Score card approach to measuring sustainability of selected cooperatives in West Shoa Zone, Oromia Regional State, Ethiopia

Enfoque de tarjeta de puntuación para medir la sostenibilidad de cooperativas seleccionadas en la zona de West Shoa, estado regional de Oromia, Etiopía

CIRIEC-UNED 2021-133-124 DOI: 10.22458/rna.v12i2.3844

Muthumariappan Karthikeyan Ph.D.
Wollo University, College of Business & Economics, Professor, Dept. of Cooperatives, Ethiopia
mkeya2003@gmail.com,
https://orcid.org/0000-0001-8171-6868

Received: April 12, 2021 **Accepted: September 13, 2021**

ABSTRACT:
The present paper analyzed the economic, social, and environmental dimensions of cooperatives sustainability and examined the sustainability oriented competitive strategies adopted by sample cooperatives. Field survey method will be followed. Multi-stage sampling method was adopted to select study area, cooperatives and respondents. Six cooperatives and by adopting PPS 100 members were selected. The sustainability score card approach advocated by Measuring Cooperative Difference Research Network (MDCRN), Canada and Morris Inequality Index were used. The result shows that the agricultural cooperatives do have better position with economic sustainability, to some extent social sustainability, but they do not have favourable situation in environmental sustainability so that the cooperatives are located at moderate and low level of sustainability condition. With regard to comprehensive cooperative sustainability the same result is seen among sampled cooperatives. Sustainability level and ranking are in consonance with the strategies they adopted and right strategy at right time effectively is advocated.

RESUMEN:
El presente documento analizó las dimensiones económicas, sociales y ambientales de la sostenibilidad de las cooperativas y examinó las estrategias competitivas orientadas a la sostenibilidad adoptadas por las cooperativas de la muestra. Se utilizo el método de la encuesta de campo. Se adoptó el método de muestreo de etapas múltiples para seleccionar el área de estudio, las cooperativas y los encuestados. Se seleccionaron seis cooperativas y mediante la adopción de PPS 100 miembros. Se utilizó el enfoque de la tarjeta de puntuación de sostenibilidad promovido por la Red de Investigación de la Diferencia Cooperativa de Medición (MDCRN), Canadá y el Índice de Desigualdad de Morris. El resultado muestra que las cooperativas agrícolas sí tienen mejor posicionamiento con sustentabilidad económica, en cierta medida sustentabilidad social, pero no tienen situación favorable en sustentabilidad ambiental por lo que las cooperativas se ubican en condición de nivel moderado y bajo de sustentabilidad. Con respecto a la sostenibilidad cooperativa integral, se observa el mismo resultado entre las cooperativas incluidas en la muestra. El nivel de sostenibilidad y la clasificación están en consonancia con las estrategias que adoptaron y se promueve la estrategia correcta en el momento adecuado.

KEY WORDS:
SUSTAINABILITY, ECONOMIC, SOCIAL, ENVIRONMENTAL, SCORE CARD

PALABRAS CLAVES:
SOSTENIBILIDAD, ECONOÍIA, SOCIAL, MEDIO AMBIENTE, TARJETA DE PUNTUACIÓN.

RÉSUMÉ

Ce document analyse les dimensions économiques, sociales et environnementales de la viabilité des coopératives et examine les stratégies compétitives axées sur la durabilité adoptée par les coopératives de l'échantillon. La méthode de l'enquête sur le terrain a été utilisée. La méthode d'échantillonnage à étapes multiples a été adoptée pour sélectionner le domaine d'étude, les coopératives et les répondants. Six coopératives ont été sélectionnées et grâce à l'adoption de PPS 100 membres. L'approche du tableau de bord de la durabilité promue par le Réseau de recherche sur la différence de mesure coopérative (MDCRN), le Canada et l'Indice des inégalités de Morris a été utilisée. Le résultat montre que les coopératives agricoles ont un meilleur positionnement avec la durabilité économique, dans une certaine mesure la durabilité sociale, mais elles n'ont pas de situation favorable en matière de durabilité environnementale, de sorte que les coopératives se situent dans une situation de niveau modéré et faible de durabilité. En ce qui concerne la durabilité coopérative intégrée, le même résultat est observé pour les coopératives de l'échantillon. Le niveau de durabilité et la classification sont conformes aux stratégies qu'ils ont adoptées et la bonne stratégie est promue au bon moment.

MOTS-CLÉS:

DURABILITÉ, ÉCONOMIE SOCIALE, ENVIRONNEMENT, TABLEAU DE BORD.

RESUMO:

O presente documento analisou as dimensões econômica, social e ambiental da sustentabilidade cooperativa e examinou as estratégias competitivas orientadas para a sustentabilidade adotadas pelas cooperativas da amostra. Foi utilizado o método de enquete de campo. O método de amostragem em múltiplos estágios foi adotado para selecionar a área de estudo, as cooperativas e os pesquisados. Seis cooperativas foram selecionadas e por meio da adoção do PPS 100 membros promovidos pela Rede de Investigação da Diferença Cooperativa de Medição (MDCRN), Canadá e o índice de Desigualdade de Morris. O resultado mostra que as cooperativas agrícolas possuem uma posição melhor com sustentabilidade econômica, em certa medida sustentabilidade social, mas não possuem uma situação favorável na sustentabilidade ambiental, portanto as cooperativas estão localizadas em uma condição de nível moderado e baixo nível de sustentabilidade. No que se refere à sustentabilidade de cooperativa integral, o mesmo resultado é observado entre as cooperativas incluídas na amostra. O nível de sustentabilidade e a classificação estão em consonância com as estratégias adotadas e a estratégia certa é promovida no momento certo.

PALAVRAS-CHAVES:

SUSTENTABILIDADE, ECONOMIA, SOCIAL, MEIO AMBIENTE, CARTÃO DE PONTUAÇÃO.

INTRODUCTION

Background and Justification

Cooperatives are an old idea, but one that is more relevant than ever if we look ahead at the development challenges and opportunities the world faces over the coming decades. As the United Nations are about to agree Sustainable Development Goals which will set a global agenda, there is a real chance to make extreme poverty and deprivation history, to secure social inclusion and to reconcile economic and social objectives. In tackling all of these challenges, cooperatives can play a valuable role in turning the tide. Many of the poor and excluded are reached neither by conventional markets for goods and services nor by government. Cooperatives and other social economy enterprises have shown that they have the necessary reach.

A recent study by the ILO and the International Cooperative Alliance (ICA) "Cooperatives and Sustainable Development Goals" highlights the contributions that cooperative enterprises are making to sustainable development and their potential to do much more: from creating employment and enhancing gender equality to providing clean energy and financial inclusion to ensuring food security and extending social protection. Many of the working poor, the hungry and the excluded are rural workers, often smallholder farmers. Cooperatives have an outstanding track record in overcoming multiple forms of exclusion in rural areas, but not only there. Cooperatives are present in all sectors of the economy and adaptable to a range of contexts. They respond to the triple bottom line of sustainable development: economic development, social justice, and environmental protection. For all these reasons, cooperatives are very much enterprises of the future which play an essential role in complementing conventional markets and government action. This is acknowledged explicitly in the outcome document of the Rio+20 Conference 'The future we want'. The international community should bear this in mind when setting out the strategies and the means through which the Sustainable Development Goals can be realized (ILO, 2014).

Studies have shown that the cooperative enterprises across sectors have continued to grow and prosper during the financial crisis, and this is reaffirmed by the survey results. Among the respondents 68 per cent observed that the number of cooperatives has grown in their country or region during the past decade; 63 per cent noted that individual membership in cooperatives has increased; and 57 per cent perceived the number of people employed by cooperatives as having risen (ICA, 2011).

Statement of the Problem

Cooperatives of the past were heavily criticized for being inefficient, discriminatory against the poor and women and institutions rife with corruption. Their record of success and sustainability varies across countries and sectors. As late as 1993, a World Bank (WB) review of cooperatives concluded they were not viable organizations due to inappropriate policy frameworks, excessive government interference and insufficient farmer capacity building (Rondot, 2004). However, the end of the Cold War, Structural Adjustment Programmes (SAPs) and a dramatically altered political economy have had significant impact on the structure and organization of cooperatives. Moreover, evidence suggests that group projects are increasingly relied upon by national governments, bi- and multi-laterals and non-governmental agencies (NGOs) as the preferred model for rural development project implementation and poverty alleviation (Grootaert, 1998; Harris & de Renzio, 1997; World Bank, 1997). Thus, despite their meagre performance, the WB claims that they remain 'the preferred form of organization, and perhaps the only organization with which rural people are familiar' (Hussi *et al.*, 1993).

Inadequate enabling environment for cooperative development in many countries, either due to restrictive laws and regulations stemming from a legacy of state control, or from the absence of a cooperative legal framework 63 per cent of respondents observed that government support to cooperatives had either remained the same or declined in the past decade; Cooperatives' limited engagement in articulating a global vision for sustainable development 29 per cent of respondents institutions' contributions to sustainable development were reported to be at local and 35 per cent at national level, compared to 19 per cent at regional and 17 per cent at international level; and Persistent misconceptions on the cooperative business model among employers' organizations, trade unions as well as research institutions, despite positive evidence on cooperatives' contributions (ILO, 2013).

The success of cooperatives is in essence a function of three overlapping factors: its internal activities and operations; the wider policy environment; and local, national and international markets (Hedlund, 1988). Internal organization and structures can be sound; but the wider policy environment can encourage or discourage organization and provide incentives or disincentives for people to work collectively (Grootaert, 1998; Harris & de Renzio, 1997). National governments play an important role in formulating policies that encourage the growth and restructuring of cooperatives.

The unpredictable natures of markets in which commodities are traded have enormous impact on the success of cooperatives. Hedlund (1988) insightfully illustrates this point in his historical review of a coffee cooperative in Kenya, when he describes cooperatives as 'two opposing organizational factors'. One is local participation, 'which allows for members' influence and thus facilitates order and continuity'. The second is 'the world market with its uncontrollable development, representing disorder and discontinuity'. For example, though a cooperative can be instrumental in negotiating higher prices for coffee and increasing production, higher exports do not translated into higher incomes for smallholder farmers because of depressed world market prices. This is not a shortcoming of the cooperative, but an outcome of structural issues in the macro environment. Thus it is the precarious balance and management of these two pressures which shape and can ultimately determine the performance of the cooperative.

The legacy of past problems and more recent challenges including conflict, HIV/AIDS, rural poverty, underdevelopment, and unfair trade policies plague modern-day cooperatives in developing countries, threatening their ability to survive as viable commercial enterprises. Newly revived cooperatives are operating in an environment characterized by declining terms of trade, lack of market access, and unjust agricultural trade policies. For example, subsidized commodities from industrialized countries are displacing producers in many countries, affecting farmers' competitive advantage and ability to serve local or national markets. The new food system is disproportionately, and negatively, affecting the livelihoods of many smallholder farmers. Economically, cooperatives are looked upon to facilitate the integration of small-scale farmers into local, regional and even international markets: they are a link between rural societies and the larger economy. Many restructured cooperatives are still in the nascent stage; thus it is difficult to predict their capacity to overcome these tremendous problems.

Under-capitalization and poor financial, accounting and management skills in cooperatives remain a challenge. In some countries, the government still maintains a paternalistic relationship with cooperatives. In others, cooperatives are heavily dependent on NGOs for credit, training and other technical support. The inherent contradiction between cooperatives' social and economic objectives is a problem (Jiggens, 1988; Lele, 1981; Braverman *et al.*, 1991) for which the literature does not propose a clear solution. The dilemma is managing the balance between poverty-alleviation, promotion of social welfare, and equity —while building competitive, profit-oriented private sector institutions.

Cooperative revitalization programs in countries such as Ethiopia heavily stress sustainability and provide business skill training for the leadership and management. Cooperatives are business entities, by nature socially responsible and eco-friendly enterprises. Moreover, cooperatives lag behind in advancing a comprehensive sustainability agenda. It is a high time to have an attempt to investigate sustainability of cooperatives by considering three dimensions economic, social, and environmental sustainability. Hence this research study.

Objectives

General Objective

- To undertake a comprehensive survey on cooperatives sustainability.

Specific Objectives:

- To analyze the economic, social, and environmental dimensions of cooperatives sustainability.
- To assess the cooperatives sustainability level by ranking among cooperatives in the study area.
- To examine the sustainability oriented competitive strategies adopted by sample cooperatives.

Research Questions

- Are cooperatives sustainable in terms of economic, social, and environmental dimensions?
- What is the cooperatives sustainability level by ranking?
- How do cooperatives adopt sustainability oriented competitive strategies?

REVIEW OF LITERATURE

Cooperatives and Sustainability

In a general sense, sustainability is the capacity to support, maintain or endure. Since the 1980s, the concept of sustainability has evolved to mean the integration of environmental, economic and social dimensions. Co-operatives here again are the forerunners of modern sustainability. By placing human need at their centre, they respond to today's crises of sustainability and deliver a distinctive form of shared value. According to Todor Ivanov – Secretary-General of Euro Coop, "With concern for the community a founding principle, sustainability underpins everything co-operatives do. By looking beyond the short-term goal of maximising profit regardless of the consequences, many are starting to look to our model of business as an alternative to traditional forms."

One of the goals of the International Co-operative Alliance's Blueprint for a Co-operative Decade is to "position co-operatives as builders of sustainability". The co-operative sector needs to explain and show to the world that sustainability is part of its intrinsic nature, and that co-operative enterprises make a positive contribution to sustainability.

As part of this, the Alliance commissioned a scan of co-operatives from different sectors and regions around the world to see how closely linked they are to sustainability. The report concluded that co-operatives embed sustainability into their operating model and values and that the United Nations can and should recognise this. Indeed, in a resolution adopted in December 2001, the UN urged governments to encourage and facilitate "the establishment and development of co-operatives, including taking measures aimed at enabling people living in poverty or belonging to vulnerable groups to engage on a voluntary basis in the creation and development of co-operatives".

The International Cooperative Alliance (ICA) held their annual conference in Cape Town during November 2013. One the presentations at this conference included reporting on the results of a partnership project, between Community Research Connections and the Sustainability Solutions Group that investigated the relationship between the cooperative model and sustainable development. This research employed a unique methodology to compare key concepts distilled from seminal literature on sustainability to (firstly) the cooperatives principles and (secondly) websites and annual reports from various cooperatives around the world. As this was a global scan, the study was limited in the manner that it did not visit the cooperatives on-the-ground and thus could not validate whether cooperatives are actually acting in a sustainable manner; however, this work served as an initial step to see if cooperative model inherently leads to thinking and speaking about sustainability. Some of the main observations from the research include: Co-operatives are involved in the social, economic and environmental dimensions of sustainability; the co-operative principles are more closely aligned with the social dimensions of sustainability; similarly, co-operatives websites and annual reports (overall) most strongly related to social aspects of sustainability;

in communicating their efforts on sustainability, co-operatives understate their efforts on Principles 1, 2 and 3; a co-operative is sustainable when it is an economically viable business that fully implements the seven co-operative principles with socially responsible, and maintains or regenerates the ecosystem in which they are embedded; co-operative associations lag behind co-operatives in advancing a comprehensive sustainability agenda; of the cooperative principles, concepts related to principle 5 (education, training, knowledge sharing), principle 6 (cooperation among cooperatives), and principle 7 (sustainable community development) were strongly communicated; cooperatives websites highlighted sustainability concepts, whereas in the annual reports, sustainability concepts were discussed in context with items (e.g., items relating business operations) (CRC, ICA 2013).

Perusal of the literature available it is understood that there are few studies undertaken related to sustainability of cooperatives. Moreover, a comprehensive research on cooperatives sustainability by considering economic, social, and environmental dimensions of cooperative sustainability is absent in Ethiopian context, and hence this research study.

MATERIALS AND METHODS

Description of Study Area

General Features of West Shoa zone

West Shoa Administrative zone is one of the 18 zones of Oromia regional state.

Location

Located between astronomical grids of 8056'N-9056'N latitude and 37017'E-38^{0}45'E longitude. It extends from North to South and East to West 310 km and 200km respectively.

Boundaries

It is bounded by:

- East Wellega and Horo Guduru Wellega zone in the West and North West.
- Jimma zone in the South West.
- South west Shoa zone in the South & South East.
- Oromia special zone surrounding Finfinnee city in the east.
- North Shoa zone in the East and North.

Administrative divisions

-18 districts and Ambo town administration (level B), 529 rural and 36 urban kebeles.

- 27 different level town administrations.

TOTAL AREA OF THE ZONE

- 14,921.19km2 constituting 4.15 percent of the region's total area.
- The largest district is G/Beret and the smallest is Tikur Inchini.

Elevation

- Varies from 1000-3500 meters above sea-level.

Climatic division

- Tropical, warm & temperate.
- Distribution of mean annual rainfall fluctuates between 813.2-1,699mm.

Natural resources

- The zone is endowed with many minerals and natural resources.

Some of the identified minerals include:

- Gravel -Mineral water -Granite -Salt
- Sand -Ambo Sand stone -Sulpher -Pumice
- Ignim brite -Silicate -Gold -Lime stone
- Scoria -Gypsum -Coal -Millstone
- Basalt -Iron -Marble -Crude oil

-Gun powder

- The zone has three drainage basins, Abay, Gibe and Awash Rivers.

Soil type

- Rend zinans.
- Haplic and luvic phaeozems.
- Chromic and orthic luvisols.
- Dystric nitosols.
- Chromic and Pellic vertisols.

Most of the soils of the zone have good agricultural potential.

Population

As per the population and housing census conducted in 1999, and projected in 2002 the population of the zone is **2,134,359** out of which over **1,736,244** (88.7 %) are rural and **221,634** (11.3 %) live in urban area.

Materials (facilities)

The study was undertaken by survey method with both quantitative and qualitative approach whereby primary data were collected from members of cooperatives, KIIs, and FGD participants. For this purpose, a Semi-Structured Interview Schedule were prepared and administered as a data collection instrument, and Checklist was used to elicit information from KIIs (Woreda and Zonal Cooperative Promotion Bureau officials) and FGD participants (management committee of selected cooperatives).

METHODOLOGY

Since the proposal intends to analyze the sustainability of cooperatives, field survey method was followed. Multi-stage sampling method was adopted to select study area, cooperatives and respondents. At the first stage, among 18 woredas in west shoa zone, Dendi woreda was selected based on the justification that there is high concentration of agricultural cooperatives. At the second stage with the justification of more membership, access and availability of data, out of 23, six cooperatives were selected. The sample respondents' size was determined by Taro (1967) formulae as below:

$$n = \frac{N}{1+N(e)^2} = \frac{N}{1+N(e)^2}$$

$$n = \frac{7611}{1 + 7611\ (0.1)^2}$$

$$n = \frac{7611}{77.11}$$

n = 98.70, by adding and rounding off = 100

95 % confidence level and p=0.5 are assumed

The sample size was 100, and adopting PPS members from each cooperative were selected.

Table 1: Sample Cooperatives and Respondents

S.No	Name of the Cooperative	Male	Female	Total	Sample
1	Gabaa Dilbataa	1482	83	1565	21
2	Oolankomii	1477	45	1522	20
3	Waamuraa Meexxii	1189	51	1240	16
4	Boddaa	1053	61	1114	15
5	Asgorii	1095	80	1175	15
6	Barooda Laga Baatuu	936	39	975	13
	Total	7232	379	7611	100

Source: Dendi Woreda Cooperative Promotion Office, 2016

Method of data Analysis

The data were analyzed by using both quantitative and qualitative approach. The sustainability of cooperatives was analyzed by sustainability score card approach advocated by Measuring Cooperative Difference Research Network (MDCRN), Canada with sustainability Indicators which are combined sets of environmental, economic and social performance indicators. For analysis, descriptive statistics like frequency, percentage, and mean was used.

Moreover, for data analysis and assessment of sustainability level for ranking of cooperatives, Morris Inequality Index was used. This index is among the newest formal model used in world. In Morris model using available information for each cooperative, developmental condition (sustainability) of each cooperative according to each of selected index was identified and finally the mean of index sum using development index analyse method was determined simply but in fitted way. Then it dealt with to rank the cooperatives. The calculation manner of this index is as follow:

$$Y_{ij} = \frac{X_{ij} - X_{ij}(\min)}{X_{ij}(\max) - X_{ij}(\min)} \times 100$$

Where, Xij (min) and Xij (max) are the lowest and highest values the variable X can attain, respectively. Yij is Morris Inequality Index for each variable and Xij is amount of variable in each cooperative.

The important point in this model is that the applied indexes must be homodirection. The main developmental index may calculate through this formula:

$$DI = \frac{\sum_{i=1}^{n} y_{ij}}{n}$$

Where, n is the number of the studied indexes and DI is the main developmental index. Morris Inequality Index ranges between 0 and 100 where it is closer to 100, the more is development range ie., sustainability level.

For analysing coop sustainability, different attributes were studied under each sustainability dimension of cooperatives. To assess coop sustainability level, Morris Inequality Index was used. The results from Morris Inequality Index indicated that economic sustainability of agricultural cooperatives which were estimated based on certain attributes based on 36 statements, was ranging from a minimum of 20 % to a maximum of 87 %, so that sampled cooperatives were allocated the least and the most economic sustainability index, respectively. The social sustainability of agricultural cooperatives was estimated based on certain attributes based on 25 statements, was ranging from a minimum of 20 % to a maximum of 81 %, so that sampled cooperatives were allocated the least and the most social sustainability index, respectively. In the same way the environmental sustainability of agricultural cooperatives was estimated based on certain attributes based on 29 statements, was ranging from a minimum of 17 % to a maximum of 53 %, so that sampled cooperatives were allocated the least and the most environmental sustainability index, respectively. The overall cooperative sustainability of agricultural cooperatives was estimated based on average score percentage of three sustainability dimensions, was ranging from a minimum of 19 % to a maximum of 69 %, so that sampled cooperatives were allocated the least and the most economic sustainability index, respectively. So, separate index was developed for each sustainability dimension to have level and rank for sampled cooperatives, and arriving at average score percentage the cooperative sustainability level and ranking were given to cooperatives. According to development coefficient (each sustainability dimension and overall coop sustainability), agricultural cooperatives were classified into five levels: sustainable (80-100), slightly sustainable (60-79), moderate (40-59), slightly unsustainable (20-39) and unsustainable (0-19). Ranking was given in the order the cooperatives percentage scored for each sustainability dimension and overall coop sustainability. Sustainability oriented competitive strategies were examined by descriptive statistics based on the responses given by the respondents. The sequence / order of cooperatives can be seen as in the order listed in the sampling table1.

Results and Interpretation

Table 2: Economic Sustainability Dimension of Cooperatives

Coop Level	Coop 1	Coop 2	Coop 3	Coop 4	Coop 5	Coop 6	All coops
Low (1-60)	-	-	-	-	-	-	-
Medium (61-120)	0 (0.0)	0 (0.0)	16 (44.4)	01 (02.8)	15 (41.7)	04 (11.1)	36 (36.0)
High (121-180)	21 (32.8)	20 (31.3)	0 (0.0)	14 (21.9)	0 (0.0)	09 (11.1)	64 (64.0)
Total	21	20	16	15	15	13	100

Figures in brackets are percentage to row total

Table 2 reveals the economic dimension of cooperative sustainability of sampled agricultural cooperatives as opined by the member respondents. Coop 1, Coop 2, Coop 4, and Coop 6 are at the high level of cooperative sustainability in terms of economic dimension followed by Coop 3 and Coop 5 at the medium level. As for all cooperatives, majority 64 percent of the respondents opined that their cooperatives are at high level of cooperative sustainability in terms of economic dimension.

Table 3: Social Sustainability Dimension of Cooperatives

Coop Level	Coop 1	Coop 2	Coop 3	Coop 4	Coop 5	Coop 6	All coops
Low (1-42)	0 (0.0)	0 (0.0)	16 (43.2)	01 (02.7)	15 (40.5)	05 (13.5)	37 (37.0)
Medium (43-82)	21 (33.3)	20 (31.7)	0 (0.0)	14 (22.2)	0 (0.0)	08 (12.7)	63 (63.0)
High (83-125)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Total	21	20	16	15	15	13	100

Figures in brackets are percentage to row total

Table 3 reveals the social dimension of cooperative sustainability of sampled agricultural cooperatives as opined by the member respondents. Coop 1, Coop 2, Coop 4, and Coop 6 are at the medium level of cooperative sustainability in terms of social dimension followed by Coop 3 and Coop 5 at the low level. As for all cooperatives, majority 63 percent of the respondents opined that their cooperatives are at medium level of cooperative sustainability in terms of social dimension.

Table 4: Environmental Sustainability Dimension of Cooperatives

Coop Level	Coop 1	Coop 2	Coop 3	Coop 4	Coop 5	Coop 6	All coops
Low (1-48)	21 (31.3)	20 (29.9)	01 (01.5)	15 (22.4)	02 (03.0)	08 (11.9)	67 (67.0)
Medium (49-98)	0 (0.0)	0 (0.0)	15 (45.5)	0 (0.0)	13 (39.4)	05 (15.2)	33 (33.0)
High (99-145)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Total	21	20	16	15	15	13	100

Figures in brackets are percentage to row total

Table 4 reveals the environmental dimension of cooperative sustainability of sampled agricultural cooperatives as opined by the member respondents. Coop 3, and Coop 5 are at the medium level of cooperative sustainability in terms of environmental dimension followed by Coop 1, Coop 2, Coop 4, and Coop 6 at the low level. As for all cooperatives, majority 67 percent of the respondents opined that their cooperatives are at low level of cooperative sustainability in terms of environmental dimension.

Table 5: Overall Coop Sustainability of sampled cooperatives

Coop Level	Coop 1	Coop 2	Coop 3	Coop 4	Coop 5	Coop 6	All coops
Low (1-42)	0 (0.0)	0 (0.0)	16 (55.2)	0 (0.0)	12 (41.4)	01 (03.4)	29 (29.0)
Medium (143-285)	21(29.6)	20 (28.2)	0 (0.0)	15 (21.1)	03 (04.2)	12 (16.9)	71 (71.0)
High (285-427)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Total	21	20	16	15	15	13	100

Figures in brackets are percentage to row total

Table 5 reveals the overall cooperative sustainability of sampled agricultural cooperatives as opined by the member respondents. Coop 1, Coop 2, Coop 4, and Coop 6 are at the medium level of overall cooperative sustainability followed by Coop 3 and Coop 5 at the low level. As for all cooperatives, majority 71 percent of the respondents opined that their cooperatives are at medium level of overall cooperative sustainability.

Table 6: Economic Sustainability level and ranking of sampled cooperatives

Level of Economic Sustainability	Agricultural Coops (% SCORE / RANK)
Sustainable (80-100)	Coop 1 (87 % / 1), Coop 2 (84 % / 2)
Slightly Sustainable (60-79)	Coop 6 (69 % / 3), Coop 4 (62 % / 4)
Moderately Sustainable (40-9)	Coop 5 (42 % / 5)
Slightly Unsustainable (20-39)	Coop 3 (20 % / 6)
Unsustainable (0-19)	---

Figures in brackets are percentage score and rank of agricultural coops

As per the analysis procedures stated in the method of data analysis the cooperatives are categorized into different levels of economic sustainability. The percentage scored and rank are given to each cooperative under study. Table 6 shows the economic sustainability level and ranking of cooperatives. Coop 1 (87 %) and Coop 2 (84 %) are at 'sustainable' range which are ranked as first and second respectively; Coop 6 (69 %) and Coop 4 (62 %) are at 'slightly sustainable' range which are ranked as third and fourth respectively followed by Coop 5 (42 %) as 'moderately sustainable' ranked fifth, and Coop 3 (20 %) as 'slightly sustainable' ranked sixth among achieved level of sustainability of all sampled cooperatives.

Table 7: Social Sustainability level and ranking of sampled cooperatives

Level of Social Sustainability	Agricultural Coops (% SCORE / RANK)
Sustainable (80-100)	Coop 6 (81 % / 1)
Slightly Sustainable (60-79)	Coop 1 (66 % / 2), Coop 2 (62 % / 3)
Moderately Sustainable (40-59)	Coop 4 (53 % / 4), Coop 5 (41 % / 5)
Slightly Unsustainable (20-39)	Coop 3 (20 % / 6)
Unsustainable (0-19)	----

Figures in brackets are percentage score and rank of agricultural coops

As per the analysis procedures stated in the method of data analysis the cooperatives are categorized into different levels of social sustainability. The percentage scored and rank are given to each cooperative under study. Table 7 shows the social sustainability level and ranking of cooperatives. Coop 6 (81 %) is at 'sustainable' range which is ranked first; Coop 1 (66 %) and Coop 2 (62 %) are at 'slightly sustainable' range which are ranked as second and third respectively followed by Coop 4 (53 %) and Coop 5 (41 %) as 'moderately sustainable' ranked fourth and fifth, and Coop 3 (20 %) as 'slightly sustainable' ranked sixth among achieved level of sustainability of all sampled cooperatives.

Table 8: Environmental Sustainability level and ranking of sampled cooperatives

Level of Environmental Sustainability	Agricultural Coops (% SCORE / RANK)
Sustainable (80-100)	----
Slightly Sustainable (60-79)	----
Moderately Sustainable (40-59)	Coop 1 (53 % / 1), Coop 2 (52 % / 2)
Slightly Unsustainable (20-39)	Coop 4 (35 % / 3), Coop 5 (34 % / 4), Coop 6 (26 % / 5)
Unsustainable (0-19)	Coop 3 (17 % / 6)

Figures in brackets are percentage score and rank of agricultural coops

As per the analysis procedures stated in the method of data analysis the cooperatives are categorized into different levels of environmental sustainability. The percentage scored and rank are given to each cooperative under study. Table 8 shows the environmental sustainability level and ranking of cooperatives. Coop 1 (53 %) and Coop 2 (52 %) are at 'moderately sustainable' range which are ranked as first and second respectively; Coop 4 (35 %), Coop 5 (34 %) and Coop 6 (26 %) are at 'slightly unsustainable' range which are ranked as third, fourth, and fifth respectively followed by Coop 3 (17 %) as 'unsustainable' ranked sixth among achieved level of sustainability of all sampled cooperatives.

Table 9: Coop Sustainability level and ranking of sampled cooperatives

Level of Coop Sustainability	Agricultural Coops (% SCORE / RANK)
Sustainable (80-100)	----
Slightly Sustainable (60-79)	Coop 1 (69 % / 1), Coop 2 (66 % / 2)
Moderately Sustainable (40-59)	Coop 6 (59 % / 3), Coop 4 (50 % / 4)
Slightly Unsustainable (20-39)	Coop 5 (39 % / 5)
Unsustainable (0-19)	Coop 3 (19 % / 6)

Figures in brackets are percentage score and rank of agricultural coops

As per the analysis procedures stated in the method of data analysis the cooperatives are categorized into different levels of overall coop sustainability. The percentage scored and rank are given to each cooperative under study. Table 9 shows the overall coop sustainability level and ranking of cooperatives. Coop 1 (69 %) and Coop 2 (66 %) are at 'slightly sustainable' range which are ranked as first and second respectively; Coop 6 (59 %) and Coop 4 (50 %) are at 'moderately sustainable' range which are ranked as third and fourth respectively followed by Coop 5 (39 %) as 'slightly unsustainable' ranked fifth, and Coop 3 (19 %) as 'unsustainable' ranked sixth among achieved level of sustainability of all sampled cooperatives.

Table 10: Cooperative Sustainability Level & Ranking - Score Card Results

Response / Coop	Economic sustainability			Social sustainability			Environmental sustainability			overall coop sustainability		
	Score (%)	Level	Rank	Score (%)	Level	Rank	Score (%)	Level	Rank	Score (%)	Level	Rank
Coop 1	87	S	1	66	SS	2	53	MS	1	69	SS	1
Coop 2	84	S	2	62	SS	3	52	MS	2	66	SS	2
Coop 3	20	SUS	6	20	SUS	6	17	US	6	19	US	6
Coop 4	62	SS	4	53	MS	4	35	SUS	3	50	MS	4
Coop 5	42	MS	5	41	MS	5	34	SUS	4	39	SUS	5
Coop 6	69	SS	3	81	S	1	26	SUS	5	59	MS	3

S-Sustainable (80-100); SS-Slightly Sustainable (60-79); MS-Moderately Sustainable (40-59); SUS- Slightly Unsustainable (20-39); US-Unsustainable (0-19)

Table 10 shows the comprehensive coop sustainability by dimension level and ranking of cooperatives. As far as economic sustainability dimension is concerned, Coop1 is in the most sustainable condition with sustainable level and Coop 3 is the least with the level slightly unsustainable condition, whereas social sustainability dimension the most sustainable is Coop 6 with sustainable level and the least sustainable is Coop 3 with slightly sustainable level. With regard to environmental sustainability dimension Coop 1 is found to be the most sustainable condition with moderate sustainable level and Coop 3 is in the least sustainable condition with unsustainable level. As for comprehensive coop sustainability, Coop 1 (69 %) is at slightly sustainable level with first rank followed by Coop 2 (66 %) at slightly sustainable level with second rank, while Coop 3 is at unsustainable level with sixth rank among achieved level of sustainability of all sampled cooperatives.

Competitive Sustainability Strategies adopted by sampled Cooperatives

As part of data collection process the research team wanted to elicit information on sustainability strategies adopted by the sampled cooperatives assuming and believing that cooperative sustainability level is associated with strategies practiced. Based on literatures reviewed five different sustainability strategies viz., safe, credible, efficient, innovation, and transformation have been used to elicit information on sustainability strategies adopted.

Strategy 'safe' aims at reducing and managing risks; strategies of the type 'credible' are tackling issues of image and reputation; the improvement of productivity and efficiency is possible by implementing the strategy 'efficient'; the 'innovative' strategy aims at differentiating cooperatives' products and services in the market; and 'transformative' strategy aims at creating new markets by shifting existing institutional frameworks.

By administering different statements under each strategy responses were received from the member respondents. In addition, KIIs and FGD results are also supplemented hereunder.

As for 'safe strategy' respondents revealed that Coop 1, Coop 2, and Coop 4 practice at a high level followed by Coop 5 and Coop 6 at moderate level, and Coop 3 at low level. The overall cooperatives on adoption of sustainability strategy 'safe' is 55 percent at high level followed by 32 percent at moderate level.

As for 'credible strategy' respondents revealed that Coop 1, Coop 2, and Coop 4 practice at a high level followed by Coop 6 at moderate level, Coop 3 and Coop 5 at low level. The overall cooperatives on adoption of sustainability strategy 'credible' is 59 percent at high level followed by 21 percent at moderate level, and 20 percent at low level.

As for 'efficient strategy' respondents revealed that Coop 1, Coop 2, and Coop 4 practice at a high level followed by Coop 5 and Coop 6 and Coop 3 at moderate level. The overall cooperatives on adoption of sustainability strategy 'efficient' is 61 percent at high level followed by 32 percent at moderate level.

As for 'innovative strategy' respondents revealed that Coop 1and Coop 2 practice at a high level followed by Coop 3, Coop 4, Coop 5 and Coop 6 at moderate level. The overall cooperatives on adoption of sustainability strategy 'innovation' is 50 percent at high level followed by 40 percent at moderate level.

As for 'transformative strategy' respondents revealed that Coop 1, Coop 2, and Coop 4 practice at a high level followed by Coop 5 and Coop 6 and Coop 3 at moderate level. The overall cooperatives on adoption of sustainability strategy 'transformation' is 60 percent at high level followed by 37 percent at moderate level.

The key informants and FGD participants also reported the same results regarding all sustainability strategies with some difference. With regard to safe, efficient, and innovative strategies Coop 3 was in both moderate and low level of adoption ranging from 25 percent to 38 percent at low level and 62 to 75 percent moderate level of adoption. With regard to innovative strategy Coop 5 was also in both moderate (60 %) and low (40 %) level adoption. Coop 6 was in both high and moderate level of adoption regarding innovative (high 69.2 % and moderate 30.8 %) and transformative (high 76.9 % and moderate 23.1 %) strategies.

Major Findings

Coop Sustainability by dimension

- Majority 64 percent of the respondents opined that their cooperatives are at high level of cooperative sustainability in terms of economic dimension; majority 63 percent of the respondents opined that their cooperatives are at medium level of cooperative sustainability in terms of social dimension; majority 67 percent of the respondents opined that their cooperatives are at low level of cooperative sustainability in terms of environmental dimension; and majority 71 percent of the respondents opined that their cooperatives are at medium level of overall cooperative sustainability.

Sustainability level and ranking of sampled cooperatives

- As for economic sustainability Coop 1 (87 %) and Coop 2 (84 %) are at 'sustainable' range which are ranked as first and second respectively; Coop 6 (69 %) and Coop 4 (62 %) are at 'slightly sustainable' range which are ranked as third and fourth respectively followed by Coop 5 (42 %) as 'moderately sustainable' ranked fifth, and Coop 3 (20 %) as 'slightly sustainable' ranked sixth among achieved level of sustainability of all sampled cooperatives.
- As for social sustainability Coop 6 (81 %) is at 'sustainable' range which is ranked first; Coop 1 (66 %) and Coop 2 (62 %) are at 'slightly sustainable' range which are ranked as second and third respectively followed by Coop 4 (53 %) and Coop 5 (41 %) as 'moderately sustainable' ranked fourth and fifth, and Coop 3 (20 %) as 'slightly sustainable' ranked sixth among achieved level of sustainability of all sampled cooperatives.
- As for environmental sustainability Coop 1 (53 %) and Coop 2 (52 %) are at 'moderately sustainable' range which are ranked as first and second respectively; Coop 4 (35 %), Coop 5 (34 %) and Coop 6 (26 %) are at 'slightly unsustainable' range which are ranked as third, fourth, and fifth respectively followed by Coop 3 (17 %) as 'unsustainable' ranked sixth among achieved level of sustainability of all sampled cooperatives.
- As for overall coop sustainability Coop 1 (69 %) and Coop 2 (66 %) are at 'slightly sustainable' range which are ranked as first and second respectively; Coop 6 (59 %) and Coop 4 (50 %) are at 'moderately sustainable' range which are ranked as third and fourth respectively followed by Coop 5 (39 %) as 'slightly unsustainable' ranked fifth, and Coop 3 (19 %) as 'unsustainable' ranked sixth among achieved level of sustainability of all sampled cooperatives.

Comprehensive Cooperative Sustainability Level & Ranking - Score Card Results

- As far as economic sustainability dimension is concerned, Coop1 is in the most sustainable condition with sustainable level and Coop 3 is the least with the level slightly unsustainable condition, whereas social sustainability dimension the most sustainable is Coop 6 with sustainable level and the least sustainable is Coop 3 with slightly sustainable level. With regard to environmental sustainability dimension Coop 1 is found to be the most sustainable condition with moderate sustainable level and Coop 3 is in the least sustainable condition with unsustainable level. As for comprehensive coop sustainability, Coop 1 (69 %) is at slightly sustainable level with first rank followed by Coop 2 (66 %) at slightly sustainable level with second rank, while Coop 3 is at unsustainable level with sixth rank among achieved level of sustainability of all sampled cooperatives.

Competitive Sustainability Strategies adopted by sampled Cooperatives

- As for 'safe strategy' respondents revealed that Coop 1, Coop 2, and Coop 4 practice at a high level followed by Coop 5 and Coop 6 at moderate level, and Coop 3 at low level.
- As for 'credible strategy' respondents revealed that Coop 1, Coop 2, and Coop 4 practice at a high level followed by Coop 6 at moderate level, Coop 3 and Coop 5 at low level.
- As for 'efficient strategy' respondents revealed that Coop 1, Coop 2, and Coop 4 practice at a high level followed by Coop 5 and Coop 6 and Coop 3 at moderate level.
- As for 'innovative strategy' respondents revealed that Coop 1and Coop 2 practice at a high level followed by Coop 3, Coop 4, Coop 5 and Coop 6 at moderate level.
- As for 'transformative strategy' respondents revealed that Coop 1, Coop 2, and Coop 4 practice at a high level followed by Coop 5 and Coop 6 and Coop 3 at moderate level.
- The key informants and FGD participants also reported the same results regarding all sustainability strategies with some difference. With regard to safe, efficient, and innovative strategies Coop 3 was in both moderate and low level of adoption ranging from 25 percent to 38 percent at low level and 62 to 75 percent moderate level of adoption. With regard to innovative strategy Coop 5 was also in both moderate (60 %) and low (40 %) level adoption. Coop 6 was in both high and moderate level of adoption regarding innovative (high 69.2 % and moderate 30.8 %) and transformative (high 76.9 % and moderate 23.1 %) strategies. The overall observation on the adoption of strategies revealed that Coop 1, Coop 2, and Coop 4 are practicing sustainable strategies at a high level followed by Coop 5 and Coop 6 at a moderate level, and Coop 3 at moderate and low level depends on the strategy adopted. This evidenced with the findings on sustainability level and ranking found through analysis.

CONCLUSION

Agricultural Cooperatives in the study area are involved in the economic, social, and environmental dimension of cooperative sustainability. From the foregoing analysis it can be concluded that the agricultural cooperatives do have better position with economic sustainability, to some extent social sustainability, but they do not have favourable situation in environmental sustainability so that the cooperatives are located at moderate and low level of sustainability condition. With regard to comprehensive cooperative sustainability the same result is seen among sampled cooperatives. It is evident that the sustainability level and ranking are in consonance with the sustainability strategies they adopted. There is a need to identify and develop a new vibrant cooperative economic model, which addresses the economic challenges cooperative stakeholders face, as well as the social and environmental challenges disturbing cooperative sustainability. It can be achieved only through practicing and adopting right sustainability strategies at right time effectively.

Recommendations

By considering the responses been given by the respondents, KIIS, and FGD participants on the sustainability dimensions and strategies adopted by cooperatives, and based on the findings the following recommendations can be forwarded to make cooperatives more sustainable in their business and to improve the sustainability level of agricultural cooperatives in the study area.

- Cooperative principles and values are to be closely well aligned with the economic, social, and environmental sustainability of cooperatives. Cooperatives will be sustainable when they are economically viable business units that fully implement cooperative principles and values as socially responsible enterprises, and maintain or regenerate the ecosystems in which they exist and are embedded.
- Agricultural Cooperatives which are at moderate and low level of sustainability must adopt appropriate strategies to improve to the 'sustainable' level of cooperative sustainability with due attention and care.
- Particularly Coop 3 must take proper measures to implement appropriate sustainability strategy to improve the sustainability level since it is ranked sixth (last coop); Coop 5 and Coop 6 have to focus more on all five sustainable strategies at a high level, while Coop 4 on innovative strategy.
- Regards to economic sustainability of sampled cooperatives, they have to increase member economic involvement through increase in membership base and capital base to improve the business volume whereby increasing members' income. The cooperatives board must have a system to review financial statements and key ratios periodically, and bank covenants; should compare budgeted figure with actual result attained, which will have the effect on economic sustainability.
- Regards to social sustainability of sampled cooperatives, creation of social fund to undertake social projects and schemes, and CSR activities like supporting members and employees' children education, insurance, medical facilities for employees, and socialization of agricultural activities are advocated.
- Regards to environmental sustainability of sampled cooperatives, they should concentrate more on improving environmental sustainability in terms of organic farming, conservation and protection of environment, agricultural waste management, adhering to environment policy of the government, imparting farmers knowledge on agricultural and ecosystems whereby cooperatives can offer eco-friendly products and services to the community.
- Safe strategy can be adopted by means of training farmers to forecast, assess, manage, and avoid risks involved in agricultural activities.
- Cooperatives must foster credibility by enhancing reputation which is a non-tangible asset creates value and attracts suitable members and employees whereby satisfies customers. Through the value created cooperatives image in the society can be built.
- Cooperatives must evolve efficient strategies like best agricultural practices by learning and adopting from other successful cooperatives, proper utilisation of resources to enhance productivity in all means with socio, eco-efficiency application.
- It is advocated to go with innovative strategies like product differentiation / improvement with socially and eco-friendly product innovation. Sustainable value added agricultural produces, products and services through sustainable supply chain are better to market by cooperatives.
- Cooperatives should evolve with transformative strategy to create new market with institutional change within human needs, mobility of goods, create sustainable standards, product labels, "Coop" brand products and services.

REFERENCES

Braverman, A., Guasch, J.L., Huppi, M. & Pohlmeier, L. (1991). *Promoting Rural Cooperatives in Developing Countries: The Case of Sub-Saharan Africa.* Cambridge University Press.

Grootaert, C. (1998). *Social Capital: The Missing Link?* Social Capital Initiative.

Harris, J. & de Renzio, P. (1997). 'Missing Link' of Analytically Missing?: The Concept of restructuring. *Journal of International Development, 9*(7).

Hedlund, H. (ed.). (1988). *A Cooperative Revisited.* Scandinavian Institute of African Studies.

Hussi, J. M., Lindberg, O. & Brenneman, L. (1993). *The Development of Cooperatives and Other Rural Organisations.* World Bank-Technical papers.

International Co-operative Alliance [ICA] *lobal 300 Report 2010: The World's Major Cooperatives and Mutual Businesses.* ICA. https://www.aciamericas.coop/IMG/pdf/global300_report2011.pdf

Jiggins, J. (1988). Beware the Greeks Bearing Gifts: Reflections on Donor Behaviour and Cooperative Performance. In H. Hedlund (ed.), *A Cooperative Revisited.* Scandinavian Institute of African Studies.

Lele, U. (1981). Co-operatives and the Poor: A Comparative Perspective. *World Development, 9*(1), 55-72.

Rondot, P. (2004). *Presentation: Reaching the Poor: Issues and Challenges. The World Bank and Rural Producer Organizations and Cooperatives.* COPAC Open Forum.

World Bank. (1997). Empowering Producer's Organizations: Issues, Goals and Ambiguities' Agricultural Producer Organizations: Their Contribution to Rural Capacity Building and Poverty Reduction, Washington, DC.