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CHALLENGES AND OPPORTUNITIES OF HOMESTEAD FOOD GARDEN IN SOUTH AFRICA: A CASE OF PUMPKIN PRODUCTION

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CHALLENGES AND OPPORTUNITIES OF HOMESTEAD FOOD GARDEN IN SOUTH AFRICA: A CASE OF PUMPKIN PRODUCTION

Abstract

Pumpkin is a source of protein and fat and is a product of homestead gardens. The homestead food garden programme was established in 1997 as one of the projects identified by the government of South Africa to alleviate hunger, malnutrition, and food insecurity in vulnerable households. The objective of this study was to identify the challenges and opportunities of establishing pumpkin production within the homestead food garden programme of Gauteng Province, South Africa. The study used a structured questionnaire to collect primary data from 500 pumpkin producing households. Respondents included participants and non-participants in the food garden programme. The results showed that respondents participating in the food garden programme had a lower educational status than non-participants. High water costs, water shortages, lack of agricultural land and inadequate production inputs were identified as the main challenges for establishing adequate homestead pumpkin production. It is recommended that programme implementers and policy makers should encourage more women to participate in the programme, to factors that hindered the establishment of homestead food gardens. The provision of additional extension service could assist these challenges.

Keywords: Challenges, Opportunities, Homestead food garden programme, Pumpkin production

1. Introduction

The rapid increase in global population, urbanization and climate change have, and will continue to have major consequences on agricultural production and land use systems. Consequently, these factors impact on environmental, social and economic development and sustainability. With the world's population projected to reach over 9 billion by 2050, governments, stakeholders, development partners, practitioners and organizations are interested in the development and implementation of agricultural and farming systems that will yield positive impacts on the output of food production.

The homestead food garden programme in South Africa was introduced in 1997 as one of the government's responses to alleviate food insecurity, hunger, and malnutrition in vulnerable households. Additionally, the programme intended to improve household income through the sale of surplus products. The homestead food garden programme was suitable for the most vulnerable groups such as women, youth, unemployed and military veterans in urban and peri-urban areas in South Africa (Rudolph, 2012).

Beneficiaries of the homestead food garden programme received training on gardening and starter packs according to the Gauteng Food Security Standard of Operation Programme. Beneficiaries received their starter packs after they were trained for three working days (DACE, 2002). Each household received only one starter pack even if more than one person from a household participated in the training programme. The starter pack included a spade, fork, rake, hoe, two 30 dcm^3 bags of compost, a 10-litre watering can and different types of seeds, which included pumpkin seed (GADS, 2006).

Pumpkin is a source of fat and protein that households can obtain from homestead garden production. Therefore, the objective of this study was to identify the challenges and opportunities of establishing pumpkin production within the homestead food garden programme of Gauteng Province, South Africa.

2. Materials and methods

The multi-stage sampling technique was used in this study. Firstly, Gauteng Province (South Africa) was chosen, because the province had implemented the homestead food garden programme. Secondly, five municipalities in the province were

randomly selected with a balloting system. The municipalities that were selected included Johannesburg, Tshwane, Ekurhuleni, West Rand and Sedibeng. Seventy-seven households were randomly chosen from Johannesburg, 78 from Tshwane, 103 from West Rand, 131 from Ekurhuleni, and 111 from Sedibeng, the main reason for the selection was on rural household populations in each municipality. Thus, 500 rural pumpkin farmers were selected, comprising 234 homestead food garden programme participants and 266 non-participants. A structured questionnaire was used to collect data from household heads in 2015. The questionnaire included demographic and socio-economic characteristics as well as challenges and opportunities in establishing homestead food gardens.

3. Result and discussion

(a) Respondents' demographic and socio-economic characteristics

Table 1 presents the demographic and socioeconomic characteristics of all respondents (beneficiaries and non-beneficiaries of homestead garden programme). More men (58.6%) than women (41.4%) took part in the study. This is in agreement with Sikwela (2008) who found that men still dominated as household heads. Among the beneficiaries of the homestead food garden programme, most were men (109) compared to women (55). One hundred and eighty-four men and 152 women respondents did not participate in the programme. It was inferred that participation in the homestead food garden programme seemed to be higher among men than women. A possible reason was that women were engaged in many household chores and other household responsibilities.

Most respondents (173) had a college education followed by 169 respondents with a secondary education. Most of the respondents who participated in the homestead garden programme had a primary education (55), followed by secondary (50) and then college education (43). Only 16 of them were high school graduates. A lower educational status could arguably be translated into less employment opportunities, thus making the homestead garden programme a viable alternative for the unemployed in the study area. The majority of the respondents (219) were married followed by widows (141). Fifty-seven (57) respondents were singles while 83 were divorced. The majority of the respondents (378) were not formally employed.

Table 1: Demographic and socioeconomic characteristics of respondents (n=500).

Variable	Category	Homestead garden		Pooled
		Yes (n=164)	No (n=336)	
Gender	Male	109	184	293 (58.60%)
	Female	55	152	207 (41.4%)
Extension services (DARD)	Yes	42	119	161
	No	122	217	339
Fertiliser application	Yes	58	43	101
	No	293	106	399
Farming method (Hoe)	Yes	131	254	385
	No	33	82	118
Municipality	Johannesburg	34	46	100
	Tshwane	0	100	100
	Ekurhuleni	47	53	100
	Lesedi	30	3	33
	Merafong	26	74	100
	Midvaal	13	20	33
	Emfuleni	14	20	34
Educational level	Primary[1]	55	59	114
	Secondary[2]	50	119	169
	High school graduate[3]	16	28	44
	College[4]	43	130	173
Marital status	Married	60	159	219
	Single	13	44	57
	Divorced	49	34	83
	Widowed	42	99	141
Household formally Employed	No	35	87	122
	Yes	129	249	378

Note: Department of Agriculture and Rural Development
Source: Author's calculation (2015).

Respondents' access to extension services was generally low and yet participation in homestead garden programme was higher among those who receive extension services. The majority of the respondents used hoes, suggesting small-scale farming. Extension services and fertilizer application were also considered among non-participants, because they might have received training from extension officers and applied compost to their gardens. Most respondents, however, did not apply fertilizer. but fertilizer application is

[1] Level of education ranging from grade 1 to 7.
[2] Level of education ranging from grade 8 to 12 but did not complete secondary education.
[3] Successfully completed Grade 12.
[4] Obtained a degree of diploma from a tertiary institution.

higher among beneficiaries of the homestead food garden programme, probably because they receive support in a form of input from the programme.

Table 2 presents the summary statistics of respondents' age and educational status. The average age for respondents participating in the homestead food garden programme (46 years) was significantly higher than non-participant respondents (41 years) by five years at 1% level of significance. There was a significant difference in years of education between participants of the homestead food garden programme and non-participants (-1.198 at 1% level). The average number of years of formal schooling for participants was 10 years and that of non-participants 11 years. Thus, respondents who were non-participants of the homestead food garden programme were more educated than participants.

Table 2: Summary statistics of respondents' age and educational status (n=500).

Variable	Homestead garden participant	n	Mean	SD	Mean difference
Age	Yes	164	46.1159	13.0790	5.485***
	No	336	40.6310	11.1372	
Education (years of formal schooling)	Yes	164	10.0549	4.3642	-1.195***
	No	336	11.2500	4.4878	

Level of significance: * P<10%, **P<5%, ***P<1% (at 10%, 5% and 1% respectively)
Source: Author's calculation (2015).

Respondents' capital and livestock assets are given in Table 3. Even though statistically insignificant, non-participant respondents had a higher total capital asset (ZAR 251 175.595) compared to respondents participating in the homestead food garden programme. Likewise, there was no significant difference between the number of cattle and other livestock owned by participants and non-participants of the homestead garden programme. Both participants and non-participants of the homestead food garden programme had an average of four cattle, one goat, two sheep and one pig. Non-participants of homestead food garden programme had on average one chicken more than participants.

Table 3: Respondents' capital and livestock assets (n=500).

Variable	Homestead garden participant	n	Mean	SD	Mean difference
Total capital assets (ZAR)	Yes	164	243628.049	347920.556	-7547.546
	No	336	251175.595	313991.019	
Cattle	Yes	164	4.4817	13.71957	0.73171
	No	336	3.7500	12.45589	
Goats	Yes	164	1.4024	4.30255	0.23577
	No	336	1.1667	3.87517	
Sheep	Yes	164	1.9512	5.95258	0.27860
	No	336	1.6726	5.53523	
Chickens	Yes	164	2.2805	6.32703	-1.187*
	No	336	3.4673	7.53215	
Pigs	Yes	164	1.1890	3.63448	0.14736
	No	336	1.0417	3.39597	

Level of significance: * P<10%, **P<5%, ***P<1 %(at 10%, 5% and 1% respectively)

Source: Author's calculation (2015).

(b) Respondents' challenges in establishing homestead food gardens

Constraints faced by respondents in establishing homestead food gardens are presented in Table 4. Half (50%) the respondents indicated that high water bills and a shortage of water was the major constraint they encountered in establishing homestead gardens. Approximately a quarter (24.8%) of respondents mentioned the highly urbanized nature of the area and lack of enough agricultural land as a constraint. A few (11.80%) respondents indicated that they did not receive any support from the state and there was inadequate infrastructure for the establishment of homestead gardens. Inadequate production inputs and lack of necessary skills were indicated by 8.40% and 5% of the respondents respectively. A possible solution to address the constraints of implementing homestead gardens is include extension services to take care of the lack of input and necessary skills above what the programme offers.

Table 4: The main constraints faced by respondents in establishing homestead food gardens.

Constraints	Frequency	Percentage (%)
High bill of water and water shortage	250	50.00
Highly urbanised area and lack of enough agricultural land	124	24.80
No support from government and lack of infrastructure	59	11.80
Lack of necessary skills	25	5.00
Inadequate production inputs	42	8.40
Total	500	100.0

Source: Author's calculation (2015).

(c) Opportunities in establishing homestead food gardens

In terms of opportunities, all respondents decided to engage in homestead gardens in order to sustain their families and improve their standard of living by selling excess produce. Thus, homestead food garden initiatives aid in providing food and supplementing income of vulnerable households. Similarly, Lunga (2011) found that homestead gardens alleviated hunger and improved standard of living. The homestead food garden programme improves food security and the livelihood of households. Home gardening, according to the FAO (2010), is a money saving investment as it provides food needed by families. The money that would have been used for buying food can subsequently be invested elsewhere or saved for future use. Producing food in homestead gardens can be done by vulnerable households, because the initial monetary input is small (Talukder and Bloem, 2013).

4. Conclusion and recommendations

The South African government recognizes the need to fight food insecurity and aim to achieve this through household food security interventions. Homestead food garden programmes have contributed to food security and income generation. In this study, more men than women were household heads. All respondents had some form of education, although most were unemployed. The respondents all farmed on a small-scale.

Respondents' main challenges included price and availability of water, lack of agricultural land and inadequate production inputs.

The study recommends that more women should be encouraged to participate in the programme. Homestead food garden programme implementers and policy makers should pay particular attention to factors that hindered the establishment of homestead food gardens. These challenges could be addressed by providing additional extension services.

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