

Teaching Permaculture to Ensure Food Security in Rural South Africa: The Case Study of Tiger Kloof

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ABSTRACT In the rural areas of the South Africa, most people depend on agriculture for their livelihoods. Many adults in the rural areas engage in animal husbandry, crop production and small scale agro-processing. Farmers from the Black communities in South Africa use traditional methods in farming practices which are less productive and expensive. The Tiger Kloof Educational Institution in the North West Province in partnership with the North West Department of Agriculture has been giving training to farmers in permaculture since 2008 as a way of equipping adults with skills in good agricultural practices. This paper investigated the impact of the farmer training in permaculture by Tiger Kloof Educational Institution on food security. The qualitative method using interview schedules was used to solicit the views of 10 farmers, the trainer at Tiger Kloof and one official from the District office of the Department of Agriculture. The findings of the investigation indicate that the training in permaculture is contributing to poverty alleviation and ensuring food security in the communities. The programme is recommended to government and communities in addressing poverty, food security, unemployment and sustainable livelihoods.

INTRODUCTION

The term permaculture according to Sampson et al. (nd) was coined from the two words, permanent and agriculture. Like most developing countries, South Africa faces many socio-economic challenges which include the high poverty levels, growing inequalities, low levels of education, lack of vocational and technical skills, high rate of unemployment and the HIV/AIDS pandemic, just to name a few. Unemployment is blamed for most of the social ills in South Africa but because of the low skills level among a large proportion of the population, they cannot be employed in this knowledge-based economy. In the rural areas of the country, most people depend on agriculture for their livelihoods. Many adults in the rural areas engage in animal husbandry, crop production and small scale agro-processing for their livelihoods. Most of the farming activities are done by adults as the youth do not show interest in farming which they regard as the activity for the old people. Farmers from the black communities in South Africa use traditional methods in farming practices which are less productive and expensive. Permaculture has been suggested as a way of addressing the issues of low productivity, poor farming practices, high production cost and ensuring environmental sustainability. Citing Mollison (1981),

Hemenway and Hemenway (2001) note that permaculture has the potential to solve the world environmental crises if people integrate permaculture into their own culture by applying the principles of permaculture to their daily lives. Sampson et al. (nd) aver that permaculture as component of holistic management is about community living, building healthy environments, producing local food, minimising the use of harmful chemicals, maximising natural energies, ensuring clean air, water and soil, building or conserving bio-diversity and meeting our needs with natural solutions. They add that permaculture technology searches for traditional methods as well as modern soft technologies (such as wind turbines, solar power, micro hydro systems). The aims of permaculture technologies they further explain are to cut on limited energy stores such as forests, fossil fuels and generic materials. Masasi (2010) points out that the objectives of permaculture are to ensure self sufficiency in food production; mimic nature to achieve food security while enhancing the biophysical; allowance for the use of locally available resources/inputs such as (plant nutrients, insecticides mainly repel than destroy); water conservation/moisture using cultural practices; mulching the soil surface as a main management practice; maximise the use of the available resources, minimise input costs and

encouraging animal impact in the production cycle. Holistic management according to Butterfield et al. (2006) “is about reducing risk in decision making by having a holistic goal, using planning procedures that create a balance between financial, ecological and social factors”. The Catholic Relief Services (2008) points out that in conjunction with Caritas Lesotho, they have used the principle of permaculture and organic farming to implement various food security projects that are giving sustainable livelihoods to a number of poor households. The Tiger Kloof Educational Institution in the North West Province in partnership with the North West Department of Agriculture has been giving training to farmers in permaculture since 2008 as a way of equipping adults with skills in good agricultural practices. The impact of the training programme in ensuring sustainable livelihoods and on the environment has not been assessed to date. This paper investigates the impact of the farmer training in permaculture by Tiger Kloof Educational Institution. The study explored specifically the impact of the training programme on food security for the farmers, their families and their communities at large.

Theoretical Framework

This paper uses the holistic theory of Mollison and Holmgren (1978) as a theoretical base. The holistic view according to Whitfield (2010) focuses on a holistic view of nature and life, and follows what is known as systems thinking or systems view of life. He adds that the holistic theory or worldview looks at life in its entirety and the interdependencies that make up life. Wegweiser (2011) points out that, the concept of permaculture which falls under the holistic management system was introduced in the mid 1970’s by Morrison and Holmgren as an alternative to large-scale industrial agriculture. Meanwhile Butterfield et al. (2006) sum up holistic management as a goal-driven decision-making framework that seeks to simultaneously ensure that decisions are environmentally, economically and socially sound. Holistic management in effect makes it possible for people and communities to use the resources and factors they already own, to produce, for livelihoods, create biologically-active soils and improve biodiversity and wildlife habitat, minimise costs, enhance their capacity to produce, reverse desertifica-

tion and water conservation. Permaculture as indicated earlier falls under holistic management. The word permaculture according to Wegweiser (2011) is a combination of the words permanent and agriculture/culture which is defined as “the conscious design and maintenance of agriculturally productive ecosystems which have diversity, stability and resilience of natural ecosystems. It is the harmonious integration of landscape and people providing their food, energy, shelter and other material and non-material needs in a sustainable way” (Mollison 1988). Wegweiser (2010) adds that permaculture design aims to mimic interactions and patterns in multi-functional and mature natural systems, and implements these ideals in detail, adapted to local conditions. Similarly, Brain and Thomas (2013) concur that that permaculture is a design concept for sustainable food production landscape mimicking the diversity and resilience of natural ecosystems. Holmgren (2002) avers that each of the elements within the system is then devised to perform many functions, while each important function is supported by many elements. The holistic theory on which permaculture is based is relevant and applicable to this study as the farmer training by Tiger Kloof Educational Institution in permaculture uses the integration of the land the farmers have to produce the food, plant nutrients and the use of water and other resources in a sustainable manner.

Aims and Objectives

The aim of this paper is to assess the impact of the Tiger Kloof farmer training programme (permaculture) among the beneficiaries and their communities. The specific objectives are to:

- ♦ establish what the training entailed
- ♦ identify the beneficiaries and how they are putting their training into practice
- ♦ assess the impact of the training in ensuring sustainable livelihoods
- ♦ find out the challenges they face in practising what they have learnt.

METHODOLOGY

The qualitative method using in depth-interview was used to solicit the views of 10 beneficiaries of the farmer training programme, the trainer at Tiger Kloof and one official from the District office of the Department of Agriculture on

the impact of the Farmer Training programmes by Tiger Kloof and the North West Department of Agriculture on food security and sustainable livelihoods in their communities.

In this exploratory study the researcher employed the phenomenological approach to gather data from rural farmers who took part in Tiger Kloof's farmer training on 'permaculture' project in Ganyesa and Tlakgameng villages in the North West Province of South Africa. The phenomenological approach was used because it allows the respondents to describe and interpret experiences of the phenomenon as being lived. The phenomenological study attempts to understand people's perceptions, perspectives, and understanding of a particular situation (Leedy and Ormrod 2005).

Population

A population is defined by Bryman and Bell (2011) as the aggregate of cases with a common assigned criterion and features as subjects for a study. The target population for this study was all people who took part in Tiger Kloof Educational Institution's farmer training in permaculture in the two villages who are part of the programme, 52 in total, the trainer and the coordinator from the Dr R.S. Mompoti District office of Department of Agriculture.

Data Collection

The researcher spent one week at Ganyesa in the second week of September 2012. With the help of a local teacher, in-depth interviews were held with 10 farmers from the 'farmer training programme', the trainer from Tiger Kloof and one official from the Department of Agriculture office in Vryburg in the two villages of Ganyesa and Tlakgameng in the Dr R.S. Mompoti District. The purposeful sampling technique was used to solicit the views of the respondents on the 'farmer training programme and the impact of the training on their lives and that of their communities. Purposeful sampling is a technique in which particular settings, persons or events are selected deliberately in order to provide information that cannot be obtained from other choices (Wilson 2010). In this study the participants are not all farmers in the villages but those involved in the institution's farmer training programme that were able to offer rich information for the study. The interviews took place at the

homes of the participants at times that they indicated were convenient to them. One female teacher facilitated the entry and served as the interpreter as the researcher is not Tswana speaking.

RESULTS AND DISCUSSION

All the respondents 10 from the two villages indicated that the farmer training programme has empowered them with the skills to produce vegetables for most parts of the year and taught them good farming practices that are saving them on production costs as well as environmental conservation. This, they claimed, has saved them on money and prevented their families from experiencing hunger. Ninety percent of the respondents said they are able to sell some of their vegetables to neighbours to buy basic necessities like paraffin, cooking oil, candles, salt etc. from their surpluses.

The responses and experiences were put into themes on the basis of the responses on topics which were asked and the responses by most of the respondents to help the researcher to answer the research questions in this paper.

Theme 1

What is Permaculture?

All the farmers who were interviewed were able to explain the principles on which permaculture is based. One fifty-two year old respondent simply said

"My understanding of this whole thing is that you should take care of the land and the land will take care of you".

The farmers explained how they now conserve water; avoid expensive chemicals and use the micro-organisms in the environment to produce their crops and rearing their animals around their homes. One thirty-seven year old woman said:

"I bought a catapult for my son who used to kill the birds that came to the garden. I myself used to kill the worms I found around the crops but I learned through the training that these birds and the worms are my friends. Now I put seeds that attract the birds which control the insects that destroy the plants. Because of this I do not have to buy expensive chemicals to deal with insects".

Another farmer pointed to a near-by drum and said:

"Have you seen that drum there, it contains the "mogotelo" (concoction). My wife had to

clean the pen and the kraal every day and go and throw them far away. I never knew that this was far better than the fertilizers we buy from the shops. It is very potent and not harmful in any way and above all, it is free”.

This view is in line with Whitfield’s world view on holistic management of nature which is premised on the fact that “life in its entirety comprises the interrelationships and interdependencies. Although these farmers have very little education, they appear to have understood the concept of holistic management and the permaculture principle.

Theme 2

Food Security

All the farmers who received the training and took part in the study indicated that the training has helped them to provide food for their families and their communities throughout the year. One forty-one woman had this to say

“Through the training by Mr. Masasi, I am able to feed my family and through our group, we are now supplying the local super market with vegetables every week end. Apart from the food in my home, I now have money to take care of my children and afford most of the things I could not think of buying two years ago”.

The responses from the respondents and the observations from their gardens clearly indicate that the farmer training by the institution is alleviating poverty and ensuring food security in the communities where people have participated in the training. The respondents indicated that the problem of malnutrition and hunger are the things of the past for their families. The trainer arranged and took the researcher to the vegetable gardens of the farmers where he was able to see the amount of crops and livestock they produce was evident. The trainer confirmed that most of the people who took part in the training are now self-sufficient in providing food for their families. For example the trainer noted that:

“When I came here and met these farmers, my heart was sore because of the levels of poverty and hunger in the community. I am happy to note that these people are feeding their families and the community at large”.

The official from the Department of Agriculture from the district expressed his joy about the impact the training is having in alleviating poverty, ensuring food security and job creation in the rural communities. He indicated that, before

the farmer training, most of the people in Tlakgaming and Ganyesa solely depended social grants for survival but he was aware that some of these people have weaned themselves of social support and are now creating employment for some of the other members of the community. He, for example, had this to say about two of the people who took part in the farmer training that:

“I want to express my delight about how two of the people who three years ago were very desperate and poor, today are able to give food from-time-to-time to needy people in their communities from their vegetable farms”.

Theme 3

Challenges

Almost all the farmers indicated that the problems they face are mainly infrastructural which include fencing their garden and water. They indicated that people sometimes get into their yards to steal their vegetables. The lack of proper fencing enables domestic animals to get into the gardens to damage the vegetables. Most of the farmers indicated that water was a major problem for them as they do not have the means to dig boreholes for watering the crops so they have to depend on water from the municipalities which is very expensive and sometimes not connected to their homes.

The trainer however, lamented that he was a bit frustrated as he could not get support recently from the Department of Agriculture to train the number of people who call day and night from the surrounding communities as funding from the Department of Agriculture has stopped since 2011.

On the possibility of future training, the officer indicated that the Department of Agriculture was facing budgetary constraints but they were making efforts to source funds for the programme seeing the impact it is making in the communities.

The findings indicate that the training of the farmers has positively impacted on the lives of the families and communities of the people who took part in the farmer training. All the 10 respondents interviewed are able to produce enough vegetables to feed their families and sell the extra to members of their communities at reasonable prices to generate income for their families. The programme in effect is alleviating poverty and creating employment in the rural communities while at the same time ensuring sustainable livelihoods through environmental care.

CONCLUSION

Tiger Kloof and the North West Department of Agriculture are changing lives through the Farmer Training programmes but the lack of the needed support is affecting future training as the Department of Agriculture has stopped the funding for some time. Permaculture is one of the ways the government can use to address the unacceptably high levels of poverty and ensure food security in rural areas.

RECOMMENDATIONS

It is recommended that:

- ♦ The North West Department of Agriculture, development partners and the private sector supports this initiative as the training is ensuring food security and reducing the high poverty levels in the rural communities.
- ♦ The National Department of Agriculture should use this model in all the other provinces for training households in food security.
- ♦ It is further recommended that the government supports poor households that are trying but cannot afford the infrastructure such as boreholes, fencing etc.

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