



## **Prospects and Challenges for Food Security in Rural Zimbabwe: Unearthing the Contestations in Conservation Farming in Mukore Village of Bikita**

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**Abstract.** The paper sought to investigate the challenges and prospects for effective institutionalization of conservation farming as a food security measure amidst the gross incidence of drought and failure of traditional subsistence agriculture in Zimbabwean rural areas. The study endeavored to achieve this through exploring the contestations among various stakeholders in their efforts to educate the rural folk about the viability of conservation farming as an option for curbing the proliferation of droughts and improve livelihoods of the rural communities. Of the many findings elicited by the research, it was established that, the perceptual, technocratic and political contestations among various actors in conservation farming should be addressed and rationalized for the fruition of the efforts to create sustainable agricultural framework and rural livelihoods. The research thrived through Norman Long's Actor Oriented Approach in which the various power dynamics between agents due to different positions, knowledge and influence presented differential 'lifeworlds' for contestations. The research methodologically proceeded within the qualitative framework in which case, in-depth interviews with key informants and focus group discussions were used as data gathering tools.

**Key words:** conservation farming, food security, rural livelihoods, contestations, drought

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### **Introduction and Background**

Agriculture is undergoing a significant transformation in order to meet the related challenges of food security and climate change especially in Sub-Saharan Africa. Adger (2003) note that the problem of food security has been more intensely pronounced in recent years with the threat posed by recent trends such as climate change, water and rainfall scarcity. To improve crop production in marginal rainfall regions rural farmers have to consequently adopt farming

practices that conserve fragile soils and improve its fertility (Deressa: 2008). Agriculture is the main economic activity in Mukore village though it is a drought prone area characterized by extreme weather patterns, poor soils and perennial rainfalls. For Aagaard (2007) most farmers used to practice conventional tillage method which inverts the soil and destroys its structure and has led to increasing land degradation. Conventional tillage also entails intensive ploughing and turning the soil using ploughs. Posthumus (2010) argue that in place of conventional tillage, conservation farming in its current manifestation was introduced three decades ago and is currently being practiced on more than a million hectares of land worldwide in more than 50 countries.

Conservation farming is a very colossal farming practice which however comes in a variety of packages (Adger: 2003). In Mukore village of Bikita district the precedence has been given to the basin tillage primarily because it is presumed to be reliable and cheap to use for the rural farmers who are alleged to be poor. Conservation agriculture may sound like an old hat, but it is breathing new life into African smallholder farming (Giller: 2009). Through the basin tillage the principle is therefore on digging holes or basins without using conventional ploughing method. Organic or inorganic fertilizers will be applied in the basins where applicable and 3 seeds would then be planted in these holes. According to Oldrieve (1993) the digging of basins is done between August and early October using simple tools for instance hoes, and it is recommended that the digging of these basins to be done annually using the same position so as to minimize soil turnover and soil erosion as well as maintaining the soil structure which prevent soil from growing old, culminating sustainable agriculture. Conservation farming is one of the most concrete and promising ways of implementing sustainable agriculture in practice (FAO, 2007).

According to FAO (2011) conservation agriculture is not an entirely new concept; some farmers have long practiced aspects of it, although they have not so named it. Conservation farming is defined as an agricultural system involving minimum soil disturbance, permanent residue soil cover and diversified crop rotation. According to Ervin and Ervin (1982) it is a mix of agronomic practices proposed

as essential for soil and water conservation, building and maintaining healthier soils, sustainable optimal crop production and maintenance of a rich agrobiodiversity. According to FAO (2007) conservation agriculture relies on three basic principles that is minimum soil disturbance or if possible no tillage at all, soil cover-permanent if possible and crop rotation. Across Africa, interest is growing to adapt, adopt and apply these principles to attain agricultural performance that improves productivity and protects the environment-it sustains environmental resilience (Aagaard, 2007). Basically conservation farming is a suite of land, water and crop management practices to improve productivity, profitability and sustainability. For Giller (2009) conservation agriculture has been practiced for three decades and has spread widely; wherever it has been adopted it appears to have had both agricultural and environmental benefits. According to Pittock and Jones (2009) African Conservation Tillage (ACT), a pan-African association, encourages smallholder farmers to adopt conservation practices. This is due to its heralded benefits of leading to sustainable agriculture as compared to the commonly used conventional tillage. It involves private, public and non-government sectors: farmers, input suppliers and machinery manufacturers, researchers and extension workers-all dedicated to promoting conservation agriculture (Hobbs: 2008).

In Mukore village conservation farming emerged due to failure of conventional tillage as well as climate change and it is claimed to reduce negative impacts of climate change by optimizing crop yields and profits while maintaining a balance between agricultural, economic and environmental benefits. In this regard conventional tillage is problematic and `conservation farming became solution because it circumvent and its promotion is influencing agricultural development in sub-Saharan African countries. This is complemented by Maddison (2007) who argued that conservation agriculture could be a panacea to sustainable livelihoods for smallholder farmers amid poverty, vulnerability, political and economic instability and civil conflicts. According to Haggblade and Tembo (2003) conservation farming is a technology that conserves, improves and utilizes resources through integrated management of available resources combined with

external inputs. Farmers are being helped to get specific inputs, such as herbicides and cover crop seeds, however many farmers are restricted access to both implements and inputs thus they are likely to delay planting, which adversely affects yields and income (Baudron: 2007). This technology is variously known as conservation tillage, no tillage, zero tillage, direct seeding or crop residue mulching.

Soils in Mukore village are inherently low in natural fertility and characterized by very low soil organic carbon, hence to improve crop production in this region, farmers have to adopt cultural practices that conserve fragile soils. For Pittock and Jones (2009) conservation farming has been widely embraced as an antidote to the perennial food insecurity situation of bedeviling drought prone regions in Zimbabwe. The donor community, international development agencies, regional political bodies, NGOs, farmers' organizations and national government involved in conservation agriculture promotion have often not taken into account perceptions of smallholder farmers of climate change and conservation agriculture as an adaptation strategy (Haggblade and Tembo,2003). Different actors in Mukore village perceive conservation farming differently due to different life worlds, smallholder farmers perceive conservation agriculture more as a means to access incentives and solve their immediate food security problems than as an adaptation to climate change. This is also complemented by Oldrieve (1993) who argued that this is because development of conservation agriculture has often been associated with some material incentives given to farmers, and these handouts or incentives have ranged from free hybrid seeds, fertilizers, cassava cuttings and food. The expectation of being given incentives further explains the gap between farmers' perceptions of climate change and adoption of conservation agriculture (Giller: 2009).

It is important to note that farmers are not a homogenous group hence their perceptions tend to differ on the basis of gender, age, race, sex and ethnicity. In Mukore village, due to gender differences women tend to welcome small grain seeds like millet and sorghum provided by NGOs whilst men prefer large grains. Hobbs (2008) notes most farmers perceive that tillage or soil loosening would

improve soil fertility, increase its ability to absorb rainwater, and help in controlling unwanted weed flora. Despite its much heralded benefits, conservation farming has however, been accepted with mixed feelings in Mukore village. Deressa (2008) argued that conservation farming tend to be difficult for many people to accept because it goes against many of the people's traditionally cherished beliefs. He argues that many people have questioned the feasibility of merely growing without ploughing the land first, which is the traditional blueprint. Even where appropriate land and management interventions have been fused in the traditional farming practices, conflicts, contradictions and power struggles between experts (that is, agriculture extension workers, relief workers, and other government officials spearheading the implementation of the project) have often militated against the achievement of the much heralded food security in these drought prone areas (Maddison,2007). Non-Governmental Organizations tend to glorify conservation farming and believed that it is sustainable for land and promotes productivity. According to FAO (2011) NGOs are prescribing conservation farming as the panacea to the plight of drought prone communities. As a result conservation tillage is being promoted as a panacea to the production challenges confronting rural smallholder families in Mukore village.

### **Statement of the Problem**

The proliferation of drought in rural Zimbabwe has led to numerous strategies one of which is conservation farming. Paradoxically the fruition of conservation farming has been marred with a multiplicity of contestations among the major actors in the community. These contestations have presented a challenge on rural livelihoods. From an interventionist perspective conservation farming is a panacea to food security but in Bikita it is ambiguous and has become a political arena where power dynamics between actors have taken toe to the detriment of effective mitigation of drought in this area. According to Jones (2009) there are various studies that concentrate on adoption, productivity, energy savings and other benefits of conservation agriculture yet there are some problems associated with conservation tillage such as the inherent power dynamics between the

actors. There are some challenges in using conservation farming as a vehicle towards better livelihoods for smallholder farmers. Most researches tend to focus on advantages of conservation farming hence glorifying the efforts whilst neglecting the challenges embedded in the farming method. For Adger (2003) another important aspect which is worth to note is that conservation farming is characterized by various actors with different perceptions. This research sought to unearth the inherent contestations which militate against effective conservation farming with the intention of providing a pragmatic base for positive recommendations.

### **Research Objectives**

1. To find out the role of major actors in conservation farming in Bikita district.
2. To examine the contribution of conservation farming to the local livelihoods in this area.
3. To assess the challenges surrounding conservation farming.

### **Methodology**

The research utilized qualitative research methodology. The choice of this methodology was informed by the nature of the study which was explorative in nature, consequently enabling the researcher to capture voices, attitudes, grievances, perceptions and attitudes of actors towards conservation farming. Qualitative methodology enabled the researcher to present a valid picture of conservation farming technique as a vehicle for improving livelihoods of poor rural farmers and the subsequent contradictions embedded in this farming technique; a virtue which could not have been realized through the use of quantitative methodology. Based on qualitative methodology the researcher went on to triangulate a number of research techniques with the goal of construing a holistic and vivid picture of conservation farming and the social cultural dynamics involved in the area in question. In line with qualitative methodology,

key informant interviews were used as the main data collection technique and were supported by focus group discussions (FGDs).

### **Conceptual Framework**

The research was mainly grounded in Norman Long's Actor-Oriented Approach. This perspective is important for integrating the conflicting perceptions, politics and contradictions of the local communities, in particular Mukore village. NGOs in this regard are prescribing conservation farming as a panacea to food security challenges confronting communities like Mukore village. Therefore Actor-Oriented Approach helps to understand the complexity of the relationships between the competing interests as the beneficiaries to the farming technology that is villagers in Mukore. It is this clash between perceptions of reality, systems of knowledge or moral universes which has come to dominate conservation issues. Long (1999) talked about power contestations in various social encounters which may be related to the contestations inherent in conservation farming in Mukore village of Bikita. Interfaces in rural development occur at points where different and often conflicting and diverging life worlds of social actors traverse in social situations. The notion of social interface offers a way of exploring and understanding the issues of diversity and conflict inherent in processes of external intervention and in this case conflicts are inherent in practicing conservation farming in Mukore village.

For Long (1999) negotiations at the interface are normally carried out by individuals representing particular interest groups in this study villagers' representatives in cahoots with local leadership have emphasized that such intervention strategies be formulated and executed by the beneficiaries as opposed to taking an etic approach, while the NGOs in tandem with extension workers operating in Mukore village have emphasized the significance of the said farming initiatives as the antidote to food security challenges. Thus they have consequently imposed conservation farming on the villagers culminating ambivalence and conflict of interests between various stakeholders involved. In this regard the borne of contention and struggle here is ownership of the

program. This analytical insight is also important in conveying the idea of contested arenas in which actors' understandings, interests and values are pitched against each other (Long, 1992). It enables to understand more fully the differential responses of local groups to planned interventions and in this case different stakeholders have benefited differently from conservation farming since some have welcomed whilst others reverted to conventional tillage.

It shows how interactions between intervening parties and local actors shape the outcomes of particular intervention policies. For Long and Long (1992) intervention processes are embedded in , generate social processes that imply aspects of power, authority and legitimation and they are more likely to reflect and exacerbate cultural differences and conflict between social groups than they are lead to the establishment of common perceptions and shared values. This conceptual analogy by Long tallies with the intricacies of this research in those issues of power that is control over the project has led to conflictual relations between different stakeholders in Mukore village. All actors operate mostly implicitly rather than explicitly with beliefs about agency that is they articulate notions about relevant acting units and the kinds of knowledge ability and capability they have visa-a vise other social entities (Long and Long, 1992). In this scenario it thus becomes imperative to counterpoise the voices, grievances, perceptions, experiences and practices of all social actors involved in the farming intervention program. Beliefs raises the question of how people's perceptions of the actions and agency of other shape their own behavior ; for example local farmers may have reified views about the state of actors which irrespective of their dealings with individual government officials can influence their expectations of the outcomes of the particular interventions. The same applies to the motives to the authoritative local actors, such as political bosses and village leaders in Mukore village.

The central issue is how actors struggle to give meaning to their experiences through an array of responses (Long, 1992). Thus Scott's (1985) concept of everyday forms of resistance tallies with the Actor-Oriented Approach making it imperative to understanding the experiences of Mukore village farmers on



conservation farming. Life worlds are realities that people adaptively construct for themselves; and are what lead people to react in the ways that they do when they confront an intervention. For Long (1992) interfaces at the areas in which social friction can be experienced, hence human beings have agency and are not passive recipients of any developmental intervention. Long's use of the notion of interface focuses upon the critical points of discontinuity between multiple actor's life worlds or domains which relationships became oriented two ways of bridging, accommodating or contesting each other's social cognitive worlds.

The concept of interface helps in understanding the transformation, production and reproduction of differences in cultural paradigms and provide a means by which individuals define their own cultural and ideological positions vis-à-vis those typifying opposing views in relations to development programs. Thus this theoretical framework is interested in comprehending the causes of smallholder farmers' rebellion to new development programs. Through a people centered approach to rural development it becomes easier to appreciate that in as much as proponents of conservation farming may want to exercise hegemony over the smallholder farmers owing to their agency engage in counter hegemonic struggles which might not be overt.

## **Presentation and Discussion of Findings**

### **Contestations surrounding conservation farming**

#### **Political contestations**

Findings from this research indicated that conservation farming in Mukore village has been turned into a political field instead of improving the livelihoods of the local people. This development initiative was replete with politics and power struggles. Findings have shown that politicians in Bikita hijacked the project and finally it benefited those of the opposition party instead of the intended beneficiaries in the society. These findings are in tandem with Nhodo et al's (2012) observation that, unless and until the civil society considers conservation farming as a political arena and the subsequent micro politics that

emanate from such a political field the goal of sustainable development will remain a pipe line dream. For Long (1992) the notion of social interface provides a useful heuristic device for identifying and analyzing the critical points of intersection between different fields since it is at these interfaces that discrepancies and discontinuities of value, interest knowledge and power are clearly revealed. According to Baker (2007) knowledge is present in all social situations and is often entangled with power relations and the distribution of resources. This is also complemented by Posthumus (2010) who said that conservation farming in rural communities entails lobbying first at policy level to convince politicians and government officials. This conceptual analogy by Long tallies with the intricacies of this research in that, conservation farming exhibited gross interplay or confrontation of expert versus lay forms of knowledge, belief and value, struggles over their legitimation and communication. Therefore, it qualifies the notion that knowledge emerges as a product of interaction, dialogue, flexibility and contests of meanings and involves aspects of control, authority and power. This is why Tagarirofa and Chazovachii (2013) submit that the panacea to this dilemma therefore rests in the desire to genuinely embrace, development from below or adopting a people centered developmental approach which considers beneficiaries of conservation farming as the real owners of the program for sustainable agriculture. This is also in line with the views of Long (1992) which shows that development interventions are shrouded in power contestations on the part of participants.

Interface situations often provide the means by which individuals or groups tend to define their own cultural or ideological positions vis-à-vis those espousing opposing views for instance opinions on agricultural development expressed by technical experts, extension workers and farmers seldom completely coincide. For Scott (1985) these differences in this regard cannot be reduced to personal idiosyncrasies but reflect differences lay down by differential patterns of socialization and professionalization which often lead to miscommunication or a clash of rationalities. This therefore shows that development practitioners should adopt a participatory approach so as to consider the indigenous

knowledge of the locals. Long further demonstrates the advantages of adopting an ethnographic actor interface approach to understand the ongoing dynamics of rural development and policy intervention processes. In this regard the involvement of the locals that is local participation would bring a sense of ownership to the whole community hence ensuring efficiency.

### **Social contestations**

Farmers are heterogeneous and face dynamic political and economic environments that determine adaptation trajectories taking care of ensuring constraints and opportunities for conservation agriculture. Traditional perceptions of the project in Mukore village of Mukore village contributed to neglecting of the project by most farmers and these traditional beliefs have caused a lot of challenges in implementing the program. According to Giller (2009) actors involved in promoting conservation agriculture often were not taken into account, perceptions of smallholder farmers. Findings have shown that NGOs have failed to take into account the beliefs as well as lived experiences of the locals. This is why FAO (2011) asserts that the donor community, international development agencies, regional political bodies, NGOs, farmers organizations and national government involved in conservation agriculture promotion have often not taken into account perceptions of smallholder farmers of climate change and conservation agriculture as an adaptation strategy. Findings in this regard are in tandem to research carried by Nhodo et al (2012) which revealed that the NGOs are failing to consider the various life-worlds and lived realities of the beneficiaries of development. Adaptation to conservation farming does not occur without the influence from other factors such as socio-economic, cultural, political and institutional that shapes the human environment interactions (Jones:2009). This is why Long (1999) submits that it is crucial to consider the indigenous knowledge of the beneficiaries of the development intervention. Traditionally, in Mukore village conservation farming method was preserved for the poor who neither had drought power nor the money to hire people to till the land on their behalf. Thus majority of farmers in Bikita district especially men have large herds of cattle

and donkeys which they used for drought power. Therefore they see no value in digging basins while they have enough cattle and donkeys for drought power in their lands. By virtue of this most farmers were against the idea of digging basins, hence against conservation farming.

Development practitioners in Mukore village took a top down approach and view the locals as passive recipients of development programs. Findings have shown that beliefs and lived experiences of the locals were not taken into consideration as NGOs tend to impose what they thought was the most efficient technique which suits small holder farmers in this drought prone region who also do not have drought power. This is in tandem with the views of Norman Long which shows that development practitioners should adopt a participatory approach so as to include the indigenous knowledge of the locals. This is also complemented by Gukurume et al (2010) who observed that conservation farming requires a lot of human capital whereby villagers invest in a lot of labor in digging basins, searching for organic fertilizers, mulching, weeding and related tasks. To do away with this high labor demand most farmers reverted to conventional farming method using their cattle and donkeys. Nhodo et al (2012) also note that farmers have a negative attitude towards conservation farming which is derived from the amount of labor invested. This seemingly qualifies the notion that human beings are rational and they engage in everyday forms of resistance.

In Mukore district NGOs also introduced the growing of crops which were not in favor of the locals, for example millet and sorghum. Bearing in mind that maize is the staple food, most farmers were in favor of maize at the expense of other crops, and hence they diverted these seeds for their own uses, like feeding their livestock. That's why Long (1999) says that these issues require a strong sensitivity to the processes by which the practitioner enters the life worlds of the other social actors and therefore implies a more reflexive type of understanding. The crux of this argument is that practitioners are involved in activities in which their observations and interpretations are necessarily tacitly shaped by their own biographical and theoretical perspectives (Barrios: 2008). Thus the trick of

good development practice and ethnography for Norman Long is to learn how to turn such subjectivities to analytical advantage.

Instead of using millet and sorghum for planting for food consumption, most farmers have used these seed crops to feed their livestock instead of planting. This view is in line with Long and Long's (1992) analysis that human beings are rational and calculative hence they do not accept every program put in place by developmentalists, they tend to link each concept to their beliefs as well as their experiences. This is also complemented by Gukurume et al (2010) who note that they do not opt out of the program but they simply pretend to embrace this conservation farming since they have benefits attached to participation in this conservation tillage. Since these seeds were freely given in Mukore village of Mukore village most farmers accepted and later choose those which were in line of their traditional beliefs.

The majority of farmers said that they thrive on misleading the NGOs into believing that they are full members of the project in order to get the much needed seeds and fertilizers. This shows that once they get these seeds and fertilizers they revert to the conventional farming methods. In this case most farmers resisted growing millet and sorghum on the basis that they were not used to those crops and long back chiefs used to arrest those who grow these crops on cultural basis. For Gukurume et al (2010) farmers' participation in conservation farming is just cosmetic and not genuine they only participate out of fear of disappointing NGOs. This tallies with Long and Long (1992) in that development practitioners should take into account the lived experiences of the locals to enhance their participation in the project. At the same time there is lack of monitoring and evaluation on the part of NGOs and this was an advantage to these farmers. Thus to NGOs they therefore pretend as if they are practicing conservation farming to make ends meet whilst they are still relying on their simple traditional forms which were viewed as unsustainable in this regard.

### **Technocratic contestations**

Findings in this study highlighted that there were knowledge contestations from all various stakeholders and resulted in knowledge dilemmas and controversies. According to Giller (2009) this required delving more deeply into the social and cultural discontinuities and ambiguities inherent in the battlefields of knowledge that shaped the relations between local actors and development practitioners. Adoption of conservation agriculture in Mukore village has been slow because farmers lack relevant skills, knowledge and equipment, yet there are inadequate extension services and poverty among others. Adger (2003) claimed that that conservation farming is a new farming technology which needs proper education to the beneficiaries. This conceptual analogy tallies with the intricacies of this research in that extension workers in Bikita were educated so as to teach farmers how to practice this new farming method. According to Giller (2009) the extent of sustainable adaptation depends on the adaptive capacity, knowledge skills, robustness of livelihoods and alternatives, resources and institutions accessible to enable undertaking effective adaptation. In this case the village was used to the traditional farming methods, whereas NGOs were preaching the gospel of modern knowledge systems, so there was need for education for them to adapt to the new farming method and do away with their unsustainable methods of farming. This is why Long and Long (1992) assert that the image of battle fields of knowledge was chosen to convey the idea of contested arenas in which actors' understandings, interests and values are pitched against each other. NGOs and extension workers in Mukore village have consequently imposed the said farming practices on the villagers culminating ambivalence and conflict of interests between various stakeholders involved. In this regard there was emergence of various kinds of negotiated orders, accommodators, oppositions, separation and contradictions. Actor-Oriented Approach in this perspective is important in the quest for integrating the conflicting perceptions, politics and contradictions of the local community and the NGOs that are prescribing conservation farming practicing as the panacea to food security challenges confronting communities like Bikita. Extension workers who were educated by the NGOs to educate the community in adopting conservation farming also face a plethora of challenges in educating the locals. That's why Tagarirofa and David

(2013) submit that the community is supposed to participate and be involved in all dimensions of program implementation for complete empowerment. Thus in Mukore village lack of empowerment led these extension officers to face challenges to educate the whole community at the same time they were two versus the whole community.

Education from extension officers was not easily accepted by the community since they largely embrace orthodox farming at the expense of conservation farming. In this case the community call for indigenous knowledge systems whilst NGOs embrace modern knowledge systems hence a radical shift from orthodox farming was needed. This is in line with the views of Long (1999) which shows that indigenous knowledge systems should be taken into consideration by development practitioners. Thus this radical shift was therefore resisted by members of the society and such battlefields arise within and across many different institutional domains and arenas of social action. Even chiefs who were regarded as custodians of culture showed some form of resistance since they were the conservatives in the society who teach generations about their traditional beliefs. This tallies with the view of (Scott, 1985) that development interventions are characterized by some form of resistance on the part of beneficiaries. For Long (1992) the approach implies a clear epistemological standpoint by acknowledging the existence of multiple social realities that is the coexistence of different understandings and interpretations of experience and it questions the ontological realism of positivist science that is of a real world that is simply out there to be discovered. Thus Giller (2009) claimed that knowledge has been conceptualized as involving ways of construing and ordering the world and not as a simple accumulation of facts or as being unified by some underlying cultural logic, hegemonic order. Findings have shown that chiefs were appointed as leaders in conservation farming on the basis of their powers, but they were not knowledgeable about conservation farming that's why they also resisted the idea. It was therefore better for the NGOs to educate both chiefs and extension officers since they were also to lead in the process. Chiefs on the basis of preserving beliefs and cultural aspects of the society since they were not equipped with the

major tenants of conservation farming. For Long (1992) knowledge therefore emerges out of a complex interplay of social, cognitive, cultural, institutional and situational elements. This is why Baudron (2007) asserts that it is therefore always essentially provisional, partial and contextual in nature and people work with a multiplicity of understandings, beliefs and commitments. Thus the community saw the prescriptions as too technical that become a challenge in this case.

### **Impact of conservation farming on livelihoods**

The role of conservation farming in improving livelihoods of smallholder farmers facing low productivity in agriculture and extreme food insecurity is debatable. Findings from this research indicated that conservation farming has done a lot to improve food security in Mukore village of Bikita district. For Hobbs (2007) farmers adopted conservation agriculture to enhance land productivity in order to ultimately improve livelihoods. Findings have also shown that livelihood options of farmers in Bikita district were limited to agriculture and vegetable vending. Due to climate change their livelihoods were seriously disrupted. Although livelihood strategies are limited, agriculture remains the main source of livelihood in Bikita district. The adoption of productivity enhancing technologies often accelerates livelihood changes in economic and socioinstitutional conditions of actors (Haggblade and Tembo, 2003). The most vulnerable groups in Mukore village adopted conservation farming unlike those who were regarded as rich that is having the drought power. This view is in contrary with Giller (2009) assertion that wealthier households with higher asset endowments are more likely to practice conservation farming than their poorly resourced counterparts.

Findings have shown that conservation agriculture has uplifted living standards of rural women in Bikita district. For those farmers who invested their labor in conservation farming and regard it as *diga udye* (dig and die) project they finally produced better yields as compared to those who neglected the idea and revert to orthodox farming. This is in tandem with Giller (2009) claim that conservation



farming generally produces higher net returns compared to conventional tillage in the long run. For the NGOs conservation tillage is a panacea to agriculture and a way of improving food security. In Bikita harvest statistics comparing production from the same farmers' plots using conventional and conservation farming has shown that conservation agriculture is quite promising. The main objective of these interventions was to improve livelihoods of these smallholder farmers (Posthumus: 2010). This is also in line with Rogers' (2003) claim that conservation agriculture often accelerates livelihood changes in economic and socioinstitutional conditions of actors involved as would be expected. For most women farmers in Bikita district conservation farming has uplifted their standards of living in a variety of ways since they have accepted small gain seeds as well as vegetable seeds. Thus for FAO (2011) this led to precipitation of increases in food security, household income and general welfare, which are good and desirable livelihood outcomes especially for the poor groups of smallholder farmers.

Conservation farming in this case has something to do reducing hunger and imminent threat of malnutrition related illness. This view is in tandem with the research carried by Gukurume et al (2010) which shows that women farmers in Chivi welcomed small grains given to them by the NGOs whilst men were in favor of larger grains. By virtue of providing vegetable seeds to most women farmers their standards of living were uplifted to a greater extent since they were able to generate income through selling of those vegetables, onions, peanuts, tomatoes and others. Women in this case were allowed to participate in the program hence bringing their needs to the development practitioners. Thus for the Actor-Oriented Approach local participation lead to sustainable development. Evidence in this regard shows that conservation agriculture generally produces higher net returns as compared to conventional tillage in the long run although it may be associated with low short returns (Adger, 2003). Conservation farming in this case is by and large, about a soil and water conservation or water harvesting in the basins. This then dictates the utilization of soil and water in a carefully planned and where possible sparing manner. For Oldrieve (1993) this

will make the high level of crop production. The view that women's needs were recognized led to the success of this program to most women farmers. For Long (1999) local participation is very crucial whereby the needs of the locals are recognized and taken into consideration.

Despite strong assumptions that conservation agriculture technology increases crop productivity and yield stability Giller (2007) argue that promotion of conservation farming as a panacea to agricultural problems has gone without rigorous debate. To other farmers conservation farming has failed to improve their livelihoods due to a number of factors. This is mainly because farmers still rely on simple traditional technologies and tools and continue practicing conventional tillage since they have questioned the rationale behind having their donkeys which they once used for drought power. For Jones (2009) conservation issues are thus inevitably linked to cultural and political questions concerning the version of reality to play, the allocation of blame, the distribution of costs and benefits and issues of autonomy, power and control. It is due to their traditional beliefs that they tend to view conservation farming as against their traditional ways of planting. Thus some farmers have abandoned the idea and continue with their traditional methods, thus it become evident in this regard that conservation farming in Bikita district had failed to improve livelihoods of some farmers. Another issue was that conservation farming is labor intensive hence it become evident that not all stakeholders benefited since some were against this high investment in human capital. Migration of the able bodied population in search of greener pastures also reviewed that some farmers remain in poverty since there were not able to bear the brunt of conservation farming, especially the elderly populace. Thus in this regard conservation farming failed to improve livelihoods of some stakeholders due to different factors as discussed earlier.

## **Challenges surrounding conservation farming**

### **Labor Intensive**

There was an ambivalent relationship between exponents of conservation agriculture and the beneficiaries and this was a challenge to the program in Bikita district. Findings have shown that farmers in Bikita district were against the intensive labor invested in conservation farming hence they have developed a negative attitude towards the program. For NGOs conservation farming owing to its virtues can be aptly called *diga uge* (dig and survive) program implying that it leads to improved food security, whilst for most farmers it was regarded as *diga ufe* (dig and die) program. According to Gukurume et al (2010) it became evident that a lot of labor is required in the digging of basins, applying organic fertilizers as well as mulching. For Long (1999) interactions between intervening parties and local actors shape the outcomes of particular intervention policies, often with significant repercussions on patterns of change at regional, national and even international levels. This conceptual analogue by Long tallies with the intricacies of this research in that, the relations of NGOs with the locals shaped the outcome thus the community engaging in everyday forms of resistance. Such a negative attitude towards conservation agriculture was derived from the amount of labor invested into it vis-à-vis the output realized from this rural development venture. Thus there was a conflictual relationship between the beneficiaries and the NGOS.

### **Migration**

The foregoing challenge with regards to conservation farming in Bikita district has been exacerbated by the serious short supply of labor in the concerned households. According to Adger (2003) it ought to be noted that the population in Zimbabwe is largely comprised of the elderly who are failing to bear the brunt of conservation agriculture. Findings have shown that most farmers are unable to fully participate in the program because most of their children have migrated in search of greener pastures due to the threat challenges posed by climate change. This is in tandem with Hobbs (2008) who claim that hand hoe conservation farming technology recommends digging 15850 permanent conservation basins per hectare, thus being labor intensive. Especially the elderly farmers were unable to participate in conservation farming due to its labor demand. This

population dynamic can be partly attributed to massive labor migration haunting the nation in general and Zimbabwe in particular (FAO, 2001).

### **Resource constraints**

Another challenge was that NGOs implemented conservation farming in Mukore village of Bikita without proper supporting structures as well as strong financial back up for farmers. Findings have shown that NGOs in Bikita district faced resource constraints which were a challenge to most farmers to fully participate without proper inputs. In conservation farming weed and pest control should be done using synthetic herbicides, like glyphosate and pesticides since the method itself allow growth of weeds as compared to conventional tillage. According to Baudron (2007) the constraints in question include lack of sufficient equipment for land preparation, sowing, weeding and harvesting. Therefore high labor requirements still remain a major constraint especially during the wet season when incessant rains give farmers limited chances to weed their fields. Large scale herbicide application is not also feasible given the financial leverage of most farmers, hence manual weeding is always paramount. Findings have shown that NGOs used few resources they have to boost living standards of the locals since they were facing a lot of challenges in terms of resources.

### **Conditions**

Different conditions in Bikita district have been another challenge. Rogers (2003) questions the rationale of implementing conservation agriculture as a package among smallholder farmers given different local conditions. Thus challenges faced with attempted wholesale adoption of conservation farming has resulted in decomposition of conservation farming into those aspects that can be easily implemented and those that need to be decomposed to suit specific conditions of farmers. According to Baker (2007) conservation farming can improve livelihoods of farmers but it is necessary to be conscious about the different ecologies and categories of farmers in different areas. Findings have shown that in Bikita conservation farming improve yields differently due to different conditions in the

society, for instance the prevalence of different soil types. Most areas are characterized with sandy soils which are not suitable for this farming method whilst others may be favorable as well.

### **Top-down**

Conservation farming in Bikita district has often been top-down, considering people as inanimate recipients. Development programs designed with little reference to the perceptions and capacities of local people have often failed, as they were not perceived by the local communities to be the most effective. Findings have revealed that NGOs in Bikita district did not take into consideration the traditional beliefs of the locals hence this has fostered some form of resistance among farmers themselves. That's why Norman Long calls for adopting ethnographic studies so as to incorporate the beliefs and lived experiences of the local people. Participatory approaches to development thus become important as development practitioners understand the ongoing dynamics of rural development and policy intervention policies. This is in tandem Tagarirofa and Chazovachii (2013) who submit that the level of community participation is not only minimal but it is also top down. Through participatory programs it is possible to mobilize local knowledge and resources to provide strategies for sustainable agriculture and the protection of rural environments.

### **Micro politics**

NGOs faced a challenge in effective monitoring of the project since politicians hijacked the project and turned it into a political field insisted of improving the livelihoods of the local community. Findings have shown that the opposition party took control over conservation and then benefited those of the opposition party instead of the intended beneficiaries. This tallies with Tagarirofa and Chazovachii (2013) who assert that group conflicts and political influence are obstacles militating against effective participation of the local people. In this case politics in Mukore village of Bikita threatened the goal of conservation farming.

This is in tandem with the interface analysis which asserts that interfaces are areas in which social friction can be experienced due to different perceptions held by different actors. There was also a conflictual relationship between politicians themselves on the basis that which political party was to take overall control over the project.

### **Lack of knowledge among local leaders and personnel capacity**

In appointing local leaders to be leaders of conservation farming as well as giving powers to appoint committee members also led to serious challenges in Bikita. Findings have shown that these local leaders were not knowledgeable about conservation farming hence they only wanted to benefit that is being self-centered. This also tallies with Long (1992) in that knowledge convey the idea of contested arenas in which actors' understandings, interests and values are pitched against each other. In this case these local leaders did not cherish the goals of conservation farming instead they contributed for them to benefit from free inputs. Nhodo et al (2012) dwell on micro politics embedded in the implementation of conservation farming and revealed that instead of improving livelihoods conservation has been plunged into a battlefield. It is also important to note that these chiefs and village heads are so conservative to their traditional ways of doing things hence they continue embracing their traditional ways of ploughing at the expense of conservation agriculture. Locals leaders in turn appointed those committee members on political basis hence each and every concept in Bikita was turned into a political field, thus this was a major challenge to NGOs. It is also important to note that NGOs in this case appointed extension workers who were very few as compared to the population size of the community hence they found it very difficult to effectively educate the whole community. According to Gukurume et al (2010) extension workers usually are more inclined towards project because they receive more benefits than the local farmers. Thus they faced a plethora of challenges as well as resistance from the community. They therefore embraced the concept in order to get incentives from the NGOs.

## Conclusion

It is indisputably clear from the research that food security challenges in Bikita district can be improved only if different stakeholders effectively participate in the very development processes meant to be their remedy. This study has demonstrated conflicting and contradicting perceptions towards conservation farming in Mukore village of Bikita district. From an interventionist perspective, this conservation farming technology in general has been heralded as the viable option for those vulnerable communities to deal with the detrimental effects of climate change as well as perennial droughts in this community. On contrary conservation farming in Bikita had sadly failed due to an ambivalence of factors that is lack of local participation, micro politics and traditional beliefs among others. Thus conservation farming paradoxically has done very little to do away with food security challenges confronting villagers in Mukore village of Bikita district. The bulk of the farmers disliked the project for lacking a human face since it is not participatory, labor intensive, lack supporting structures, imposed by NGOs thus being a top down approach and embedded with micro politics and of very little significance to their culture. All these factors are against success of this program in Bikita district. Therefore to salvage conservation farming from its vestiges it is imperative for the NGOs in question to consider the local community's voice, set up supporting structures and avoid adequate input. In this regard locals should not be treated as passive victims of their poverty but as knowledgeable actors who have agency. The quest for sustainable agricultural livelihoods will therefore remain elusive unless and until the voices and priorities of the local people such as those in Mukore village of Bikita district are heard and incorporated into development intervention programs.

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