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The Role of Associative Mechanisms in Increasing Farmer Resilience to Natural Hazards

Wentink, G.J.[1]

Corresponding Author: G.J. Wentink. Correspondence Email: gideon.wentink@nwu.ac.za

ABSTRACT

Associative mechanisms (such as cooperatives) offer various benefits to their members regarding financial advantages and risk management, providing access to skills and knowledge, strengthening communication and relationships, and offering members stronger negotiation and bargaining power. However, how membership to associative mechanisms contributes to small-scale farmers' resilience is not well documented. This article explores how associative mechanisms contribute to small-scale farmers' ability to absorb shocks, remain productive, and maintain their system's equilibrium. In total, 1110 respondents from seven Mozambique, Malawi and Madagascar districts were interviewed using a mixed assessment method. The data was analysed using a participant perspective. Various findings in the data showed that associative mechanisms benefit their members, including increased access to credit and more diverse market access, and enable members to employ less drastic coping strategies than non-members. The main recommendation is that farmers' associative mechanisms should be supported and guided to be internally driven and motivated mechanisms.

Keywords: Resilience, Associative Mechanisms, Disaster Risk Reduction, Natural Hazards

1. INTRODUCTION

The liberalisation of commodity trading and pricing in developing economies such as Uganda, Mexico, Guatemala, Brazil, Malaysia, the Philippines, Colombia, and India emerged at the beginning of the 1990s (UNCTAD, 2002). Before this time, governments absorbed a great deal of the risk in agriculture and markets by minimising market disruptions, controlling imports and exports and enabling farmer support systems (Nwafor & Ngoga, 2020). This

[1] Lecturer: North-West University, Unit for Environmental Sciences and Management, 11 Hoffman Street, Potchefstroom, gideon.wentink@nwu.ac.za. ORCID: 0000-0002-8303-0429

burden has since shifted to farmers, who now have to ensure the ability to absorb disturbances like the changing environment and increased exposure to natural hazards while maintaining the same function, structures, and feedback mechanisms (Folke, 2010; Hellin *et al*., 2009).

Farmers faced with natural hazards developed various coping strategies, including reactive strategies, short-term actions and adaptation responses. These strategies often developed into some form of collective action to enable farmers to manage change and decrease the intensity of events, as individual attempts were usually unsuccessful (Osbahr *et al*., 2010; Chanrith, 2008).

The role of farmers' associative mechanisms in managing crises and disturbances in agriculture is not extensively documented in the literature. However, Curtis (2013) mentions that where farmers' associative mechanisms were formed, smallholder farmers had more control over resources, thus enhancing resilience. Members of farmers' associative mechanisms build knowledge on becoming more resilient to climate change (Kumwenda *et al*., 2013). Furthermore, with the advantages farmers gain from membership to farmers' associative mechanisms and how the governance of these mechanisms promote legitimate institutions to sustain and generate collective action, these mechanisms play a role in enhancing resilience (Siedenburg *et al*., 2009; Osbahr *et al*., 2010). This article explores how farmers' associative mechanisms contribute to the ability of small-scale farmers to absorb shocks, remain productive, and maintain their system's equilibrium. Through quantitative and qualitative research interventions in Madagascar, Malawi, and Mozambique, 1110 respondents in seven districts were interviewed. The first section of this article provides a theoretical grounding of collective action and farmers' associative mechanisms. The second part highlights how membership in farmers' associative mechanisms enhances small-scale farmers' resilience to hazardous shocks.

2. COLLECTIVE ACTION

Collective action strongly draws on social capital, which can be defined as the 'structure of relations between and among actors', and these relationships and the strength of the social capital of a group enhances collective action (Kruijssen *et al*., 2009). Collective action through social learning engages group members in such a way as to jointly define problems, search for and implement solutions, and evaluate the outcome (Mayunga, 2007; Kruijssen *et al*., 2009).

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According to Kruijssen *et al*. (2009), groups engaging in collective action can generate innovative ideas and practices that none would have been able to develop individually. This allows farmers to collectively meet basic market requirements for quality and frequency of supply that would otherwise have been difficult for individuals to achieve (Kagazani *et al*., 2009). Collective action occurs through a structure regulating the group's activity. This structure may function independently and be driven internally by members, therefore being defined as informal (McCarthy, 2008). Another way of functioning is in a formal capacity directed and driven with the support of external entities like government or NGOs (Devaux *et al*., 2009). Farmers' associative mechanisms are one way farmers engage in and exploit the potential of collective action to enhance productivity and increase bargaining power.

3. TYPES OF FARMERS' ASSOCIATIVE MECHANISMS

Farmers' associative mechanisms can take on different forms and can be differentiated between formal and informal ones depending on resources, relationships, roles, and rules (McCarthy, 2008). An informal farmers' associative mechanism is usually a group of farmers voluntarily forming an association or organisation. These informal structures are governed independently without directive or involvement of external groups like governments or NGOs (Poole & De Frece, 2010). External groups might support activities of the informal structure in terms of funding, office space, equipment, and communication systems, and ideally should if such organisations are to be successful (Jere, 2005). Different types of informal farmers' associative mechanisms include but are not limited to ad hoc groups, community-based groups, producer clubs, farmer collectives, farmers' associative mechanisms and rural community enterprises (McCarthy, 2008; Poole & De Frece, 2010).

Formal farmers' associative mechanisms are often formed and driven by external entities like governments or NGOs (McCarthy, 2008; Devaux *et al*., 2009). Being members of formal farmers' associative mechanisms can create a capacity-building knowledge 'chain' that links national policies to informal associations through district extension workers to lead farmers (Kumwenda *et al*., 2013). Informal farmers' associative mechanisms are often linked to larger national-level farmers' associative mechanisms as part of the entire collective action system. In a study undertaken by the Food Agriculture and Natural Resources Policy Analysis Network in 2005, three distinct types of farmer organisations were identified in the SADC region (Jere, 2005). Firstly, Farmers Unions/Associations are those groups that function in a

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district and regional level and can be seen as formal farmers' associative mechanisms. Secondly, Commodity Associations focus their activities on specific commodities, crops, or enterprises. Finally, Cooperatives are a specific type of farmers' organisation that focuses their activities on a specific activity or as a means to access specific resources like financial credit (Jere, 2005). In theory, membership in a farmers' associative mechanism can contribute to resilience building.

4. BUILDING RESILIENCE THROUGH FARMERS' ASSOCIATIVE MECHANISMS

The definition used in this study for resilience is that of Walker *et al*. (2004:4), indicating that:

> *"...resilience is the capacity of a system to absorb disturbance and reorganise while undergoing change so as to still retain essentially the same function, structure and feedbacks, and therefore identity, that is, the capacity to change in order to maintain the same identity."*

The four factors, according to Folke *et al*. (2003), that interact and are necessary to adapt to changing circumstances and, therefore, building resilience are 1) Learning to live with change and uncertainty; 2) nurturing diversity in its various forms; 3) combining different types of knowledge and learning and 4) creating opportunity for self-organisation and cross-scale linkages.

Factors 3 and 4 are of specific importance when discussing the contribution of farmers' associative mechanisms to resilience. Combining different types of knowledge and learning refers to the ability of a group/system to use traditional knowledge in collaboration with science (Berkes, 2007). Berkes (2007) argues that there are many ways in which traditional knowledge paired with science can enhance communication and motivate collaboration. Collective action and farmers' associative mechanisms rely on the engagement of farmers to be successful and offer a platform for engagement between local villagers and external scientists. Enhanced communication, information sharing, and better relationships are all advantages of farmers' associative mechanisms (Ţînţarcu, 2012; Darnhofer, 2010; Poole & De Frece, 2010). These aspects allow groups to share and engage in local and scientific knowledge. In this context, farmers' associative mechanisms ensure that all role-players gain access to local and scientific knowledge and the opportunity to learn from one another.

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Additionally, farmers engaging in collective action, specifically farmers' associative mechanisms, work directly to create opportunities for self-organisation and cross-scale linkages. According to Berkes (2007), the resilience of a system is dependent on its capacity to self-organise. Therefore, the effective functioning of structures and a strong self-organising capacity in a farmers' associative mechanism is critical to building resilience (Osbahr *et al*., 2010). According to Sichali *et al*. (2013), farmers' associative mechanisms provide crucial local knowledge and a route to rapid, widespread dissemination of climate-smart agricultural activities, thus enhancing resilience.

For an association to be effective in reaching its objective and increasing the resilience of a group, two conditions must be met. Firstly, members must be free to join or leave such an association anytime. It is important to allow members to have ownership in the association rather than being enforced by governments or NGOs (UNCTAD, 2002). Furthermore, farmers' associative mechanisms must function democratically, with every member having an equal right to input and electing representatives (UNCTAD, 2002). Another crucial aspect is to allow members to have ownership in the decisions and activities of the association. If members feel they cannot partake in the decision-making process, they might be less motivated to remain a member.

5. BENEFITS OF FARMERS' ASSOCIATIVE MECHANISMS FOR SMALL-SCALE AGRICULTURE

The primary motivation for forming a farmers' associative mechanism is usually common interests, challenges and opportunities that are identified and that can be addressed most successfully as a group (Jere, 2005). Advantages can include, but are not limited to, the following groups: 1) Financial advantages; 2) Risk management function 3) Skills, information and technology; and 4) Communication and relationships.

5.1. Financial Advantages

Financial advantages are one of the main motivations for small-scale farmers to get involved and participate in collective action and farmers' associative mechanisms. Farmers do not feel involved in farmers' associative mechanisms without any direct or indirect financial gain, especially for small-scale farmers with few resources (Hellin *et al*., 2009). The financial advantages that members stand to gain are not restricted to income relating to production.

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Farmers who are part of the structures can collectively invest in procuring machinery for their production activities, which would have been too expensive for individual farmers (UNCTAD, 2002). Small-scale farmers usually have high transaction and production costs that can be reduced and lessened by collectively pooling resources and marketing products (Kruijssen *et al*., 2009; Poole & De Frece, 2010). Being part of a farmers' associative mechanism also allows the mobilisation of financial resources and can enhance farmers' access to resources such as credit (Kruijssen *et al*., 2009; Uphoff & Wijayaratna, 2000; Ţînţarcu, 2012). A further benefit is that members can organise price insurance, which provides farmers with security (UNCTAD, 2002). In a study undertaken by Devaux *et al*. (2009) to 'investigate if farmer organisations can help small-scale farmers to obtain access to supermarkets', it was found that members who were part of a farmers' associative mechanism showed an income twice as high (US$543 as opposed to US$236) as farmers who were non-members. This showed that in terms of income, small-scale farmers have an advantage in being part of a farmers' associative mechanism.

5.2. Risk Management Function

Small-scale farmers with limited resources find it especially difficult to manage their risks through market mechanisms. Farmers' associative mechanisms can assist and provide a risk management service to their members by operating something like a stabilisation fund (UNCTAD, 2002). This refers to funds set aside for times when prices and instability are high. Furthermore, associations can reduce the risk of individual farmers with long-term investments or capital-intensive processing technologies.

5.3. Skills, Information and Technology

Engaging in collaborative action gives farmers access and the means to acquire other resources, such as training to improve quality and skills (Devaux *et al*., 2010; UNCTAD, 2002). Farmers' associative mechanisms can guide methods in trading, new farming techniques, or the importance of quality and methods in evaluating the quality of produce (UNCTAD, 2002). Being members of farmers' associative mechanisms, farmers can invest together in new technology that would have been too expensive for individuals to acquire (UNCTAD, 2002). The farmers' associative mechanisms farmers belong to also serve as a central point for the distribution of information about markets, traders, and prices, as well as system information about supply and demand. Lastly, when governments or international

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organisations arrange training programmes, they coordinate with and focus on farmers' associative mechanisms rather than individual farmers. Farmers seem to have better access to these skills transfer initiatives when they are members.

5.4. Communication and Relationship

In addition to the advantage of access to information that farmers' associative mechanisms offer their members, they also facilitate communication and dialogue between farmers and government representatives, government institutions and other role-players (Ţînţarcu, 2012). Improved communication between role-players and farmers improves conflict resolution and decision-making (Uphoff & Wajiyaratna, 2000). Better communication and creating opportunities for discussion and exchange of opinions also contribute to better relationships and information flow between the different role-players (Ţînţarcu, 2012; Darnhofer, 2010).

5.5. Negotiation/Bargaining Power

Another advantage for farmers belonging to a farmers' associative mechanism is how these associations can assist and enhance farmers' negotiation or bargaining power regarding pricing. Farmers' associative mechanisms can help their members to access markets as a collective and, by pooling products, enhance their bargaining power of sales conditions with traders and wholesalers, thus benefiting the members, their families, and the communities in which they function (Poole & De Frece, 2010; UNCTAD, 2002; Ţînţarcu, 2012; Kruijssen *et al*., 2009). This is possible because associations can offer larger quantities of their members' products in higher quality conditions (Ţînţarcu, 2012). As part of the bargaining ability of associations, their members can arrange fixed-price or minimum-price forward contracts (UNCTAD,2002).

There are thus many advantages and opportunities for members of farmers' associative mechanisms. By offering these benefits to their members, farmers' associative mechanisms strengthen the social capital, economic capital, and sometimes even human capital by giving farmers access to training and skills through the association network. The section that follows will explain the methodology used in assessing the role of farmers' associative mechanisms in increasing farmer resilience to natural hazards.

6. METHODOLOGY

A mixed-method design was used. This research design is particularly useful when qualitative data is used to follow up on the results of an experimental design. This study used quantitative data gathered from surveys to test the various hypotheses. Qualitative data obtained from focus groups was used to give a deeper understanding of and elaborate on the findings from the quantitative data.

The survey sample targeted the beneficiaries of various agricultural and food security activities undertaken by the FAO and partners over the past five years under Disaster Preparedness ECHO (DIPECHO) funding. The research was conducted in Madagascar, Malawi, and Mozambique. A combined total of 1110 respondents were interviewed: Mozambique represented 40.3% (N=447) of participants, Madagascar 30.4% (N=337) and Malawi 29.4% (N=326) (Figure 1). The areas/districts surveyed and their representation within the different countries are provided in Figure 1**Error! Reference source not found.**.

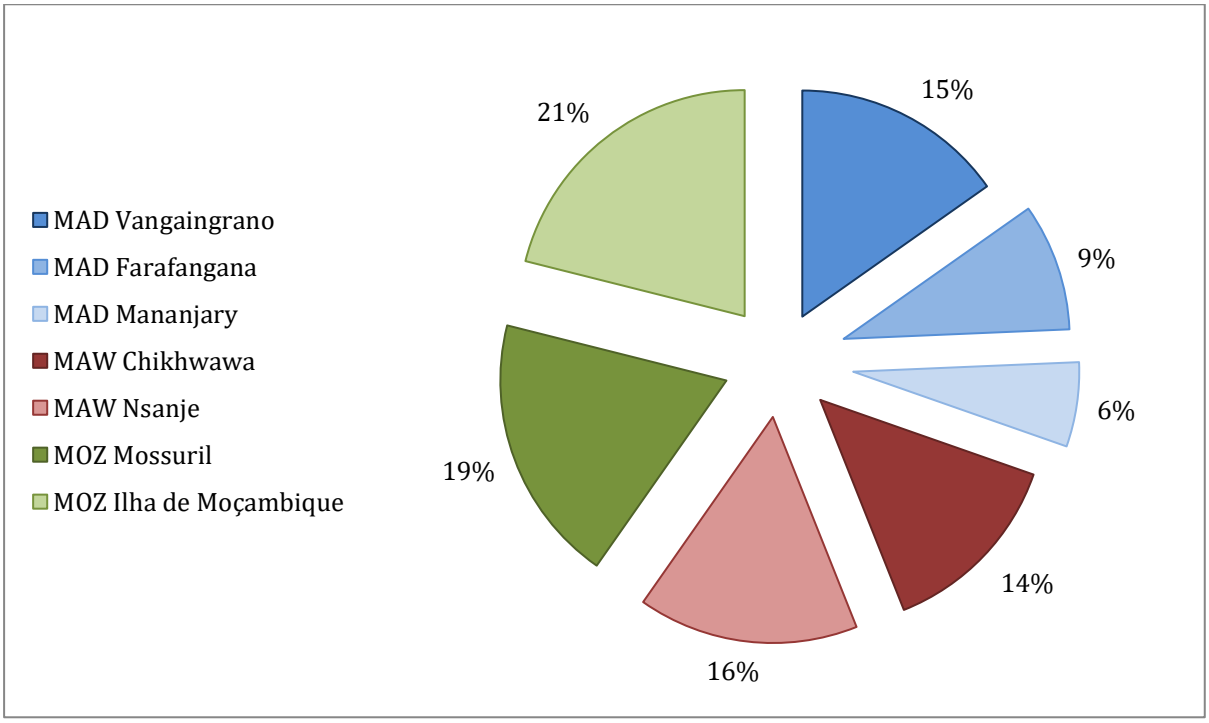

FIGURE 1: Survey Area

FAO representatives identified the respondents in various countries and were then randomly selected from these target populations by enumerators.

Data was collected using electronic tablets with preloaded survey questionnaires. The captured data was synchronised and stored remotely. In addition to survey data, ten

participatory focus group discussions were held in each country, transcribed, coded and analysed. The qualitative data was analysed using a participant perspective. This approach is useful for understanding marginalised populations, as it allows them to communicate their experiences and points of view. The quantitative data was used to supplement the qualitative data.

7. DATA ANALYSIS AND FINDINGS

The following sections provide the findings from the data collected from Madagascar, Malawi and Mozambique.

7.1. Household Food Consumption Patterns

FIGURE 2 shows the number of meals that households in the surveyed countries consume daily per individual. The majority of Malagasy (95.3%) and Mozambican households (59.1%) consume three meals a day, while the majority of Malawian households (65%) consume two meals daily.

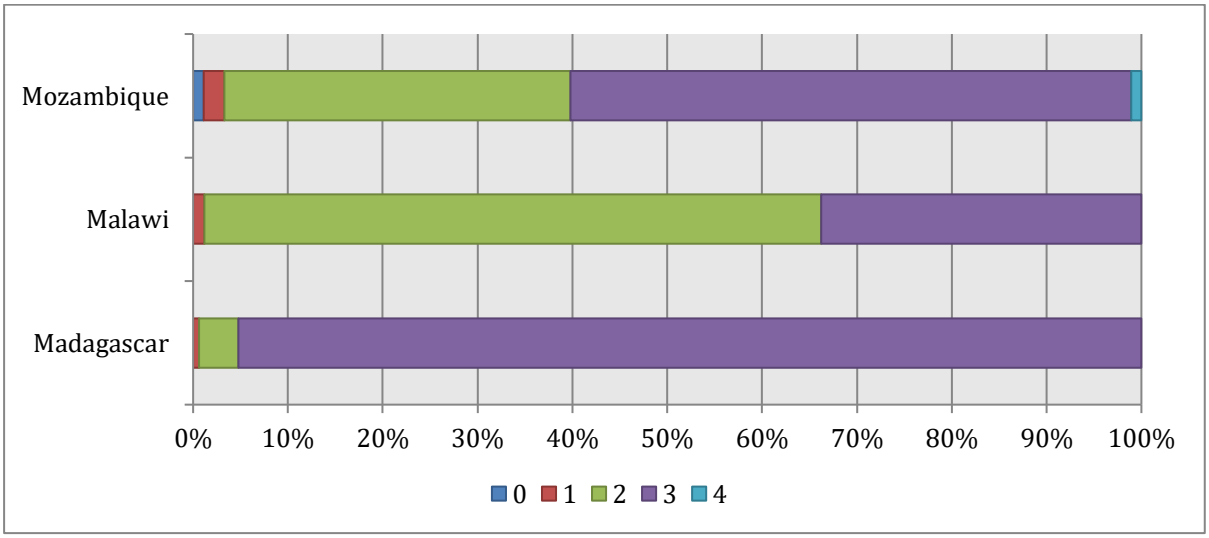

FIGURE 2: Number of Meals Per Day Per Country

As seen in FIGURE 3, the Malawians' diet mainly consists of cereals, vegetables and beans. In Madagascar, they mainly consume rice and other products and, to a lesser extent, vegetables, including cassava, sweet potatoes, and beans. Mozambicans have the biggest variety in their diets, which includes fish, cereals, beans, vegetables, and other products. It is evident from the data that meat as a source of protein is still an expensive option in

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developing African countries. The cost of acquiring and producing foods and the physical location also plays a large part in what people eat.

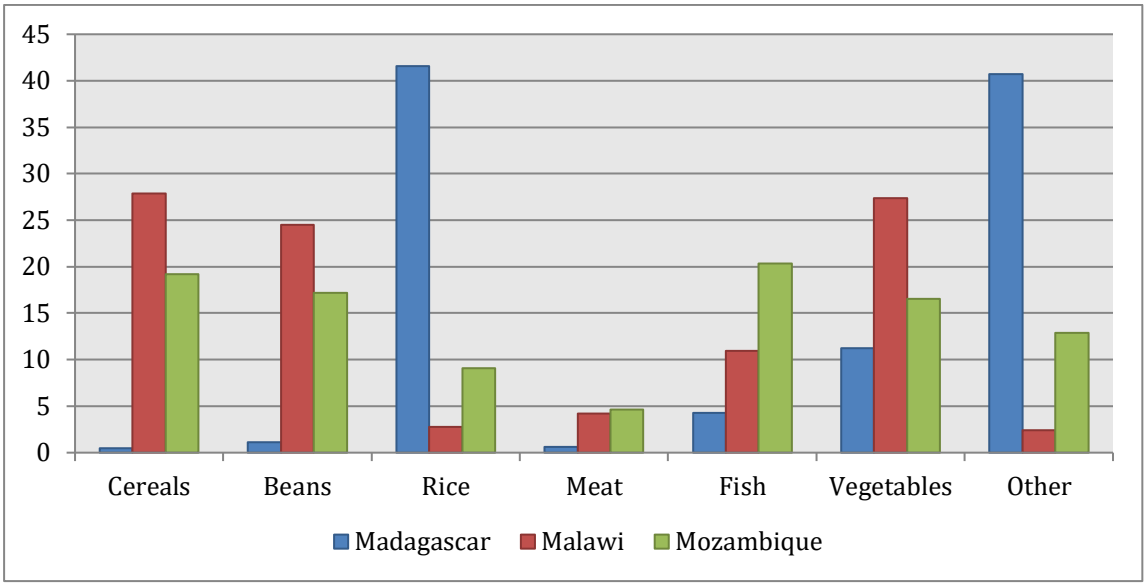

FIGURE 3: Types of Food Eaten on a Daily Basis Per Country

7.2. Market Access

Nearly a third of all respondents from Madagascar indicated that they use a neighbouring village market and a local village market to sell crops or livestock. Malawian farmers prefer to use a trader, local village market and neighbouring village market to sell crops or livestock. At the same time, Mozambique respondents tend to use a neighbour and trader. It is evident that respondents in all countries mainly use informal markets to sell their products, while a significant number of respondents in Madagascar and Mozambique do not use any of the indicators mentioned to sell their products. Market access to formal markets is still limited. Future research into the profitability of accessing formal markets versus selling in informal markets could provide more insight into the possible benefits of entering formal markets (FIGURE 4).

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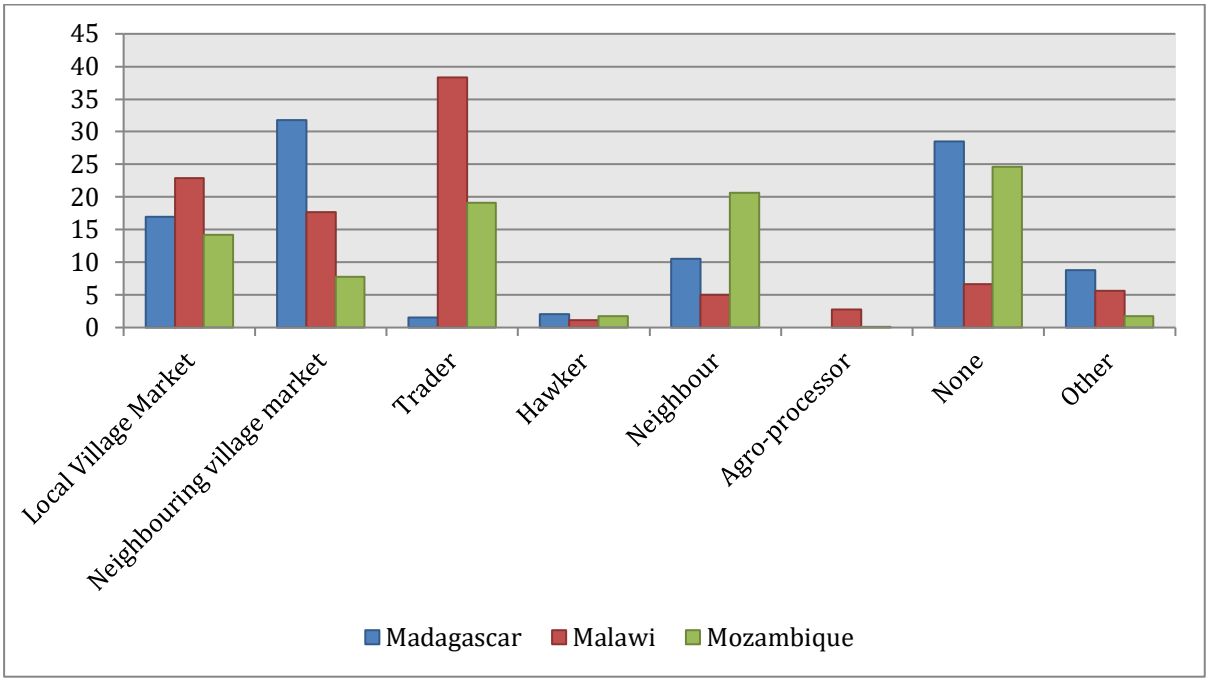

FIGURE 4: Marketing Channels

7.3. Access to Credit

Combined data from the surveyed countries showed that nearly 60% of respondents cannot access credit. However, when the results from the individual countries are analysed, it is clear that they differ in terms of their accessibility to credit. Regarding Mozambique, only 16.1% of respondents indicated they have access to credit. In Malawi, 78.8% of respondents indicated they have access to credit, while 39.1% of respondents in Madagascar have access to credit. Limited credit access should be a major concern, especially in Mozambique and Madagascar. The inability to finance inputs during the production season could negatively impact the resilience of respondents.

7.4. Credit Source

In Mozambique, 63.5% of respondents indicated that they acquired credit from a family member or a neighbour. Regarding Malawi, 86% of respondents indicated village savings as their primary source of credit. Malagasy respondents indicated that their main sources of credit are a farmers' association, family members, and neighbours. Interestingly, the formal banking system was not rated high as a source of credit (FIGURE 5).

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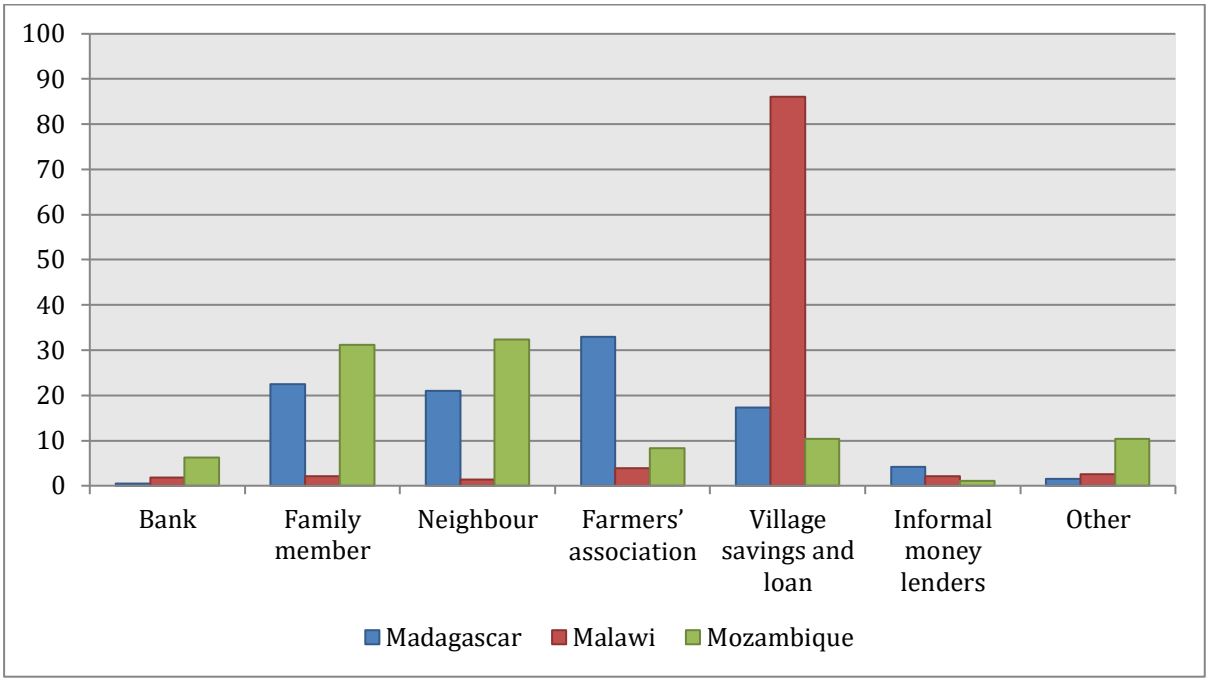

FIGURE 5: Specific Credit Source Per Country

7.5. Membership in Farmers' Associative Mechanisms

In the quantitative questionnaire, respondents were asked to indicate whether they were farmer's association members. In literature, it is noted that membership of farmers' associative mechanisms allows farmers more control over their resources by allowing them to determine the price of their products and where and to whom they sell, which contributes to their resilience. The combined data showed that 53.42% of the respondents are members of a farmers' association. The distinction between members and non-members is an important guideline for other questions in this presentation to establish how and if these two groups experience different situations. In the various countries, the picture in terms of membership in these organisations looks quite different. Malawi showed the greatest number of members of farmers' associative mechanisms, with 89.88% of the respondents being members. In Madagascar, 61.42% of the respondents are members of a farmers' association. However, in Mozambique, only 20.81% of the respondents are members of a farmers' association.

7.6. Membership and Access to Credit

In the research, it was clear that members have more opportunities or access to credit, with 62.06% of farmers' association members indicating that their household has access to credit services, compared with 82.01% of non-members saying that their household does not have

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access to credit. This describes the value of the access or exposure to different services a farmers' association can offer its members. Farmers' associative mechanisms may assist by offering the service themselves or providing valuable information to farmers on acquiring credit services. There was a big difference between members and non-members in terms of credit sources. Most farmers who are members of farmers' associative mechanisms indicated that they have access to credit through village savings and loans. Secondly, farmers accessed credit mostly through farmers' associative mechanisms.

This shows that farmers' associative mechanisms might not be the institution offering the credit service, but farmers might access village savings and loans through affiliation with the association. This is also in line with what is indicated in the literature. Farmers' associative mechanisms facilitate and strengthen relationships and linkages between their members and other role players as part of their Communication and Relationship benefits. On the other hand, most non-members indicated that they have access to credit through family members and neighbours. In light of this, it seems that non-members rely quite heavily on their immediate social network of family and friends for credit. This may become a problem if the immediate network that non-members rely heavily on becomes severely impacted by an event, be it disastrous or something more localised to these immediate groups.

7.7. The Diversity of Crops Produced

Members of farmers' associative mechanisms mostly plant maize (rainfed and irrigated) and rice in the summertime. Interestingly, even though these are the main crops that are produced, members of farmers' associative mechanisms also plant various other crops, such as sorghum, cassava, and millet (FIGURE 6).

Non-members rely greatly on planting cassava and maize that is rainfed. For members of farmers' associative mechanisms, the amount of other crops they grow is much more evenly spread, while non-members' focus is much morespecific to certain crops. The assumption can be made that farmers' associative mechanisms supply their members with various seeds to plant; however, this is not the case, as respondents indicated that for both members and non-members, NGOs are the leading supplier of seeds (FIGURE 6).

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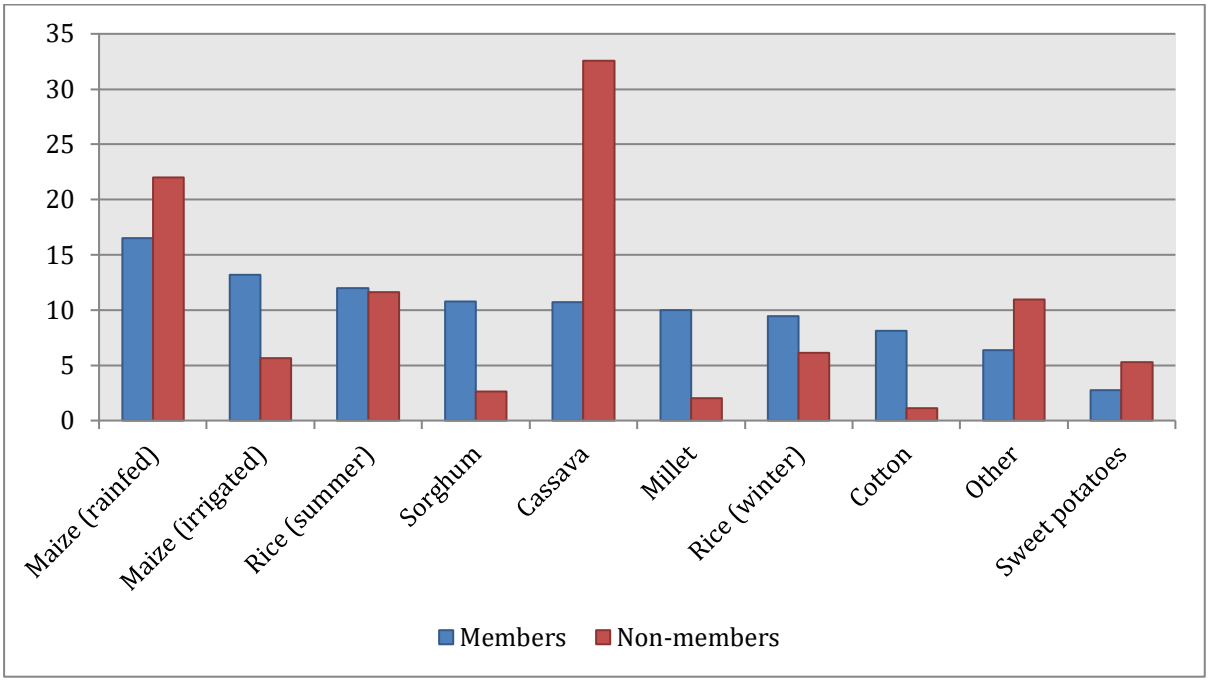

FIGURE 6: The Variety of Crops Produced

Members of farmers' associative mechanisms indicated that they receive the seeds for all of the crops mentioned, except rice (summer) and cassava, primarily and in high percentages from NGOs. Respondents indicated that they receive seeds from what they have produced themselves for planting rice in the summer. In terms of cassava, respondents indicated the government as the main source of these seeds. NGOs are also the main source for non-members in terms of seeds for crops like maize and rice for summer and winter planting. However, the percentage of non-members that procure their seeds for all the crops in the list is much higher than for those farmers that belong to farmers' associative mechanisms. Regarding crops like millet and sorghum self-produced seeds were indicated as the most common source. Non-members additionally indicated that agro-dealers (30.96%) are their main supplier of seed for maize (rainfed).

Considering the above its clear that farmers' associative mechanisms are not primarily responsible for the fact that their members can plant a larger variety of crops. However, a strong correlation exists between being a member of a farmers' association and being able to plant a larger variety of crops. This might mean that with other functions that a farmers' association fulfil, they are enabling their members to plant a larger variety of crops either by sharing information with other farmers regarding different crops or by means of financially putting farmers in such a position so that they can try and plant different crops. Farmers'

associative mechanisms might also have good relationships with NGOs and form a link between their members and these organisations, exposing them to different beneficial relationships they might not have had access to if they were not members. Also, from the data, one can see that non-members rely much more on procuring seeds themselves. More research in this regard may shed some light on this phenomenon.

7.8. Access to Markets

Members of farmers' associative mechanisms indicated that they mostly sell their crops and livestock by using a trader and at neighbouring village markets. Non-members mostly selected none among all the listed options. This could either mean that the means or structure that non-members use to sell their products were not indicated in the list or that they do not sell their produce but keep it for personal use. Furthermore, non-members indicated that they sell their produce mostly to neighbours, at the local village market, and by using a trader. The network non-members use to sell their products seems much more confined to their community and immediate surroundings. It could then be argued that a farmers' association allows its members to sell their products to a wider network, exposing farmers in ways to use traders and access markets a bit further away than neighbouring village markets. This shows the role that farmers' associative mechanisms play with regard to linking their members with a wider network of other farmers, giving them easier access to other services like traders and credit services (FIGURE 7).

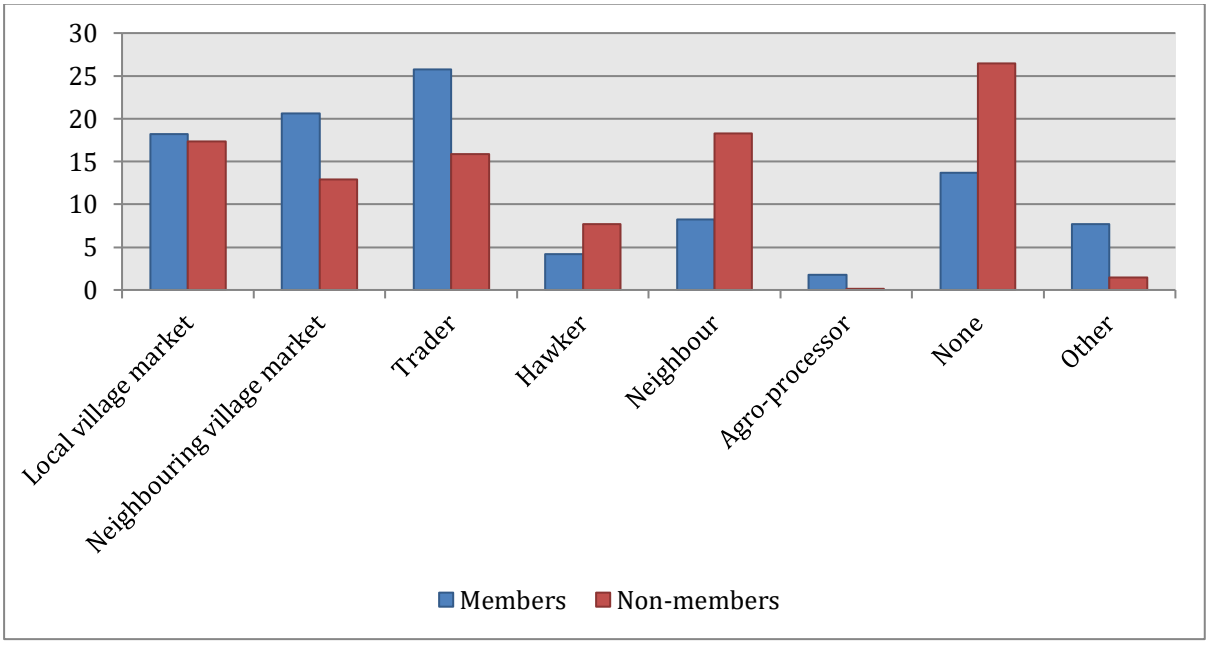

FIGURE 7: Members and Non-Members Access to Markets

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7.9. Coping Strategies

Farmers' associative mechanisms play a major role in their risk management function. This was indicated both in the literature and in the study. Related to the risk management function, the data of members and non-members were considered, along with the coping strategies that they use after experiencing a disaster. The coping strategy that members of a farmers' association use firstly, as indicated in the data, is sending a household member to work in other people's fields and take food as payment for the labour. Secondly, members reduce their food portions at mealtimes to cope with the effects of a disaster; thirdly, they sell household assets such as land, livestock, ox-drawn carts, and other physical assets. Non-members handle the effects of a disaster quite differently by reducing the number of meals per day and reducing the portions of food at mealtimes (Figure 8).

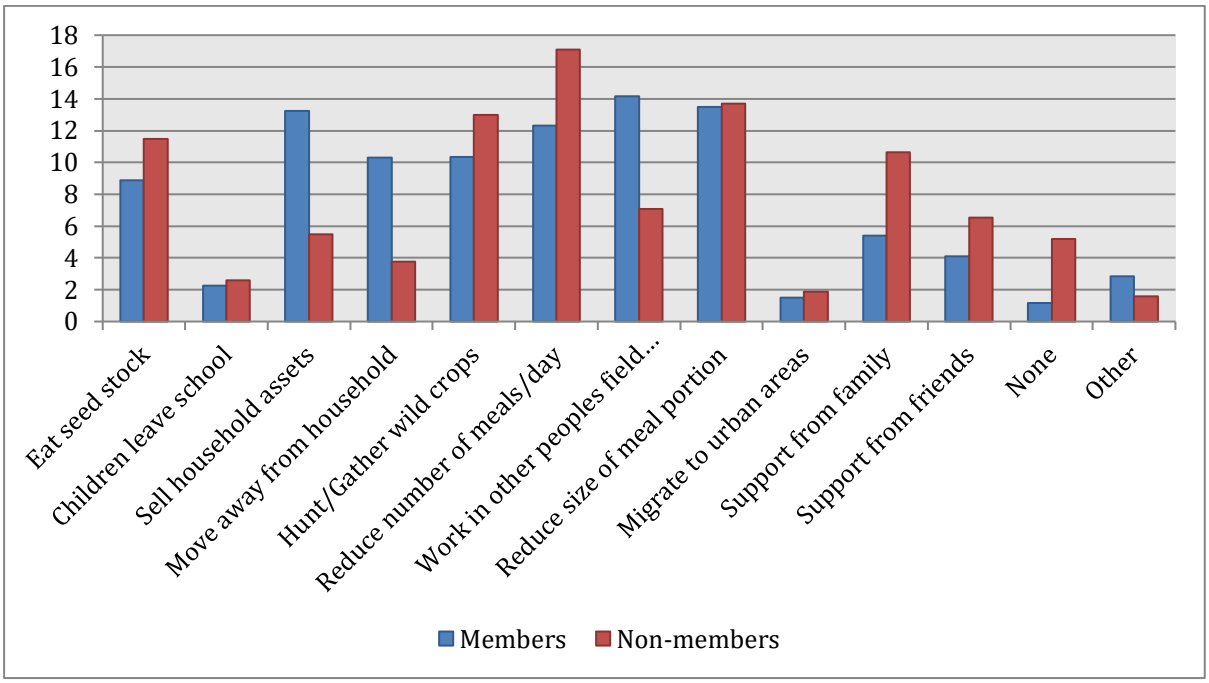

Figure 8: Difference in Coping Strategies Between Members and Non-Members of Farmers' Associative Mechanisms

It would seem as though members of farmers' associative mechanisms first use the network of other farmers to have access to cope with the effects of a disaster. As an immediate reaction to the disaster, the extended network that membership offers allows farmers to not adjust their food portions and meals in their households. Non-members have limited access to this network and turn to a more drastic adjustment of their household's food portions and meal needs to cope with the same effects. It would seem as though farmers' associative mechanisms

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and the networks they rely on allow their members to cope less drastically when having experienced a disaster than the coping strategies that non-members apply. Apart from the risk management function farmers' associative mechanisms offer their members in times of need, access to an extended network is a very important capacity when members adjust and try to cope with a disaster's effects.

8. DISCUSSION

In the literature, emphasis was placed on the various advantages that farmers' associative mechanisms offer their members. Part of the advantages that associations offer is bargaining and negotiation power. This aspect did not seem to be one of the main activities in which farmers' associative mechanisms in the three countries engage. Literature refers to the pooling of products between members of the farmers' associative mechanisms to enhance quality and bargain for better sales conditions with traders. Processing and value addition of produce by any means received some of the lowest responses during the study. Also, activities such as marketing and selling produce received relatively low responses for the activities that farmers' associative mechanisms engage in. Therefore, the contexts in these three countries differ; this is an important aspect to consider when planning initiatives or collaborations with farmers' associative mechanisms.

Furthermore, an aspect evident in the data for the three countries is that farmers' associative mechanisms are not always the entities directly providing services like credit services and products like seeds. However, farmers affiliation with the farmers' associative mechanism allows them to interact with many other role players that farmers do not necessarily have access to as non-members. Therefore, in these three countries, the linking role farmers' associative mechanisms play in relationships and communication is really important.

A second aspect that did not come out of the data in the study reasonably, as described in the literature, is the combination and interaction between traditional knowledge and scientific knowledge and the sharing of information. The literature describes the role of farmers' associative mechanism regarding skills, information, and technology, amongst other aspects, as a linking role between governments and NGOs to provide information and training. Although this might be part of the function they fulfil in the three countries, the respondents did not explicitly mention this aspect. However, great emphasis was placed on the advantage farmers gain from sharing knowledge and information. In the three countries, it can thus be

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said that one aspect that is greatly appreciated by members of farmers' associative mechanisms is the interaction they have with other farmers in terms of information sharing and exchange.

Different types of informal farmers' associative mechanisms include ad hoc groups, community-based groups, producer society or clubs and nucleus, farmer collectives, farmers' associative mechanisms, and rural community enterprises (McCarthy, 2008; Poole & De Frece, 2010). Formal farmers' associative mechanisms are those that are driven and called together by external entities like government entities or international organisations such as NGOs (McCarthy, 2008; Devaux *et al*., 2009). Curtis (2013) does, however, mention that where farmers' associative mechanisms were formed, smallholder farmers had more control over their resources, thus enhancing their resilience.

9. CONCLUSION AND RECOMMENDATIONS

Farmers' associative mechanisms are one of the products of collective action and rely heavily on the social capital of farmers. Social capital enhances networks and coordination between persons in a network. Social capital also aims to facilitate access to resources and, therefore, is an important aspect to consider when aiming to build the resilience of small-scale farmers through farmers' associative mechanisms.

In the research done in Malawi, Mozambique, and Madagascar, it was established that, in line with the literature, farmers' associative mechanisms have various advantages to offer members. In the context of building resilience for small-scale farmers, it was found that farmers' associative mechanisms can contribute in several ways. Firstly, by ensuring farmers' associative mechanisms are driven internally by farmers themselves, sustainability, participation, and an increased sense of farmer's ownership of activities and decisions are ensured. This can be seen throughout the data for farmers who are members of farmers' associative mechanisms in the study area. More members of farmers' associative mechanisms had access to credit and credit services. Members of farmers' associative mechanisms could plant a larger variety of crops than non-members. Furthermore, from the data, it was also noted that non-members produce more of their own seeds instead of getting them from other sources like NGOs or government entities. Members of farmers' associative mechanisms also had access to a wider variety of markets where non-members only sold to their immediate environment. Finally, from the data, members of farmers' associative mechanisms used less

drastic coping strategies after a disaster than non-members, who would start by reducing the number of meals per day and further reducing portion size. In doing so, non-members use coping strategies directly impacting their household's food security, where members of farmers' associative mechanisms could rely on the wider network of other farmers they have access to.

These are important aspects when aiming to increase the resilience of small-scale farmers through farmers' associative mechanisms, and the data showed, true to what is said in literature, members of farmers' associative mechanisms have more control over their resources as well as access to various other resource and through these structures build their knowledge on how to become more resilient to climatic changes (Curtis, 2013; Kumwenda *et al*., 2013).

In terms of building resilience, from the data, it is clear that being a member of a farmers' associative mechanism builds farmers' social capital by enhancing networks and coordination between farmers in various aspects. In light of the data analysis and findings, as well as the discussion, the following recommendations can be made:

- Provide support and guidance to farmers for establishing internally driven and motivated farmers' associative mechanisms;
- Externally driven farmers' associative mechanisms must be made sustainable through the transfer of knowledge and skills to farmers, therefore encouraging farmers to take the initiative themselves and encouraging internally driven farmers' associative mechanisms;
- Promoting and encouraging farmers to become members of farmers' associative mechanisms by placing great emphasis on advantages farmers stand to gain in terms of access to credit, access to markets, diversity of crops that can be produced, access to information and reliance on a wider network; and
- Support should be given to farmers' associative mechanisms regarding the main activities they engage in and the specific context of the area.

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