78.8 percent of the respondent's believed application of animal fertilizer is a major way to enrich the soil as it avoids the use of synthesized chemicals. This result agrees with the findings of Adebayo and Oladele (2014) that compared the impact of organic fertilizer application with recommended rate of chemical manure. According to their findings, recommended amount of organic fertilizer was cost-effective and preferred

by the farmers because they are inexpensive, accessible and extended persistence of kraal manure under these treatments. This means that majority of the respondents showed a favourable attitude towards the use of organic manure. The use of mulching material by the respondents ranks highly, about 62.5 percent of the respondents showed a favourable attitude towards the practice of organic farming. They use crop residue to prevent soil wearing in the "annual row-cropping systems on sloping lands" to revive soil preservation ethic in the area. This result affirmed the findings of Wallace et al. (2017) which showed that the use of cover crop and dried plants as mulching material reduces production costs as well as soil erosion.

Table 1: Attitude of farmers on organic farming practices (n = 160)

Attitude	*Yes*	*No*
Animal manure	135 (78.8)	25 (21.2)
Mulching	100 (62.5)	60 (37.5)
Crop rotation	152 (95.0)	8 (5.0)
Pest management	141 (88.1)	19 (11.9)
Mixed cropping	115 (71.9)	45 (28.1)
Minimum/Tillage	65 (29.6)	95 (70.4)

Source: Field survey, 2016
Note: Percentage is in parenthesis and boldface

Crop rotation is a major technique used by the farmers and about ninety-five percent of the respondents rely on the practice, which is a form of traditional knowledge where farmers leave their land to fallow to improve soil fertility. This suggests that farmers who adopt the practice have a positive attitude towards sustainable organic practice. Gan et al. (2016) perceived that crop rotations have the ability to fix nitrogen into the soil. The result also shows that about 88.1 percent of the farmers have a positive attitude towards organic pest management systems. These farmers uses cultural method such as "effective crop rotation"," mixed cropping", "habitat manipulation" and use of "trap crops" as active methods that was used to reduce the incidence of pests below economical threshold. Acceptable botanic extract were also used by the respondents to control the incidences of pest as the farming management avoids the use of synthetic chemicals.

The result also shows that about 71.9 percent of the respondents use mixed cropping as way of controlling weeds and pest. This positive attitude serves as a way of maintaining the soil fertility. This result agrees with Brooker et al. (2015) stating that, mixed cropping also lessens the nitrate content in the lower horizon of the soil profile and thus maximises soil nutrients more efficiently than sole cropping.

CONCLUSION

The findings of this paper indicate that organic farming is on the right trajectory in South Africa. The results revealed that most of the farmers have positive attitude on organic farming practices with regard to the effective use of animal manure, dried plants as mulching material, practice of crop rotation to replenish the loss nutrients in the soil, effective pest management system and use of mixed cropping to reduce the incidence of weed. The results had shown that farmers' attitude toward organic farming can be further improved through various interventions from both the private sector and government at both local, state and national areas. The findings have a lot of implication for policy making; organic farming must be improved in order to achieve a sustainable development in the rural areas of South Africa and must be encouraged as well by stakeholders in the agricultural sector, because organic farming is a unified approach, where all dimensions of farming systems are interwoven with each other and work for each other.

RECOMMENDATIONS

The findings of this paper highlight the need to build on this positive attitude of farmers. To ensure a sustainable organic farming practice, all stakeholders especially government and the private sector should consider making additional financial provisions to support farmers in this sector. There is also need for increased funding for research and development which will help provide the necessary innovations and support that will ultimately boost production and income of organic farmers.

ACKNOWLEDGEMENTS

The researchers wish to express their gratitude to the University of Fort Hare, Govan Mbeki Research and Development Centre and the

Department of Agriculture and Agrarian Reform of South Africa for their support to develop this paper.

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Paper received for publication on October 2017
Paper accepted for publication on December 2017