

## Factors Influencing Farmers' Participation in Agricultural Cooperatives in Ngaka Modiri Molema District

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**ABSTRACT** This study examined the factors influencing farmers' participation in agricultural cooperatives in Ngaka Modiri Molema district. A simple random sampling technique was used to select 10 co-operatives from the existing 160 agricultural co-operatives and 12 members were selected from each of the cooperative society to give a total sample size of 120. A structured questionnaire was used to collect data from the respondents/farmers, and analyzed with Statistical Package of Social Sciences (SPSS) using frequency counts and percentages to describe the data. It was found that majority of respondents were male between 21 to 50 and had completed their secondary level of education and have contact with extension officers. The results indicate that majority of participants used hired labor for production. Majority of participants did not have adequate capital for production and minority of participants had adequate capital for production. The study discovered that majority of participants encountered increased prices of inputs, while one participant did not encounter increased prices of inputs. Most of agricultural cooperatives in the North West province have access to transport services and government services. The study discovered that majority of participants joined agricultural cooperatives to overcome food insecurity, while majority of farmers participated in agricultural cooperatives to improve their profit. Majority of farmers did not participate in agricultural cooperatives to access financial linkage. And it was found that participation in agricultural cooperatives was voluntary.

### INTRODUCTION

Agricultural cooperative is a group of farmers who pool their resources together in certain area of activity to facilitate optimal production through efficient use of these resources. This pooling of resources include joint purchase of farm inputs like seed, farm machinery, aiding members morally and financially during cultivation and seeking marketing channels for farm products to ensure better and fair prices. The purpose of forming cooperatives is to create a secured environment in terms of food security and the improvement of the standard of living among other members of the community. Agricultural co-operatives play an important role in the development of agriculture in industrialized countries as suppliers of farming requisite, marketers of agricultural commodities and providing services such as storage and transport. In recent past in South Africa agricultural cooperatives were promoted because they served as agents of agricultural marketing boards and the land bank, which provided subsidized loans to commercial White farmers (Michael 1999; Ortman and King 2007). The South African government still endorses the use of agricultural cooperative as organizations that could help in en-

hancing the development of small scale farmers and other communities in South Africa. Agricultural co-operatives are formed to serve the interest of members which include generating greater profit by obtaining inputs and services at lower cost and marketing their product at better prices. Therefore farmers form or participate in agricultural co-operatives to overcome barriers such as poverty, market failure, missing services, decreased income, reduced transaction costs with traders and contribution to the development of the community. Agricultural cooperatives help in enhancing productivity through access to resources and management skills as members pool their resources together, and through access to resources cooperatives can improve their profit and standard of living. Agricultural cooperatives establish viable and strong linkage with extension agencies in the field of agriculture and technology so that they could access sufficient resources buying of seeds, selling of grain or even helps with the marketing efforts. The agricultural cooperatives in South Africa are the organizations that could enhance the development of small scale farmers and other communities (Ortman et al. 2007; Vink 2012). The principles of the agricultural cooperatives are voluntary and open membership, which simply implies that

every member of the cooperative is free to enter or exit the organization. Agricultural cooperatives' principle also includes democratic member control, member economic participation, autonomy and independence, provision of education, training and information. These principles are provided in order to enhance development and sustainability in an agricultural organization which influence the economic development in the country. Agricultural co-operatives are involved in job creation and are also responsible for the training of the employee in order to perform well and achieve the organization goal (Black 2003; Webster et al. 2012).

It also appears that many of the agricultural co-operatives are adapting their operations to the rapidly changing economic environment characterized by technological change, industrialization of agriculture and the growing of individualism with the objective to generate greater profits by obtaining inputs and services at the lower cost and by marketing their products at better prices. Many types of agricultural co-operatives were established including the consumers, producers and workers (Barton 2000; DTI 2012a)). Agricultural cooperatives plays a prominent role both historically and in terms of the volume of trade, and in addition several agricultural cooperatives currently rank among the top 50 of agribusiness firms, and thus participation in agricultural co-operatives could have a large impact on the agricultural sector. Participation has been defined and measured in a variety of ways in the studies of agricultural cooperation ranging from simple counts of membership to measure financial support and involvement in the running of the organization (Fortune et al. 2000; DTI 2012b).

Extension agencies ensure that the cooperatives utilize resources efficiently so that production can be improved.

Despite the advantages associated with membership of cooperatives, many farmers do not participate in cooperative activities. This becomes a barrier for the success of the cooperative. Poor participation is part of a larger problem for the development of small-scale agricultural cooperatives. This problem becomes more acute as no one will be responsible for overall farm management. Lack of participation in cooperative activities may be caused by members who do not have much experience in working with the others and sometimes members have not

sufficiently developed the acceptance and trust of self and others necessary to work together. This study attempts to examine factors that influence farmers' participation in cooperatives, which will enhance farmers' participation in the cooperative activities. Factors that are responsible for the improvement of participation are important because they develop rural areas by reducing poverty. The main objective of the study is to determine factors that influence participation in agricultural co-operatives among farmers in Ngaka Modiri Molema district. The specific objectives of the study are to: identify the personal characteristics of farmers, investigate the constraints facing farmers towards participation in agricultural co-operatives, analyze the perception of farmers on services provided by agricultural co-operatives, and determine the attitude of farmers towards their participation in agricultural co-operatives.

## METHODOLOGY

The study was conducted in the district of Dr Ngaka Modiri Molema district in the North-West province (MAHIKENG) of South Africa. The other local municipalities in the province include Ratlou, Tswaing, Mafikeng, Ditsobotla and Ramotshere. The province has a large number of villages and less number of suburbs.

Population of the study is the participants of agricultural cooperatives in the district. The list of participants provided by the Department of agriculture, Conservation, Environment and Rural Development indicated that there are 160 agricultural co-operatives available in Ngaka-Modiri Molema. Cluster sampling was used to select 10 co-operatives for the study. And from each of the 10 co-operatives 12 members were chosen giving a sample size of 120 participants for the study. A structured questionnaire was used to collect information from the respondents/farmers. Questionnaire has 4 sections which include demographic characteristics of farmers, constraints facing farmers' participation in agricultural cooperatives, perception of farmers on the services rendered by the cooperatives and the attitude of farmers towards participation in agricultural cooperatives. Statistical Package of Social Sciences (SPSS) was used to analyze data of the study of factors influencing farmer's participation in agricultural co-opera-

tives. Frequency counts and percentages were used to describe the data

## RESULTS AND DISCUSSION

The results in Table 1 show that males are 76.6%. The reason why more males participate in cooperative may be due to more involvement of men in agriculture in the study area than the female. Tekana (2011), also reported more male participation in Taung agricultural irrigation project, indicating low participation of women in Agricultural activities. Thirty-eight percent of the respondents were between 31 and 40 years old, while 37.50% were between the ages of 41-50, whereas 18.30% and 5.80% participants were between 50-60 years old, about 2.5% participants were above 60 years. This result shows that majority of the respondents were still young and strong which is a boost to agricultural production through optimal use of productive resources that can be harnessed through the cooperative. It is also revealed in Table 1 that 60% of the respondents have between 1 to 5 dependants; 20% have between 6 to 10 dependants while 20% is of the respondents do not have dependants. The number of dependants in a household is an indication of the available labor in the household. According to Galor (2003) household with a larger house hold size have more labor for work on the farm.

It is also shown in Table 1 that 93.3% of the respondents were Christians and 6.7% were non-Christians. Thirty-seven percent of the respondents were secondary school leavers, 0.80% have tertiary level education, 30.8% participants have completed High School, while the other 30.80% the respondents have primary school education. This distribution revealed that most of the participants in the agricultural cooperatives were educated. This implies that almost all the participants in the cooperative were relatively educated. According to Bembridge (1988), education is regarded as a basic human need, essential for meeting other basic needs and acceleration of overall development through training skilled workers and enable farmers to make fruitful use of existing resources and accurate assessment of new ones.

It is also revealed in Table 1 that 65.8% of the respondents had between 1 to 3 males per household, 34.16% had between 4 to 6 males per household, while 75.8% had between 1 to 3 females

per household, and 24.16% had between 4 to 7 females per household. According to Galor (2003), the household with a larger family size especially males have most labor available for farm, 1 to 3 households have a size of 65.8% males, which shows that there is a higher labor available for optimum production; 4 to 6 households have 34.16% of males and that means that there is less labor available for production.

Table 1 shows that 40% of the respondents had between 1 and 50 ha, 30% of the participants had between 51 and 100 ha; 10% of the respondents had between 201 - 250 ha while 20% of the respondents had above 250 ha each for production. The large area of land cultivated by majority of the respondents may be as a result of the support received by members from the cooperative. Table 1 indicates that 40% of the respondents produce crops such as maize and sunflower, 30% were engaged in livestock production, which includes cattle, sheeps, goats, poultry and pigs, while another 30% of the respondents produced vegetables, namely tomatoes, potatoes, onions and cabbages. Table 1 also indicates that 83.3% of the respondents have contact with the extension agents while 16.7% of participants do not have access to the extension services. Those who have a higher percentage of accessing extension agents are exposed to adopting new innovations which will help in improving the level of production in a cooperative. According to Antwi et al. (2010) sunflower farmers who had access to the extension services constitute 70.7%, while farmers who had no access to extension services constitute 20.7%. This analysis shows the extent to which the extension workers assist farmers to improve their production. It is also shown in Table 1 that 16.7% participants do not access extension services regularly, while 30.8% receives services from extension occasionally and 32.5% rarely have access extension services. Table 1 also shows that 83.3% is for the extension officers from government, while 16.7% is for participants who do not access extension officers from any agency. Majority of the extension officers who visit the co-operatives are from the government. Agricultural extension is the most important source of information to farmers in most African countries and play significant role in affecting farmers' adoption of innovations (Oladele et al. 2010). Table 1 indicates that 70% of the participants use hired labor and 30% cooperative par-

ticipants practice self labor. The costs of hired labour is being met by the increase in production. According to Groenewald et al. (2001), hired labor was estimated to account for over 70% of all farming cost incurred and impacted heavily on farm profitability.

It is also indicated in Table 1 that 10% of respondents have an annual income of less than

**Table 1: Personal characteristics of farmers**

<i>Characters</i>	<i>Frequency</i>	<i>Percentages</i>
<i>Religion</i>		
Christians	112	93.3
Traditional religion	8	6.7
<i>Education</i>		
Primary	37	30.8
Secondary	45	37.5
High School	37	30.8
Tertiary	1	0.8
<i>Household</i>		
Male		
1-3	79	65.8
4-6	41	34.16
Female		
1-3	91	75.8
4-7	29	24.16
<i>Farm Size</i>		
1-50ha	48	40
51-100ha	36	30
201-250ha	12	10
Above 250ha	24	20
<i>Agricultural Products</i>		
Vegetables	36	30
Livestock	36	30
Crops	48	40
<i>Extension Contact</i>		
Yes		
Yes	100	83.3
No	20	16.7
<i>Frequency of Contact</i>		
None		
None	20	16.7
Regularly	24	20.0
Occasionally	37	30.8
Rarely	39	32.5
<i>No. of Workers in a Cooperative</i>		
Less than 5		
Less than 5	12	10
5-9	48	40
10-15	48	50
<i>Labour Sources</i>		
Self		
Self	36	30
Hired		
Hired	84	70
<i>Annual Income</i>		
Less than 50 000		
Less than 50 000	12	10.0
50 000-100 000	24	20.0
101 000-200 000	24	20.0
201 000-300 000	12	10.0
301 000-400 000	24	20.0
Above 500 000	24	20.0
<i>Years of Membership</i>		
3-6 years		
3-6 years	48	40.0
7-9 years		
7-9 years	36	30.0
Above 10 years		
Above 10 years	36	30.0

R50 000, 20% of the respondents have annual income ranging between R50 000 and R100 000, 20% of the participants earn between R101 000 to R200 000 while 10% of the participants earn between R201 000-R300 000, whereas 20% is for participants receiving income of R301 000 to R400 000. And 20% is of the participants earn above R500 000.

Table 1 shows that 40% of the cooperative members have 3 to 6 years of membership, 30% have 7 to 9 years of membership while 30% of the participants have been members for over 10 years.

### **Livestock and Crops Produced by the Cooperative**

Table 2 indicates 50% of the respondents were into cattle production, 20% of the participants were into sheep production; 10% of the members were into goat production; 30% of the members of the cooperative produce chickens while 30% of the respondents are into piggery, It is also indicated in Table 2 that 60% of the cooperative participants produce maize and 40% of the participants produces sunflower. About 80% participants are engaged in the production of potatoes and tomatoes while 40% of the participants produce onions. Agricultural cooperatives tend to be heavily involved in all aspects of livestock production (Oladele and Monkhei 2008).

It also shown in Table 2 that participants that into cattle production earn the highest annual income of R468, 000 annually followed by participants in chicken production who earns R 233, 000 while participant into sheep and goat production earn lowest income of R45,000;. The total income received by participants specializing in the production of maize and sunflower is R1 565 000 and R1 605 000. An amount of R154 500 is received by participants that are engaged in the production of potatoes, onions and tomatoes. Livestock and crop production is practiced and contributes substantially to the provinces economic growth, with 80% of the labour force substantially being women (Oladele et al. 2010).

### **Constraints Faced by Farmers Towards Participation in Agricultural Co-operatives**

Table 3 indicates that 58.3% of participants indicated that inadequate capital for production

**Table 2: Livestock and crops produced by the agricultural cooperatives**

	<i>Number/ha</i>	<i>Frequency</i>	<i>Percentage</i>	<i>Total income</i>	<i>Mean income</i>
Cattle	376	60	50	R468 000	R468 000/376= 1244
Sheep	62	24	20	R63 000	R63 000/62=1016
Goats	26	12	10	R45 000	R45000/26=1731
Poultry	7965	36	30	R233 000	R233000/7965=29.25
Piggery	1251	36	30	R55 000	R55000/1251=43.96
Maize	570ha	72	60	R1 565000	R1565000/570=2745
Sunflower	395ha	48	40	R1 605000	R1605000/395=4063
Potatoes	14ha	48	40	R94 000	R94000/14=6714
Onions	8.5ha	48	40	R25 000	R25000/8.5=2941
Tomatoes	19ha	19	15	R35 500	R35500/19=1868

is their major constraint. Tekana et al. (2011) also reported that inadequate financial capital limits the farmer's ability to pay for water, electricity, costs of operating and maintaining the irrigation system. Inadequate finance can also prevent households from investing in new methods of crop production and irrigation. Table 3 also shows that 99.2% of the participants encounter increased prices of inputs. According to Hyun et al. (2008), the increased cost of farm inputs and inadequate irrigation were cited as limiting factors to agricultural intensification and diversification. It is also shown in Table 4 that 67.5% of respondents have no access to sufficient water. Water infrastructure is the backbone of societies' transformation of naturally available water resources into water as a key asset for economic growth and development as its objective is to maximize yield (Maluleke et al. 2005). Only twenty- three percent of the cooperative participants indicated that they have no access to loans. This implies that most of the agricultural cooperatives in the province have access to loans in order to facilitate production efficiently. According to Motiram and Vakulabharanam (2007), farmers in cooperatives have more bargaining power, lower transaction costs in getting loans, and better access to information about its members and their resources compared to "outsiders" such as moneylenders and contractors, benefits which strengthen the cooperative's power.

It is also revealed in Table 3 that 64.2% participants reported lack of participation by members in agricultural cooperative activities as another constraint. Participation in agricultural cooperatives is important as it has a positive impact on their profit, and farmers' participation in the cooperative activities improves their level of knowledge and skills.

**Table 3: Constraints facing farmers' participation in agricultural cooperatives**

	<i>Frequency</i>	<i>Percentage</i>
<i>Inadequate Capital for Production</i>		
Yes	50	41.7%
No	70	58.3%
<i>Increased Prices of Inputs</i>		
Yes	119	99.2%
No	1	0.8%
<i>Insufficient Supply of Water</i>		
Yes	81	67.5%
No	39	32.5
<i>Poor Access to Loans</i>		
Yes	28	23.3%
No	92	76.7%
<i>Lack of Participation in Cooperative Activities</i>		
Yes	77	64.2%
No	43	35.8%

### **Perception of Farmers on the Services Rendered by the Co-operatives**

Table 4 shows that 50.8% of participants agreed that they have access to training service have access to training services, while 36.7% participants agree strongly that they have access to training services, whereas 6.7% and 5.8% indicates participants who do not have access to training services. Training is vital because it provides adequate skills and knowledge to the farmers so as to improve their income. It is also indicated in Table 4 that most of the agricultural cooperatives do not provide health care services, 42.5% and 53.3% strongly disagree, while 1.7% and 2.5% agree to having access to health care services. This shows that majority of cooperatives members have no access to health care services. The results in Table 4 show that 3.3% and 20% of participants disagree to having access to transport services, while 4.2% of partici-

pants are neutral whereas 47.5% and 25% agrees that they have access to transport services. Majority of participants in various cooperatives have access to transport services. Table 5 also shows that 0.8% and 20.8% participants disagreed of having government services, while 57.5% and 19.2% of participants agree that they have government services. Government services assist farmers in adopting new innovations and in improving yield.

#### Attitude of Farmers Towards Participation

Table 5 shows that 32.5% and 18.3% agree that food insecurity leads to participation in agricultural cooperatives while 3.3% and 30.8% of participants disagree that food insecurity influence participation. This analysis shows that majority of participants agrees that food insecurity influence farmers participation. This is similar to the findings of Arcus (2004) which reported that increased production of food for own consumption and for the market has helped to reduce the need for coping strategies and has also influenced farmers to participate in agricultural cooperative. It is also indicated in Table that 50% and 35% participants agreed that they participate to improve profit while 6.7% of the participants indicated that they do not participate to improve profit. This study shows that majority of farmers participate in cooperatives to improve profit. Table 5 also shows that 4.2%

and 42.5% do not participate to access financial linkage, 22.5% participants were undecided, whereas 25.8% and 5% agreed that they participate in cooperatives to access financial services. This study indicates that most of the farmers did not participate in the cooperatives to have financial linkage. Table 5 indicates that 59.2% participants agreed that participation in cooperative is voluntary while also 40.8% participants strongly agree that participation is voluntary. This implies that 100% of participants agree that to participate in agricultural cooperative is voluntary.

#### CONCLUSION

The results of the study revealed that constraints facing farmers has discouraged participation in agricultural cooperatives, which includes inadequate capital for production and lack of participation in the activities of the cooperative. The services provided by the cooperatives such as financial services, training services, extension services, transport services and the government services plays a significant role in influencing farmers participation in agricultural cooperatives. Attitude of farmers towards participation in agricultural cooperatives is influenced by the availability of loans, improvement of profit, development of rural areas and the adoption of innovations from the extension agents. These are the factors influencing participation of farmers in agricultural cooperatives.

**Table 4: Perception of farmers on services provided by the cooperative**

	SA	A	U	D	SD
Access to training services	44 (36.7%)	61 (50.8)	7 (5.8%)	8 (6.7%)	0 (0)
Access to health care services	3 (2.5%)	2 (1.7%)	0 (0)	64 (53.3%)	51 (42.5%)
Availability of transport services	30 (25%)	57 (47.5%)	5 (4.2%)	24 (20%)	4 (3.3%)
Presence of government services	23 (19.2%)	69 (57.5%)	2 (1.7%)	25 (20.8%)	1 (0.8%)
All participants receive adequate services	2 (1.7%)	20 (16.7%)	48 (40%)	44 (36.7%)	6 (5.0%)

**Table 5: Attitude of farmers towards participation in agricultural cooperatives**

	SA	A	U	D	SD
Food insecurity leads to participation	22 (18.3%)	39 (32.5%)	18 (15%)	37 (30.8%)	4 (3.3%)
Higher profit influence participation	22 (18.3%)	60 (50%)	18 (15%)	37 (30.8%)	4 (3.3%)
Participate to access financial linkage	6 (5%)	31 (25.8%)	27 (22.5%)	51 (42.5%)	5 (4.2%)
Participation in cooperatives is voluntary	49 (40.8%)	71 (59.2%)	0 (0)	0 (0)	0 (0)
Participation in cooperatives reduces poverty	49 (40.8%)	63 (52.5%)	5 (4.2%)	3 (2.5%)	0 (0)

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