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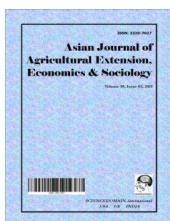
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# **Contribution of Grain Marketing Cooperative to Members in Toke Kutaye District of West Shewa Zone, Ethiopia**

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## **Authors' contributions**

*This research article was prepared in collaboration between both authors. Both authors also read and approved the final manuscript.*

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## **ABSTRACT**

Grain marketing cooperatives assist the members in ensuring food security. However, there was no adequate study that assessed the economic, social and financial benefits of cooperatives at the district. Hence, the objective of the study was to assess the contribution of grain marketing cooperatives to the members. A cross sectional survey was employed using 114 cooperative members. Systematic sampling technique was employed to identify the sample respondents. The data were collected using structured interview schedule, group discussion, key informant discussion and observation; and were analyzed using descriptive statistics, t-test,  $\chi^2$  and partial budgeting. Partial budgeting result revealed that the members benefited because of their membership in grain marketing cooperatives. The t-test and  $\chi^2$  also revealed that market information, training, supply/provision of improved seed and size of livestock were significantly influencing the benefit of cooperatives to the members. Thus, cooperative promotion offices, research and NGOs need enhancing cooperatives through research and promotion activities on designing a system for value chain or market chain, selecting available service diversification; strengthening coordination and building the capacity of members for maintaining the quality of the production.

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## 1. INTRODUCTION

Grain marketing cooperatives are a combination of warehouse and financial institution, where farmers can deposit their harvest and receive a receipt. By storing agricultural produces in the warehouse, the farmers can wait until prices increase before selling their harvest on the market. By receiving a receipt they can circulate as money, they are not forced to sell their crops when prices are at their lowest, generally following the harvest [1].

In understanding the benefits of cooperatives, evidence shows that cooperatives enable farmers to achieve economies of scale, bargaining power and capacity to invest in more advanced stages of the value chain including storage, processing, marketing and distribution. As transaction costs are reduced, relationships with commercial enterprises can be built through contract farming or other mutually beneficial arrangements. In addition, as community institutions, cooperatives devolve decision making to the community level, build social capital, community spirit and pride [2].

As of Trechter [3] economic impacts are quantified in terms of different methods like annual sales and employment along with impacts of a subjective nature such as environmental concerns, access to goods, changes in communication, education, and building leadership capacity. Because the relationship between cooperatives and their communities is so important, cooperatives face the challenge of clearly documenting and describing the benefits they create, not just for their members but also for the broader community. Cooperatives provide technical and financial resources, infrastructure, and access to equity capital for entrepreneurial business development that engage members of the community in local business development. Cooperatives support their members to reduce the cost of purchasing non-local goods and services and provide access to services. Cooperatives create employment opportunities in three different ways. First, they offer direct wage employment to people who work in primary and secondary cooperatives as well as in governmental cooperative support institutions (e.g. ministries, departments, cooperative colleges, etc.). Secondly, cooperatives offer self-employment to members, whose participation in the economic activities that they make possible substantially guarantees a decent income.

Thirdly, cooperatives also indirectly employ through the spillover effects of their activities on non-members whose income-generating activities are only viable through the transactions they have with, as well as opportunities created by cooperative ventures [4].

Local agricultural and related cooperatives play a vital role in providing goods and services to their patrons and the rural community. Grain marketing cooperatives have their own historical background, formerly farmers especially in the high land area during the harvest period they collect and store grains in one place and they use it for different purposes through their “Edirs or Mahiber” (association) based on the agreement they have.

In Toke Kutaye district, Grain Marketing cooperatives were established in 2003 by Ambo Community Based Development Program (ACBDP) by now Ambo and Toke Kutaye Community Based Development Program (ATCBDP). The fall of Grain prices occurs during the peak harvest season which coincides with the need of payments for various services such as student-fee and clothing, land tax, fertilizer and improved seed loan payment etc. This price fluctuation of the produces was due to many unfavorable situations. Some of them were inadequate access to market information; grain market was grabbed by traders; lack of Farmers organization that deal with grain marketing; and absence of access to credit or finance etc. To overcome the aforementioned constraints, farmers were forced to establish grain marketing cooperatives to get market advantages which in turn save their time, energy and money. Thus, this research was designed to assess the contribution of grain marketing cooperatives to the cooperative members.

## 2. MATERIALS AND METHODS

This study was carried out in Toke Kutaye district of Oromia regional state, Ethiopia, in 2014. The district was purposively selected due to the presence of grain marketing cooperatives and the availability of information in line with the specific objective of the study.

### 2.1 Sampling Techniques

Purposive sampling technique was employed to include district in which grain marketing

cooperatives exist. According to Storck et al. [5] the size of the sample depends on the available fund, time and other reasons and not necessarily on the total population. However, for this study out of 636 total sample frames, 114 households of which male and female constitute 86 and 28 members respectively were considered.

## **2.2 Source and Types of Data**

The study used both primary and secondary data. The unit of analysis for the study was members of grain marketing cooperatives. Thus, primary data were collected from members of the cooperatives. Secondary data were also collected from research reports, bi-annual reports, journal and proceedings. Both qualitative and quantitative data types were used to address the objective of the study. Reliability test was also undertaken to check the stability of survey data. Accordingly, test-retest reliability was used which is the most commonly used for reliability test in survey study. It was employed by having the same respondents to complete the survey at two different times. Then, it was quantified by using correlation coefficient and the r-value is 0.77 which indicates that the responses of the respondents were stable.

## **2.3 Method of Data Collection**

Cross sectional survey was employed to collect the data for addressing the objective of the study. Comprehensive information is obtained through mixed methods such as focus group discussion, key informant interview, questionnaire and observation. In line with the research objective, the questionnaire was prepared and pre-tested. The questionnaire mainly included socio economic background of respondents, contribution of grain marketing to cooperative members. Information such as availability of market information, training for member, improved seed provision, credit service, financial benefit of cooperative were generated.

## **2.4 Data Analysis**

The tools for data analysis were descriptive statistics such as percentages, frequencies, mean and standard deviations. T-test,  $\chi^2$  and content analysis were also used for identifying the influencing variables. Content analysis is useful for examining the content of the qualitatively collected data (KII, FGD) to give meaning in line with the research question. Benefit of Grain marketing cooperative was also analyzed by using partial budgeting techniques.

## **3. RESULTS AND DISCUSSION**

### **3.1 Contribution of Grain Marketing Cooperatives to the Members in Providing Market Information**

As summarized in Table 1, a comparison was made taking into consideration members' response on getting market information before and after cooperative membership. Accordingly, 78.1% of the respondents' did not get market information before membership and 21.9% had the opportunity to get market information from different sources. In contrary, after membership 93% of respondents got market information from the cooperatives marketing committee and Development Agents and only 7.0% did not get market information. In getting market information, there is statistically significant difference between before and after membership at  $P < 0.01$ . It implies that farmers before membership supply their grains to the market without having market information. The gap leads them to be exploited by the local traders. However, after membership the members got a bargaining power and more benefited after becoming a member of grain marketing cooperatives. The finding agrees with Joe [6] that states the provision of cooperatives both tangible and intangible benefits to the communities in which they operate.

Information gathered from focus group discussion and key informant interview participants also confirmed that presence of market information system created to the grain marketing cooperatives' to have enabling institutional arrangement or environment which facilitates the opportunity for the members to benefit from their cooperatives.

### **3.2 Contribution of Grain Marketing Cooperatives to the Members in Providing Training**

Grain marketing cooperative contributed much in organizing training for their members and the comparison of before and after membership indicated that 14.9% of the respondents got training opportunity before membership, where as 56.1% got training opportunity after membership. The more participation in training indicates that farmers could get more awareness about the benefits of cooperatives and farm related activities which in turn, assisted them to produce more surplus crop production. It is in line with Woldegebrail [7] study that reported the importance of training for creating awareness of

the rural people on the importance of cooperative societies. About 56.1% of the respondents confirmed the relevance of the training with that of marketing, farming activities and benefit of cooperative (Fig. 1.). There is a significant difference between training relevance before membership and after membership at  $P < 0.01$ . It implies that training programs provided for members after membership has more relevance with marketing, benefits of cooperative and farming activity than trainings provided by different organs before membership.

### 3.3 Contribution of Grain Marketing Cooperatives to the Members in Providing Improved Seed

In respect to the provision of improved seed, 93.0% of the respondents had the opportunity to get improved seed from government, market and relatives or friends before membership. The supply of the input was not enough as compared to the demand of the farmers. On the other hand, 95.4% of the respondents got improved seed after membership from their cooperatives with that of relatively timely supply on loan basis. Timely return of loan taken in kind or in cash could increase trust of the creditor and assisted the farmers to get the loan on time. With regarding to return of the improved seed before membership, it was totally in cash after harvesting the crop. After membership, the amount of improved seed taken from the cooperative on loan basis was returned to the cooperative in kind during the crop harvest. The system was designed to support the members and encourage them in seed multiplication. The provision of improved seed before and after membership has statistically significant difference at  $P < 0.01$ . Seed multiplication is one of the services and activity delivered by the grain marketing cooperatives. As a result, the improved seed supply was increased after membership. Quantity of grain production was also increased after being cooperative

membership (Fig 2). Initiation of training, exposure visit, experience sharing programs, relatively timely provision of improved seed and other agricultural inputs, technical supports of extension workers, attractive price of grains, market information, establishment of stores or warehouse by the cooperatives near to the farm, enabling government policy/encouraging the farmers/ were some reasons for the increment of grain production after membership. This idea was also supported by focus group discussion and key informant interview participant. In line with this finding, Trechter et al. [3] states that cooperatives support their members to reduce the cost of purchasing non-local goods and services and provide access to services.

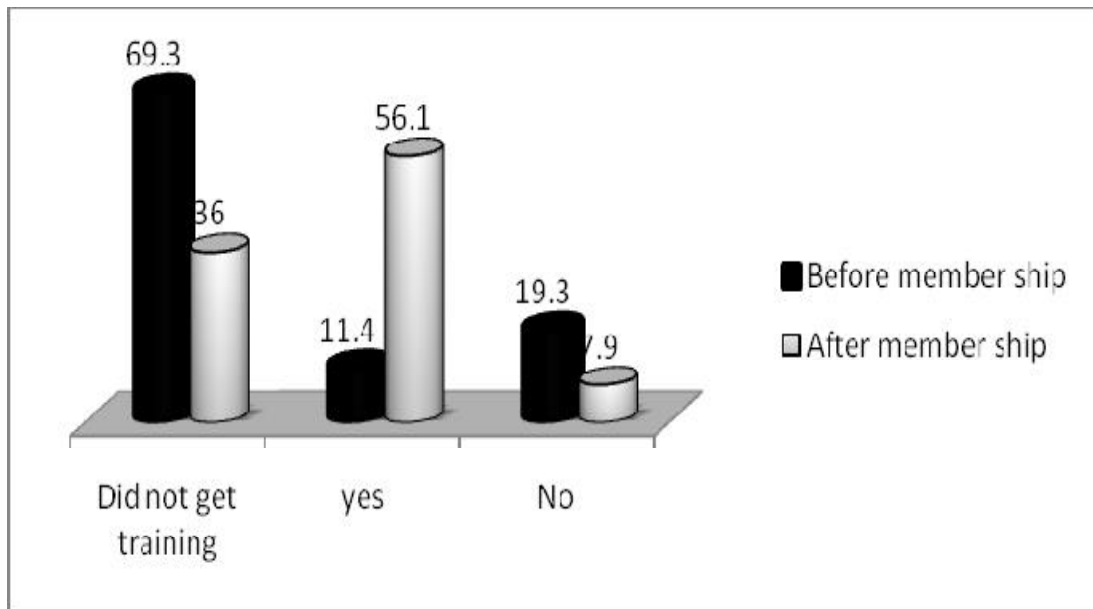
### 3.4 Contribution of Grain Marketing Cooperatives to the Members in Improving their Economic Status

Housing type is one of the indicators in the study area for wealth or increment of income. In relation to housing 37.7% of the members had grass-roof house whereas, 62.3% of the members had Iron-sheet house before membership respectively. After membership 5.3% and 94.7% of the members had grass-roof house and iron-sheet house respectively. Mean comparison was also made to see the livestock holding difference between before and after membership using t-test. The mean livestock holding before membership and after membership was 5.92 and 7.12 respectively. It has significant mean difference at  $P < 0.01$  and it implies that cooperative membership contributes to own more livestock number (Table 2). The finding is supported by Aduana [8] that indicates the cooperative members realized the advantage of saving in kind. Zelalm [9] also concluded that member's participant in cooperatives produce higher amount of grain, they have also large amount of crop land and higher number of oxen than those of non members.

Table 1. Availability and sources of market information (n=114)

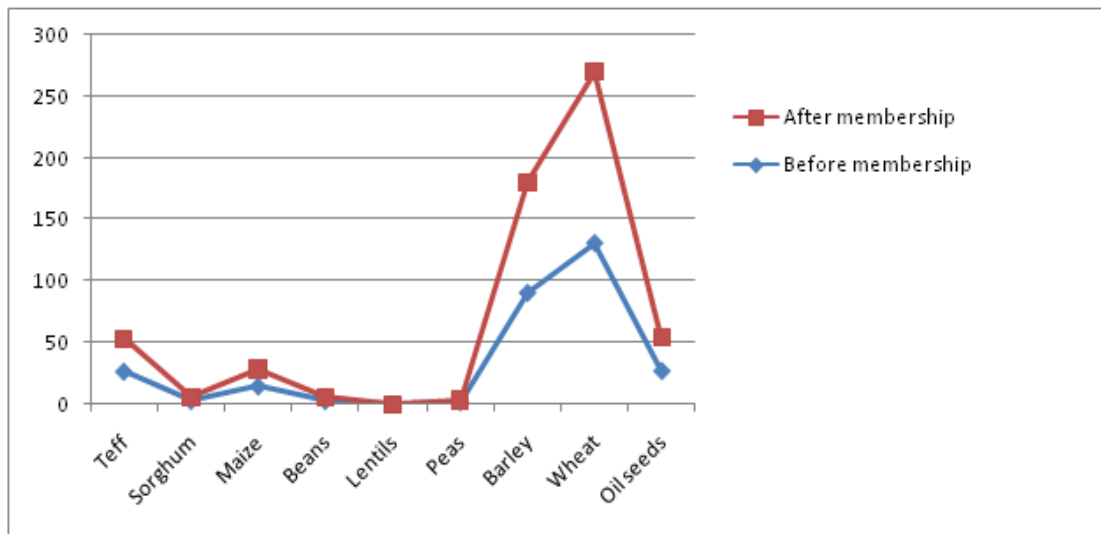
| Response                           | Access to market information |                      |               |                   |   |
|------------------------------------|------------------------------|----------------------|---------------|-------------------|---|
|                                    | Before membership (%)        | After membership (%) | $\chi^2$      |                   |   |
| yes                                | 78.1                         | 93.0                 | 0.001***      |                   |   |
| No                                 | 21.9                         | 7.0                  |               |                   |   |
| Sources of market information in % |                              |                      |               |                   |   |
| Category                           | No source of information     | Cooperatives         | Local traders | Extension workers | Both extension Workers and cooperatives |
| Before membership                  | 19.3                         | 0.9                  | 32.5          | 47.4              | -                                       |
| After membership                   | 4.4                          | 78.9                 | 8.8           | 6.1               | 1.8                                     |

\*significant at  $P < 0.01$ ; Source: Field survey, 2014



**Fig. 1. Distribution of respondents by the status of training service**

Source: Field survey, 2014



**Fig. 2. Grain production trends**

Source: Field survey, 2014

### 3.5 Contribution of Grain Marketing Cooperatives to the Members in Accessing Farm Land

Grain marketing cooperatives motivated the members to produce more crop production. As a result, the number of farm land owner increased from 90.4 to 92.1% after membership.

The farm land ownership was increased due to contracting in of farm land. As of focus group discussion, farmers demanded additional farm land in the form of contract due to shortage of farm land, availability of extra labour force in the family, desire to have additional income and better economic position for their livelihood.

**Table 2. Economic status of respondents before and after membership (n=114)**

|                        | Before membership   | After membership    | t-value  | Sig.     |
|------------------------|---------------------|---------------------|----------|----------|
| Livestock holding      | M=5.9218<br>SD=1.87 | M=7.1218<br>SD=1.92 | -6.793   | 0.001*** |
| Ownership of farm land |                     |                     | $\chi^2$ |          |
| Yes                    | 90.4%               | 92.1%               |          |          |
| No                     | 9.6%                | 7.9%                | 0.002    |          |

\*significant at  $P < 0.01$ ; Source: Field survey, 2014

### 3.6 Contribution of Grain Marketing Cooperatives to Members in Accessing Credit

Credit facility is one of the ways to support farmers to increase production and productivity. As depicted in Table 3 about 51.8% of the respondents utilize credit before membership to purchase agricultural inputs and for other social activities, where as 48.2% of the respondents did not utilize credit because of inaccessibility of credit service, fear to pay loan and lack of collateral. On the other hand, 52.6% of the respondents utilized credit after membership for agricultural inputs, iron-sheet for the construction of house, fattening and social activities, whereas, 48.4% of the respondents did not utilize credit because of risks associated with the loan. Though there is no significant difference in use of credit before and after membership, relatively, there was an improvement in using credit compared to before membership.

**Table 3. Credit and saving amount in average per annum (n=114)**

|     | Credit availability (%) |                  |          |
|-----|-------------------------|------------------|----------|
|     | Before membership       | After membership | $\chi^2$ |
| Yes | 51.8                    | 52.6             |          |
| No  | 48.2                    | 48.4             | 0.548    |

Source: Field survey, 2014

### 3.7 Grain Marketing Cooperatives Distribution of Dividend to the Members

One of the benefits that members get from their cooperative is dividend. Almost all members got dividend in the past five years. Cooperative market participants were encouraged to participate in cooperative marketing by the dividend they earned from the cooperative. The base for the dividend distribution was amount of grain sold to the cooperative and the amount of share they have in the cooperative. It indicates that the more the members participate in their cooperatives the more they get dividend from

their cooperatives. Zelalem [9] research finding also indicates that cooperative market participants are encouraged to participate in cooperative marketing by the dividend they earned from participation.

### 3.8 Contribution of Grain Marketing Cooperatives to the Members in Building Social Capital

One of the benefits of local institutions is creating social capital, creating trust and increasing intimacy among the members and the community as a whole. As indicated in Fig. 3, about 34.2% of the respondents have strong trust on the management body, 48.2% agreed on moderately have trust on the management body, 13.2% poorly agreed on the trust they have on the management body and 4.4% did not have trust on the management body of their cooperative. Most of the members of this grain marketing cooperatives had moderate trust on the management body. Generally, 96.5% of the members have strong feeling to continue their membership but 3.5% of the members need to terminate their membership from the cooperative because of lack of trust on the management committee and their assumption on nepotism on training and exposure visit. Focus group discussion and key informants interview realized that grain marketing cooperatives have good performance in building social capital in the cooperatives among members, non-members, management body and among management committee. Similarly, the cooperatives had strong relationship with government body, non government organization, among cooperatives, financial institutions etc than other type of cooperatives. Women members were also empowered and promoted through facilitating training programs and exposure visits, facilitating credit services and bringing them to leadership. As a result, there is a positive change in social capital after membership. The finding also coincides with Reynolds [2] that indicates cooperatives devolve decision making to the community level, build social capital, community spirit and pride

**Table 4. Partial budgeting proportion (n=114)**

| Column 1                                 |                  |                   | Column 2                               |                  |                   |
|--|------------------|-------------------|--|------------------|-------------------|
| Added cost(*Birr)                        | After membership | Before membership | Additional return (Birr)               | After membership | Before membership |
| Purchase of agricultural inputs          | 2280             | 1200              | Sales of grain                         | 4000.25          | 2400.55           |
| Transportation cost (for input)          | 15.15            | 35.20             | Patronage gained                       | 310              |                   |
| Other costs related to transportation    | 10.60            | 30                | Other returns                          | 60.20            |                   |
| Warehouse/store expensed                 |                  | 10                |  |                  |                   |
| Total average expenses before membership |                  | 1275.30           | Total average income before membership |                  | 2400.55           |
| Total expenses after membership          | 2305.85          |                   | Total income after membership          | 4400.45          |                   |

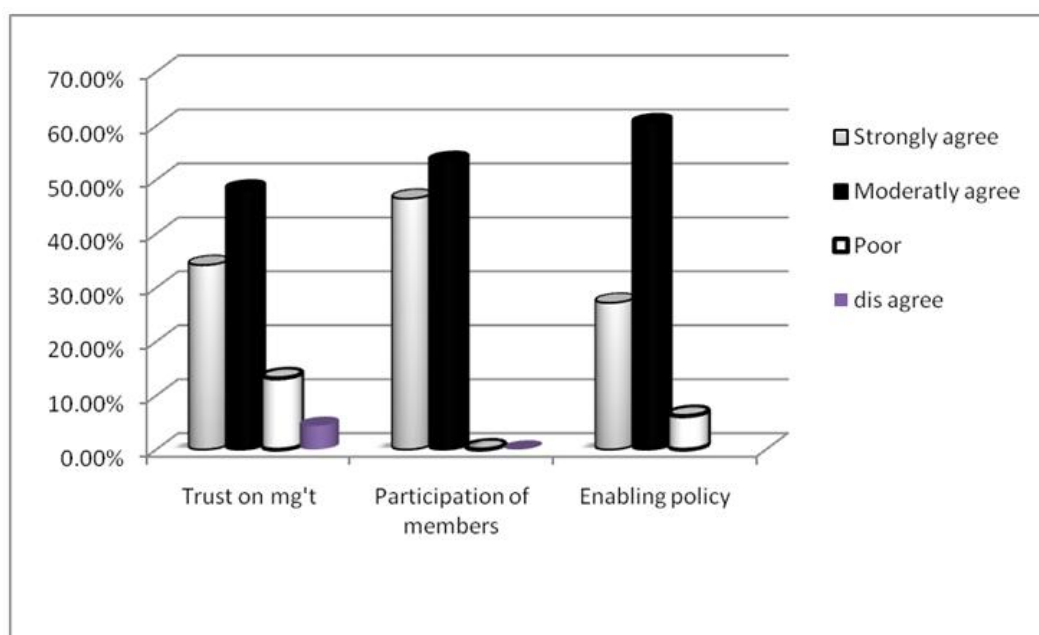
Source: Field survey, 2014

Net income after membership (4400.45-2305.85 =2094.5)

Net income before membership (2400.55- 1275.30=1125.25)

Incremental net benefit (2094.5-1125.25=969.35 Birr) \*(1US dollar= 19 Birr)





**Fig. 3. Cooperative members feeling about their cooperative management**

Source: Field survey, 2014

### 3.9 Financial Benefit of Grain Marketing Cooperative

Financial benefit of grain marketing cooperative was analyzed considering expenses related to purchases of agricultural inputs, transportation cost related to transporting the grain to the market place/rent of care or rent for donkey or horse/, income from sales of grain, warehouse expenses and other expenses before membership and after membership. The total cost before and after membership was 2305.85 and 1275.30 \*Birr respectively. The incremental benefit was 969.25 Birr (Table 4). It implies that members of cooperative is more profitable compared to non-members of cooperative.

## 4. CONCLUSION

Members of grain marketing cooperative have got social, economic and financial benefits. The cooperative increased the benefits of the members through establishing grain storing warehouses near to the farm and purchasing grains from members; increasing skills of members through training and exposure visits; strengthening social relation or social intimacy through providing services for the community and creating relation with other social institutions; increasing bargaining power through purchasing

grains from members and storing till price increase; decreasing vulnerability and risks related to grain; empowering women's; creating employment opportunity etc. Grain marketing cooperative is a remunerative business. The incremental benefit of being grain marketing cooperative member was also 969.25 Birr. For more improvement, cooperative promotion offices, research and NGOs need enhancing cooperatives through research and promotion activities on designing a system for value chain or market chain, selecting available service diversification; strengthening coordination and building the capacity of members for maintaining the quality of the production. Further study is also required on measuring members' satisfaction in grain marketing cooperative services.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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