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Social Capital and Food Security Amongst Women in Smallholder Farming in the Face of Climate Change in Bikita, Zimbabwe

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Abstract

Food insecurity is a devastating setback for vulnerable women in smallholder farming in Zimbabwe. Women's low or limited adaptive capacity is caused by diverse factors, including , which include poverty, an unstable economy, political crisis and climate change. Adaptive strategies that differ from the conventional national and civic interventions to circumvent these factors have yielded subtle food security outcomes. As a result, there are growing calls for the adoption of social capital as an alternative grassroots-based adaptive strategy. This study examined the potential for and challenges faced by women who use social capital in adapting to food insecurity. Using in-depth interviews, focus group discussions and key informant interviews it revealed that women in smallholder farming were utilising bonding, bridging and linking capital as a means of adaptation. These three types of capital were operationalised in four projects: Food For Assets (FFA), community gardening, the Boer goat project and Fushai. It emerged that three of the projects performed better in some wards but did not do well in others. Despite its potential, the Boer goat project was riddled with challenges, which emanated from the absence of bonding capital. I therefore conclude and recommend that social capital is critical for women in food insecurity adaptation. However, it needs to be buttressed by a harmonious relationship between the three forms of social capital and all stakeholders for sustainability to be realised.

Keywords: Food security, social capital, vulnerability, climate change, adaptation

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Résumé

L'insécurité alimentaire est un revers dévastateur pour les exploitantes agricoles vulnérables du Zimbabwe. La capacité d'adaptation faible ou limitée des femmes est causée par divers facteurs, notamment la pauvreté, une économie instable, la crise politique et le changement climatique. Des stratégies d'adaptation différentes des interventions nationales et civiques conventionnelles d'évitement de ces facteurs ont produit des résultats subtils en matière de sécurité alimentaire. En conséquence, il y a de plus en plus d'appels en faveur de l'adoption du capital social comme stratégie alternative d'adaptation basée sur le communautaire. Cette étude a examiné le potentiel et les défis auxquels sont confrontées les femmes qui utilisent le capital social pour s'adapter à l'insécurité alimentaire. À l'aide d'entretiens approfondis, de discussions de groupe et d'entretiens avec des informateurs clés, il a été révélé que les femmes dans les petites exploitations agricoles utilisent le capital de caution et de liens intra et intergroupes comme moyen d'adaptation. Ces trois types de capital ont été opérationnalisés dans quatre projets : Food For Assets (FFA), le maraîchage communautaire, le projet Boer goat et Fushai. Il est apparu que trois des projets ont obtenu de meilleurs résultats dans certains services, mais pas dans d'autres. Malgré son potentiel, le projet Boer goat était semé d'embûches qui émanaient de l'absence de capital de cautionnement. Je conclus donc que le capital social est essentiel pour les femmes dans l'adaptation à l'insécurité alimentaire. Cependant, pour réaliser la durabilité, il doit être étayé par une relation harmonieuse entre les trois formes de capital social et toutes les parties prenantes.

Mots-clés : sécurité alimentaire, capital social, vulnérabilité, changement climatique, adaptation

Introduction

The food security-insecurity conundrum has become a tenacious issue in Africa in the twenty-first century (IPCC 2007; Kaswan 2013). Sub-Saharan Africa is the most vulnerable region on the continent to droughts and other disasters, and it is anticipated that the situation will only worsen in the future (AGRA 2014). The drastic decrease in food production is mainly caused by diverse factors such as insufficient rainfall, shorter rain seasons and the multiplication of crop-consuming pests. Worryingly, the coping and adaptive capacity of vulnerable populations to severe and prolonged droughts is heavily compounded by other multi-layered factors (Chagutah 2010). The common observed factors that aggravate food insecurity and slow adaptive strategies include severe poverty, increasing political crisis, failing economies, population boom and climate change.

Indeed, one of the repeatedly debated factors in the food security-insecurity discourse is uncontrolled population growth (AGRA 2014). In this regard, sub-Saharan Africa is considered to be at a crossroads at the nexus of food production and a drastically increasing population. Attempts to balance the increase in population with industrial growth, or lack thereof, show uncontrollable vulnerabilities to severe food insecurity. Indeed, statistical projections have indicated that the current population of 800 million will skyrocket to 1.5 billion by 2050. If this trend materialises, sub-Saharan Africa will not have the capacity to cope or adapt to the escalating demand for food production, which is estimated to hit the 360 per cent mark by 2050 (AGRA 2014). Meeting the food demand against a backdrop of worsening political instability and uncertainty, nose-diving economies and increasingly extreme climate change impact will prove to be a mammoth task (Manjengwa and Matema 2014). Needless to say, these conditions point to a predetermined and prolonged food insecurity and vulnerability in the near future amongst poorly resourced populations who depend on rain-fed smallholder farming systems. In a situation of intensified drought, malnutrition becomes one of the greatest challenges affecting the young and ailing members of populations in sub-Saharan Africa (IPCC 2007).

Apart from the other mentioned threats to food insecurity, climate change is considered one of the most dangerous hazards to affect poorly resourced smallholder farmers in sub-Saharan Africa (Manjengwa and Matema 2014). It is worth noting that the impacts of climate change on human beings and livelihoods are not gender-neutral (AGRA 2014). Evidence from various studies has revealed that women and children are more prone to food insecurity and other effects of climate change in sub-Saharan Africa, and in Zimbabwe in particular (Kaswan 2013; Chagutah 2010). Gender-sensitive scholars have acknowledged the need for a narrower focus when measuring the vulnerability of smallholder farmers to droughts and other climate change shocks and stresses. The prevalence of gender-based vulnerability calls for holistic approaches and policies that address the climate change impacts and their effects on women and children (Agrawal 2008).

Against this background, this article interrogates several debates on women, social capital and food security-insecurity in Zimbabwe. Firstly, it explores how climate change impacts are increasing poorly resourced women's susceptibility to unprecedented food insecurity threats in smallholder farming systems. Secondly, it considers women not as victims in this regard, but as rational and calculative beings who improvise various strategies to avoid succumbing to extreme climate change impacts. Thus, the study examines how they use social capital in adapting to droughts, and how they use it to

maximise their gains during favourable farming conditions. In particular, the study highlights how bonding, bridging and linking forms of social capital boost women's efforts to counter perennial food insecurity. Thirdly, and lastly, the article investigates the effectiveness of the types of capital combined, or the absence of one or two of them, in ensuring sustainable coping and adaptive strategies to food insecurity.

Conceptualising Social Capital

Social capital is fast gaining attention in climate change discourse, despite the fluidity of its conceptualisation (Flores and Rello 2003). This is as a result of growing challenges to the conventional, grand narrative on adapting interventions. Current attempts to debunk the 'one size fits all' approach of the grand adaptive narratives are paving the way for context-specific and grassroots-based coping and adapting strategies. Social capital is proving to be one of the acceptable and sustainable ideal solutions to adapting to the food insecurity problems that affect women in smallholder farming. In the social capital discourse, contemporary development practitioners and scholars are popularising this approach, drawing inspiration from two proponents of social capital, namely Putnam (1993) and Coleman (1990).

Increasing praise for the thesis of social capital aside, its definition remains shrouded. To date, there has been no straightforward definition of it although there also are no direct antagonistic conceptualisations. In general, the concept was defined by Hanifan Lydia, cited in Agrawal (2008) as: 'The tangible asserts that count for most in the daily lives of people, namely goodwill, fellowship, sympathy and social intercourse of the individuals and families who make up social units.' Most scholars agree that social capital is a fundamental tool mainly used in development, poverty reduction initiatives and coping with economic shocks and other wide-ranging disasters (Moser 2008; Grootaert and Narayan 2004). The common belief surrounding social capital is that its maximum utilisation remains the bedrock of adaptation to and coping with disasters, especially amongst poorly resourced and vulnerable communities and localities (Agrawal 2008).

Social capital is described in the context of three building blocks: bonding, bridging and linking capital (Grootaert and Narayan 2004). Central to these building blocks is networking. The social networking phenomenon is rooted in trust, collectivism and balanced reciprocity amongst various social units. The social units' capacity to cope or deal with disasters is realised if group members fully utilise the three types of capital correspondingly (Woolcock and Narayan 2000; Pelling 2003). Social units with an intact collectivism will bank and draw on exclusive benefits through

their membership of established networks and other social structures. Needless to say, communities or social units that are riddled with conflict, disunity and individualism are vulnerable and have a weak adaptive capacity to ongoing and impending disasters.

Bonding is one of the most highly rated social tools. Szreter and Woolcock (2004) conceptualised bonding capital as horizontal relationships that are built on foundations of trust and cooperation. They further explained that bonding capital also relates to closely knit groups and associations which are brought together by homogenous sociodemographic traits. The traits include family, culture, tribe, ethnicity and race. The perceived role played by these traits is to galvanise the group members to pursue beneficial common interests at grassroots level. For instance, relying on family members and other social associations is a common phenomenon in coping and adapting to idiosyncratic and systemic risks and disasters. Putnam (1993) stated that collectivism and reciprocity offer social protection, stewardship and improved welfare for vulnerable group members. In smallholder agriculture, poorly resourced farmers collaborate in sharing labour and seasonal information as a form of adaptation or improving their crop and livestock production. Szreter and Woolcock (2004) discovered that smallholder farmers who have cohesive relations in the form of farm groups and other associations have an implacable advantage in dealing with risks and hazards that threaten their livelihood. Bonding capital is considered to be a defence strategy and sustainable in supporting autonomous and planned adaptation.

Bridging capital is also an important component of social capital and adaptation. Putnam (1993) described bridging capital as a form of networking that extends to connections between different groups, villages and communities. Just like bonding capital, bridging capital is common at horizontal levels. The power of bridging relationships is facilitated and nurtured by the presence of common interests that are pursued by different groups, villages and communities. In his studies, Putnam (1993) discovered that bridging capital is mediated by differences in ownership of critical resources, such as grazing lands, farmlands and water reservoirs, among other things. Automatically, well-organised societies with wider bridging connections and reciprocity are less vulnerable to external risks and hazards. The bridging social groups consciously spread their risk and adaptation by co-opting counterparts who may be better off when disaster strikes (Agrawal 2008).

The third important tool in the social capital domain is linking capital. Sanginga et al. (2004) defined linking capital as engagement with institutions and agencies that are in positions of higher influence. Practically,

it means that poorly resourced groups in villages and communities forge vertical links with outside and influential local institutions, donor agencies, private organisations and government departments in pursuing benefits to cope and adapt to disasters. The link between the vulnerable groups and powerful and resourced local institutions is used to benchmark the ability to adapt and cope with disasters that threaten human life, property and livelihood strategies (Putnam 2000). It also has been highlighted that strong linking capital provides in-groups or associations and social units with vital external financial resources, technology and new technical expertise (Njuki et al. 2008). It is expected that vulnerable social groups will take advantage of these resources to help them boost their coping and adaptive capacities.

Unfortunately, the absence of external institutional intervention reduces the resilience and adaptive capacity of poorly resourced smallholder farmers even if they have strong bonding and bridging capital (Sanginga et al. 2004). It is clear that institutional intervention needs to be synchronised with the exact needs and requests of the social units or groups in order to be successful (Agrawal 2008). In developing strategies to cope with drought, for example, it is prudent that, before intervention, in-depth research and consultation are evaluated and documented to ensure the acceptability and sustainability of these strategies. These sentiments echo observations made by Scott (1984), who explained that despite people being poor and vulnerable they still have the power to reject what does not suit them. Through the use of such 'weapons of the poor', uncalculated linking capital intervention thus may be futile despite the social groups being steeped in poverty and disaster.

Social capital and maladaptation

Whilst positive outcomes for social capital in adaptation have been acknowledged, some scholars have discovered its weaknesses (Aldrich 2012). According to Granovetter (1983), social capital also has its downside. For instance, too much bonded closeness may result in in-group hospitality and devastating out-group hostility, which usually weakens bridging and linking capital (Costa and Kahn 2003; Hawkins and Maurer 2010). This condition could be disastrous for adaptation because the chances of success of social capital-based adaptation are primarily buttressed by the coalesced efficiency of the different forms of capital. Communities that lack bridging and linking capital end up disrupting the normal flow of ideas, information, technology and financial aid that would otherwise help them to recuperate from tragedies and disasters (Hill and Matsubayashi 2005).

It is clear that excessive bonding capital may result in exclusion, especially of those who do not fall in the bracket dominated by closely knit majority groups. It has been noted that during disasters, in many cases, unhealthy relations that previously manifested through heightened ethnocentrism and tribalism result in the exclusion of other vulnerable victims and survivors of disasters. For instance, following the earthquake that ravaged Haiti in 2010, groups of a lower status were prejudiced against and marginalised in accessing housing services and other survival consumables (Rhodes 2012). In the worst cases, the well-bonded majority may end up reinforcing antisocial practices, such as excluding stigmatised social groups like widows, orphans and people living with disabilities (Aldrich 2012). A good illustration is the study by Mayoux (2001) on micro credit schemes in Cameroon. The male-dominated scheme excluded widows from benefiting from credit. Thus, the bonded male relationships acted as a barrier to women's welfare as they strived to supplement their small-scale farming activities through credit schemes. Such outcomes are referred to as maladaptation (Barnett and O'Neill 2010). Maladaptation becomes the new order if some disadvantaged members of the society remain marginalised and prone to disasters.

Maladaptation is also prevalent if bonding and bridging capitals are not supported by strong linking capital (Bernier and Meinze-Dick 2014). Vulnerable social groups that are hard-hit by disaster, such as hunger and famine, are in great need of external intervention for coping and adapting. Indeed, intervention by strong local institutions may save lives during dire conditions. Communities that have failed to harness this capital are destined to fail in coping and adapting to disasters (Di Gregorio et al. 2012; Gugerty and Kremer 2010). The 'weak ties' as expressed by Gravonetter (1983) usually result in dire consequences that make other permanent victims.

Women, Food Security-Insecurity and the Adaptation Conundrum in Zimbabwe

Women in Africa contribute a large share of agricultural labour across the continent – some 40 per cent. They are of vital importance to the household food security that is generated through rearing poultry, small livestock and growing subsistence food crops (Chisi 2019). It is also estimated that they produce 60 per cent to 80 per cent of the food that is consumed in developing countries. Women in Zimbabwe's rural economies are primarily involved in smallholder farming. According to the Zimbabwe Smallholder Organic Farmers Forum (ZIMSOFF), smallholder farmers are the highest producers of diverse food crops, estimated to be over 80 per cent of what the whole country consumes. Rural women are responsible for the bulk of this

contribution. However, women's food production is heavily compromised by a wide range of factors, chief among them being climate change.

Increasing and extreme climate change impacts have detrimental effects on poorly resourced women in smallholder farming. Studies have shown that most female smallholder farmers have limited adaptive capacity to provide household food security (Manjengwa and Matema 2014). Statistics have shown that, in 2013, about 72 per cent of female smallholder farmers were devastatingly vulnerable because of overdependence on climate-sensitive rain-fed agriculture (ZIMSTAT 2013). Women's limited or low adaptive capacities are exacerbated by many other factors, which include patriarchal regimes, poverty, economic hardship, political instability, cyclones and clumsy land reform (Manjengwa and Matema 2014; Reid et al. 2012). Furthermore, the government's ineptness in establishing gender-sensitive national strategies and policies on adaptation have left female smallholders drowning downstream of poverty and food insecurity. As a result, most food-insecure women and their households survive on food handouts from donor communities (Reid et al. 2012).

Like other sub-Saharan African countries, Zimbabwe is ranked amongst the most vulnerable to extreme climate change disasters (Gutsa 2014). As indicated earlier, a composite of other threats to agriculture and increasing climate change risks reduces the adaptive capacity of the women who dominate smallholder farming regimes. Adapting to climate change and variability is highlighted as a government's main responsibility, though with some help from civil society (Reid et al. 2012). However, in Zimbabwe, the persistent agricultural failure and lack of political will and ineptness has reduced the government's ability to consider women as a special group in the food insecurity-adaptation matrix (Reid et al. 2012; Manjengwa and Matema 2014; Dodman and Mitlin 2015). Thus, they have not provided gender-sensitive alternative livelihood strategies and agricultural and climate change adaptation policies that support women as key players in food production.

The need for solid and practical gender-sensitive climate change and agricultural policies remains one of the top suggestions made by many agricultural development scholars (Manjengwa and Matema 2014). They suggest that gender-sensitive and innovative policies will solve common problems that increase gender inequalities in the food insecurity and adaptation battle. Despite government's recognition of the need to provide such policies, practical action remains a dream to be realised (Gutsa 2014). The main problem cited is that the formulation of policies in Zimbabwe is riddled with complexities driven by rigid patriarchal regimes, politics

and economic constraints (Dodman and Mitlin 2015). The persistence of these complexities hinders the full realisation of the pledges made when the government joined the UNFCCC and the Kyoto Protocol in 1992 and 1995 respectively (Chagutah 2010; Gutsa 2014). Even though joining the two giant climate change institutions opened an opportunity to form multiple agriculture and environmental policies, Zimbabwe's government still lags behind in terms of other fundamental issues, like tackling gender inequality.

Literature on food security, insecurity, adaptation and resilience is calling for a new attitude to farmers – that they should not be treated as a homogenous group (Walker et al. 1999). Farmers are different based on different variables, such as wealth, social class (including gender), agro-ecological location, age and experience. Considering these differences is critical for proffering context-specific coping and adaptive strategies to disasters. For example, poorly resourced smallholder women need coping and adaptive mechanisms that directly suit their conditions and experience. In order to empower women, it is prudent to consider grassroots-based mechanisms such as social capital and indigenous knowledge systems. Grassroots-based adaptive strategies do not only equip them with assets and resources but also increase their preparedness to deal with future known and unknown climate change shocks and stresses (Agrawal 2008).

Problem Statement

The burgeoning literature on the food security-insecurity matrix in Zimbabwe is biased towards studies at the national level. These studies usually reflect national food deficits and government's incapacity to feed its starving poorly resourced populations. Most of the intervention strategies and national policies are also skewed towards the grand national level yet disregard the potential of the most affected victims' ability to turn their fortunes around. For example, it is known that women and children are more vulnerable to droughts and food deficits compared to men, yet government treats vulnerability to food insecurity as a gender-neutral phenomenon.

This study does not follow the general trend, but considers women as key and calculative beings who are capable of dealing with food insecurity problems. It focuses more narrowly on how women at smallholder levels are improvising and using social capital to reduce their vulnerability to food insecurity. The success of social capital in enhancing their capacity is expected to fulfil the expectations of the Human Development Index and the Sustainable Development Goals (SDGs), which call for total development of the general populace without discrimination.

Materials and Methods

The study was carried out in Ward 21, in Bikita District. I used qualitative methodology in the selection of research participants and data collection, exercising my personal judgement and purposive sampling in identifying the participating villages as well as information-rich female participants. The selected villages were Ziwacha, Nebarwe and Negwari. Including three villages helped to provide a greater diversity of experiences and strategies employed by women in their on-farm and off-farm activities to overcome serious household food deficits.

For data collection, I used focus group discussions, in-depth interviews and key informant interviews. For the in-depth interviews, I selected female participants who had hands-on experience of smallholder farming systems. The major purpose here was to gather invaluable data on their experiences in the day-to-day provision of food for their households. Also, the female participants provided detailed explanations on how they used social capital in fighting food security threats.

For the focus group discussion, I purposively drew participants from the three selected villages. I conducted four focus group discussions from each village and each group comprised twelve female participants who were actively farming. The discussions revealed diverse and complex perceptions and experiences that they encountered in the farming enterprise.

Lastly, I purposively selected three key informants who had active roles in assisting smallholder farmers in on-farm and off-farm activities in Ward 21. The CARE International programme officer gave information on how CARE International serves as a linking capital partner with women in smallholder farming and other off-farm activities to reduce vulnerability to drought. The PLAN International programme officer also provided information on how they help women to improve household food security. Thirdly, the extension service officer detailed how they help smallholder farmers, particularly women who are more active in farming, to cope and adapt to adverse climatic conditions that threaten food security. The information on the tools and participants is shown in Table 1.

Table 1: Data collection tools and projects

Data Collection Tool	Justification	Projectsi n Respective Villages
Focus group discussion	For cross-checking and validating information gathered from individual responses.	Four focus group discussion were conducted on the Boer goat project, community gardening, Food For Assets and Fushai in all the three villages.
In-depth interviews	As custodians of household food security, women were considered to share how they utilise social capital in coping and adapting to food insecurity.	The interviews were evenly conducted in line with projects in Negwari, Ziwacha and Nebarwe.
Key informant interviews		
Extension services officer	Provides invaluable information on seasonal outlook and trends and advises farmers on constructing crop-ping calendars and time-lines, which reduces vulnerability to droughts.	The extension services officer is a government employee who oversees all the farming related interventions in the area under his jurisdiction.
CARE International field officer	Provides the linking capital that boosts women's efforts in farming as they cope and adapt to climate change induced food insecurity.	The officer oversees the Boer goat project in Negwari village, community gardening and Food For Assets (FFA) in Ziwacha and Nebarwe villages respectively.
Plan International field officer	Like CARE International, they support women-based projects that strive to fight increasing food insecurity.	The officer manages various projects: the heifer project in Negwari, which was taken over by men; community gardening; Food for Assets; and Fushai. These were all operating in the three villages under study.

Study site

Bikita is one of seven administrative districts in Masvingo Province in Zimbabwe. Most parts of Bikita lie in an arid and semi-arid belt with poor topographic characteristics. Most smallholder farmers in this district depend on subsistence crop production of small grains, such as rapoko, millet and sorghum. For livestock production, they herd cattle, donkeys, goats and sheep. Bigger livestock like cattle and donkeys are used as a source of draught power as well as a safety net to cushion them during severe food insecurity. Furthermore, during severe droughts, most of the vulnerable farmers depend on food aid from donors; others migrate to towns and cities or work on irrigated commercial farms in Chipangayi, Chipinge, Middle Sabi and Birchneough. Figure 1 shows the position of Bikita District in Masvingo Province and its place in the broader map of Zimbabwe.

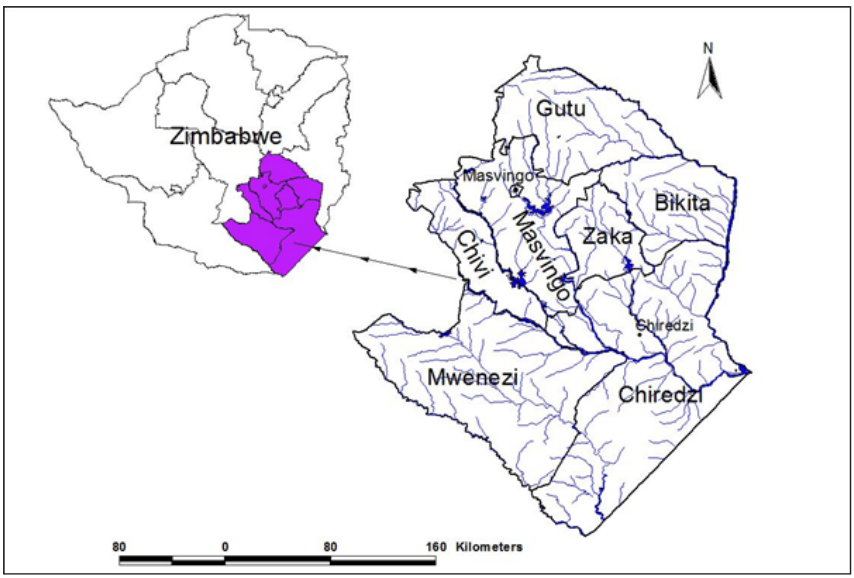

Figure 1: Map of Zimbabwe
Source: Google Maps

Presentation of Findings

Bonding capital as an adaptive strategy amongst women

Data gathered through key informant interviews, in-depth interviews and focus group discussions showed that Ward 21 of Bikita is vulnerable to perennial droughts. The study participants acknowledged that drought is

one of the greatest challenges to their agro-based livelihood. However, the study also revealed that women used various forms of capital to survive the difficulties brought by drought. With bonding, bridging and linking capital, women improvised strategies such as the communal pooling of resources, migrating and diversifying their livelihood. These strategies helped to reduce their vulnerability as well as improve their general wellbeing in the face of escalating climate change risks and hazards. The study highlighted various on-farm and off-farm projects in which the women were engaged. The projects common to all the villages in the study were the Boer goat project, the Fushai credit scheme, community gardening and Food for Assets (FFA). In most cases, women participated in these projects with the help of children. In a few cases, women received minimal help from their male counterparts. Women's active participation in these projects was understood as their commitment to provide enough household food.

Information gathered through the focus group discussions with female farmers revealed that, in 2014, CARE International introduced a Boer goat project in Negwari village. Boer goats are a breed (weighing between 90 to over 130 kilograms when fully grown) that quickly adapts to weather and climatic conditions without difficulty. Also, they grow fast and are highly fertile. Initially, the project was targeted for all the people in the community, but most of the men withdrew to focus more on the heifer project that was concurrently introduced by PLAN International.

On the inception of the Boer goat project, female respondents explained that they were organised into groups of eight participants. Their task was to keep and breed the Boer goats and later sell the offspring. In addition, the goats were meant to improve the breed quality of local goats. Selling the goats was projected to supplement household income particularly during unfavourable farming seasons. Despite intervention by CARE International, participants in the study commented that the project did not succeed as projected due to conflicts that were mainly caused by the men's withdrawal. The women confirmed that they wanted to avoid scenarios where they appeared to be challenging their husbands in owning livestock. In Bikita, livestock ownership remains a prerogative of men. Whilst women are not barred from owning livestock, it is socially problematic for them to do so. This is caused by men's fear that their power and social status would be challenged. Thus, men's honour is maintained by their direct control of livestock while women are left to deal with food security issues in the fields and other household chores. Commenting on the failed Boer goat project, two key informants confirmed the collapse of the project introduced by CARE International. Box 1 highlights their views.

Box 1: Key informants' reflections on the Boer goat project

EXTENSION SERVICE OFFICER – CARE International consulted us on the self-help projects which are less hectic and which could help in improving household income. Due to the dryness of the place, we advised them to introduce the Boer project since goats are drought resistant. However, the project failed to succeed because the withdrawal of men created divisions and conflicts in households and later amongst women on their own.

PROGRAMS OFFICER FROM CARE – After our pilot study and consultation with the extension services officer in Negwari, we introduced the Boer goat project to cushion local farmers from perennial droughts. Though the project targeted women as the main household food producers, we later decided to involve men as well to reduce household tensions and infighting and unfortunately, the men were the first to withdraw and women also failed to remain in the project.

Women in Ziwacha, Negwari and Nebarwe also engaged in successful community gardening projects. Since their area is more rocky and dry, the women from Negwari banked on bridging capital, and travelled to Nebarwe and Ziwacha to take advantage of the availability of the vleis and swampy areas and intensify the gardening projects there. The participants expressed that they got support from CARE International and PLAN International. The two NGOs drilled the boreholes and fenced the gardens to protect them from being devoured by domestic and wild animals. The NGOs also offered them high-value horticulture crops such as cabbages, tomatoes, onions and legumes, like beans, among others. Information obtained from the focus group discussions and in-depth interviews showed that the projects progressed well compared to the Boer goat project. Some participants were of the view that the success of the gardens was based on the fact that men have no interest in such activities. Though they cited that the income from the horticulture was low, it helped them with some modest income to supplement food particularly during failing dryland farming. They also commented that the produce not only helped them in supplementing food availability and providing a steady income but also reduced malnutrition. Despite the positive outcome from gardening, they pointed out that this project overburdened them with labour as they strived to increase food availability.

The key informants explained the various processes, successes and challenges experienced in the gardening projects. A CARE International programme officer confirmed that community gardening was one of their successful projects, mainly in Nebarwe and Ziwacha villages. He acknowledged that the availability of good water reservoirs there aided the

successful intensification of gardening. Furthermore, he credited the success of the project to good social relations amongst the women as the main participants. Equally, men's absence from the gardening projects allowed women to fully exploit their potential without any fear of challenging their husbands. A difficulty was that women producers needed to access better markets so that they didn't end up getting far less than expected. Low income was noted to reduce their capacity to supplement food, especially during dry seasons with low harvests.

The study observed another successful project, known as Food For Assets (FFA). As linking capital, FFA was introduced by CARE International and PLAN International in their efforts to assist smallholder farmers, particularly women, in enhancing their farming productivity. The participants in the focus group discussions stated that the two NGOs educated and supported local farmers in the construction of their own dams, which could save many functions. The dams were expected to store water for domestic animals and be used in the community gardens and for other domestic uses. To motivate participation, the two NGOs gave a 50-kilogram bag of mealie meal to every participating household. The small-scale dam project attracted women mainly because they wanted the mealie meal immediately more than the anticipated benefits of the project in the long run. Focus group discussions showed that the lack of food at home pushed them and their children to participate, at the same time as repelling men from committing themselves to the project. The key informant from CARE International (programme officer) confirmed that the small damming projects were successful since most women from different households were committed to the new development.

One of the noted projects undertaken by women, who were driven by bonding and linking capital in the three villages, was the establishment of small-scale credit groups known as the Fushai project. Through focus group discussions and in-depth interviews, women confirmed that the concept, training and help in managing the Fushai scheme came from CARE International and PLAN International officers. Participants in the credit schemes explained that they formed small groups to which they paid a nominal fee on a monthly basis. Though the project seemed lucrative, however, it created different problems for different social groups Participants in the three villages joined groups depending on their level of earning. Those who earned less money joined groups that contributed between USD 1 and USD 5 per month. The other group consisted of high earners who could afford to contribute USD 20 per month. The motive behind the Fushai project was to invest the collected money and use it to buy and sell goods, provide loans, and brew and sell traditional beer. The main motive for collecting this money was to generate interest. The accrued

interest was expected to be equally shared every six months. The sharing of interest was not standard across the different social groups. Focus group discussions and in-depth interviews reflected that some members bought and shared goods whilst the most vulnerable bought mealie meal as their main source of food. Most of the participants confirmed that the money was helpful in supplementing other benefits they received from farming and gardening. Nevertheless, it was noted that conflicts arose from time to time around the management of the Fushai projects, though their impact was not very disruptive to their general operations.

Discussion of Findings

Women, social capital and food security

Smallholder farming communities with adaptive strategies that do not incorporate social capital as a critical factor are vulnerable to common climate change disasters like droughts. Such vulnerable communities are usually poorly resourced and have low adaptive capacity. In most cases, the lack of critical livelihood resources, particularly amongst women, exacerbates their vulnerability to severe droughts. As noted in Ward 21 in Bikita, local farmers' exposure to precarious ecological conditions worsened their vulnerability at the same time as reducing their potential to cope, adapt and build resilience against drought. The current literature on the climate change-food security-adaptation nexus highlights that communities with strong social bonds are well prepared to face disasters with minimal outside intervention (Putman 1993). In adaptation, collectivism allows members to pool their communal resources and diversify their strategies, among other ways of enhancing their livelihood chances. On the other hand, social units with weak social capital are more susceptible to known and unknown climate change disasters. As elsewhere, social groups or units with robust horizontal and vertical connections are better positioned to communicate, share and deal with disasters such drought.

As noted in the study, the three forms of social capital are never independent from each other. Despite the fact that women were given linking capital, which introduced the Boer goat project, the weak bonding capital distorted the whole project, which had been earmarked to increase household livestock and income. The literature reflects that the success of social capital is perhaps determined by all three types of capital functioning and corresponding fully at the same time (Putman 1993). This is supported by Gugerty and Kremer (2008), whose study in Kenya and Rwanda showed that well-bonded community farming groups failed to yield positive results due to the lack of linking capital. Likewise, in Ward 21, poor bonding

capital is seen as the cause of the failure of the Boer goat project. However, household and inter-group conflict and mistrust rendered the whole exercise obsolete. Szreter and Woolcock (2004) stated that though bonding capital is critical, its functional value is compromised if there is a lack of corresponding action from all the stakeholders. Furthermore, the absence of a corresponding relationship between the forms of social capital usually leads to the emergence of welfare dependence.

Interesting observations can be noted from the experiences cited in Ward 21. In as much as some scholars have been calling for vibrant external intervention to bankroll coping and adaptive activities, the absence of grassroots co-operation affects everything. The works of Njuki et al (2008) reflect that linking capital is there to complete the missing components in the social capital and adaptation discourse. Their arguments defy the popular views that romanticise the value of linking capital as critical to adaptation on its own. Romanticising linking capital in adaptation to climate change impacts is tantamount to regarding vulnerable smallholder farmers as blank slates. Women's adaptive potential to deal with food deficits is largely affected by other wide-ranging factors, which can hinder the good intent of collectivism. As noted in the Boer goat project and the Fushai scheme in Ward 21, social dynamics can be detrimental to the effective functioning of bonding, bridging and linking capital in adaptation. Community-based social associations do not always guarantee successful results. Sometimes, they generate antagonism amongst the members, as noted in the Boer project. The existence of social divisions precludes community associations from coping and adapting to climate change shocks and stresses (Pelling 2003). Associations riddled with fragmentation fail to work together collectively in reducing the impacts of climate change on all community members.

In other projects, such as the Fushai scheme, Food For Assets and community gardening, the most interesting fact is their success, which is largely attributed to social harmony and unity among women in their execution. Good horizontal and vertical relationships helped in the undisrupted production of these projects. For instance, the success of the damming project is largely attributed to women's common interests of getting mealie meal for immediate consumption and. In this scenario, harmonious relationships made a substantial contribution to the women's total production in smallholder farming. As noted by Portes and Landholt (1998), co-operative efforts by vulnerable social units mark the starting point of building resilience and adaptation to disasters. Most group members will benefit from working together. Notably, women share their

challenges across the general community without much difficulty. Also, women collectively deal with household challenges such as food insecurity without much need for top-down and 'one size fit all' approaches to attain food security. The success of social capital-bound adaptation expands their capacity to sustainably adapt to food security. It also offers them the ability to deal with food security challenges on their own with minimum external help and avoid submitting to dependence on the donor community.

Conclusion

From the study, it has been observed that social capital is a critical component in coping, adapting and building the resilience of vulnerable farmers in Ward 21, in Bikita District. It was noted that communities without the three forms of social capital are not in a good position to adapt and cope with climate change disasters like drought. Linking capital on its own does not help in coping with disasters but needs to be combined with bonding and bridging capital. Romanticising the role of linking capital has been rendered redundant as far as the provision of sustainable strategies that enhance food security are concerned. The success of women's projects is anchored on the healthy nature of grassroots livelihood strategies. These strategies allow women to pool their communal resources for resilience as well as diversify their strategies rather than depending on smallholder farming. Though social cohesion is problematic in most communities, combining grassroots strategies with external links guarantees sustainable coping mechanisms against droughts. Combining the three types of social capital forms solid ground for sustainable adaptation against food insecurity amongst women in smallholder farming. Lastly, it can be highlighted that all smallholder farmers with poor social capital cannot adapt to climate change disasters like drought. Also, interventions in terms of adaptation and development need to be initiated from the grassroots so as to guarantee acceptability and sustainability of the strategies.

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