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Building Community Resilience in the Post 2015-16 El Nino Drought: Challenges and Emerging Issues in Bubi District, Zimbabwe

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Abstract: *The post 2015- 16 El Nino drought era has been coupled by recurrence of climate change induced hazards like floods and drought which have weakened the agricultural sector which is a major source of livelihood for the rural households, diminished infrastructure, and have caused human mortality through water borne diseases in Zimbabwe. This study examined the efficacy of household adaptation strategies' response to persistent hazards, explored challenges and emerging issues in building community resilience and highlighted key viable solutions to enhancing community resilience in Bubi district. Using mixed research methods of questionnaires, key informant interviews and desk reviews, the study established that, as a result of trainings from MELANA of adoption and promotion of drought tolerant small livestock production, local communities in Bubi dominantly adopted off farm methods inclusive of goat production (54%), vending and trading (31%) and poultry production (15%). 'On farm' household adaptation methods practiced included the practice of climate smart agriculture technics which are however resulted in improved yields. Emerging challenges towards resilience building included institutional weakness (45%), dependency syndrome (32%), poor infrastructure (15%) and financial exclusion (8%). The study acknowledges that a shift from humanitarian aid to resilience promotes self- sustenance, persistence, adaptation and transformation which is sustainable to withstand the impacts of hazards like the El Nino drought as witnessed in Bubi District.*

Key Words: *Resilience, Adaptation, climate change*

I. Introduction

The increasing frequency and intensity of disasters and humanitarian emergencies has inevitably resulted in great suffering and loss of life, posing a major threat to long-term development, growth and poverty reduction efforts, particularly for the poorest and most vulnerable people in developing countries. Nyahunda and Tirivangasi (2019) state that, crises and shocks worsen already precarious livelihoods and negate opportunities to escape from poverty. Climate change induced hazards such as floods and drought have been frequent and persistent in Southern Africa, prompting the donor community and governments to employing a resilience building approach to development. The El Nino phenomenon has proven to be threat to communities' livelihoods across many countries of the world. As acknowledged by Food and Agriculture Organization (FAO) (2016), in Southern Africa, the impacts of El Nino have been felt across all sectors such as food security, nutrition, agriculture, water and sanitation, energy, health and education which has led to the suffering of vulnerable populations and to economic contraction. Exacerbated by other climate change induced shocks and hazards, the El Nino drought left a trail of weakened social fabrics, corroded livelihoods and further impoverishment of communities. Climate related shocks and stresses are posing significant obstacles to poverty reduction. Mpambela and Mabvurira (2017), state that, climate change could result in an additional 100 million people living in extreme poverty by 2030 unless climate-informed development interventions prevent some of its disastrous consequences. However, the 2014/15 season was characterized by dry spells which affected a number of SADC countries whose impacts were very disastrous to these agro based economies. However, some donor agencies have since shifted their focus from "handout" programming to resilience programming as a way of improving communities' absorptive, adaptive and transformative capacities in the face of recurrent shocks. It is against this background that the concept of "Resilience" gained attraction amongst development agencies and governments in the South.

The "resilience" phenomenon is becoming influential in development and vulnerability sectors such as disaster risk reduction, climate change adaptation and has particularly been prominent in domains such as social protection and in areas where shocks, stresses, hazards and risks are topical. Boutin and Smith (2016), state that, extreme weather events tied to climate change are increasingly threatening people's property, livelihoods, and

lives. To break these cycles, governments and development partners are creating strategies to reduce vulnerability and build resilience, thus the ability of individuals, households, communities, institutions, and ecosystems to withstand crises, recover from them, and adapt so as to better withstand them in the future. The 2015/16 El Nino drought was however recorded as the worst phenomena in the millennium across the Southern African region giving prominence to community resilience building in countries like Zimbabwe. It is against this background that this research forms an enquiry into challenges and emerging issues encountered in the quest to building community resilience during the post 2015/16 El Nino drought in Bubi district.

In the Matabeleland north province, the Zimbabwe Resilience Building Fund (ZRBF) is implemented by a consortium of NGOs led by Welt Hunger Hilfe (WHH) under the name Matabeleland Enhanced Livelihoods, Agriculture and Nutrition Adaptation, (MELANA). The consortium engages key stakeholders including rural district councils, and other government departments, together with NGOs and community based organisations to plan and implement resilience building activities addressing infrastructure, food and nutrition security market linkages and community safety nets. The study therefore seeks to examine the efficacy of household adaptation strategies' response to persistent hazards, to explore challenges and emerging issues in building community resilience and to highlight key viable solutions to enhancing community resilience in Bubi district (Matabeleland North Province).

II. Problem and its Context

Two consecutive years (2015-16) of erratic rain and dryness, the El Nino drought, has emanated as the worst drought after a 35 year period in Southern Africa inclusive of Zimbabwe, resulting in consecutive failed harvests. This has raised concerns over the need to help communities from sinking deeper into poverty as a result of these climate change induced shocks and hazards. The Government of Zimbabwe declared a state of disaster on 4 February 2016 due to the severe El Nino-induced drought affecting the country. Oloo and Omondi (2017) notes that, following two successive years of drought and poor harvests, coping mechanisms of the rural population have been exhausted. In Matabeleland north province (Inclusive of Bubi district), the absorptive, adaptive and transformative capacities of communities are weak leaving them vulnerable to shocks and stresses including drought, dry spells, animal diseases, crop pests, fire outbreaks, wildlife conflict, HIV/AIDS and diarrhoea. These shocks often leave communities with weakened livelihoods and vulnerable to further impoverishment hence the call for resilience building. Low levels of adaptive capacity have been demonstrated through poor agricultural production, scarcity of livelihood options outside agriculture, poor access to finance for livelihood investment, poor access to water and sanitation exacerbated by negative behaviour and cultural practices such as marginalisation of women and youth. However, rural communities have remained vulnerable to climatic-induced shocks although they are employing a plethora of mechanisms to mitigate the effects of climate change. This is because their high exposure to climate change risks does not match their adaptive capacity. The researchers therefore identified such factors (challenges) or obstacles to building community resilience, which became the focal point of the study

III. A Resilience Option in Poverty Reduction

Frankenberger *et al.* (2012) posit that many development stakeholders take as a statement of fact that resilience is a significant innovation for sustainable development, one that should inform the conceptual frameworks that define practical aspects of programming. Resilience research has created ideas and bits of knowledge, altogether known as "Resilience thinking," to manage challenges in natural resource management. Bahadur *et al.* (2015), highlights that, resilience has become a popular concept in development policy, where it is commonly viewed as a property of individuals or communities that can be "built" through investments. The conceptual insights developed by resilience thinking, are well suited to understanding how poverty traps occur and are maintained, given the common conceptual basis of a development paradigm shift from humanitarian aid only to resilience building by international aid donors. Davies *et al.* (2008), identify a lack of understanding of the integration of poverty and ecosystem dynamics. To address this shortcoming they outline a theory of 'development resilience' with the poverty trap as the central concept that focuses on the dynamics of individual and collective well-being. In this framing, Barboni *et al.* (2017) states that poverty traps are defined and investigated primarily in relation to economic thresholds. In a similar fashion, traps have been increasingly used as a central concept to describe persistent poverty in social-ecological systems and resilience research where the biosphere is perceived as the basis for development. What these approaches have in common is that they frame poverty as the outcome of complex, dynamic and adaptive interactions between social and ecological factors and frame these interactions as 'systems' (Bahadur *et al.* (2015). Resilience in development envisions poverty reduction in three distinct ways which include persistence, adaptation and transformation.

In understanding the concept of building community resilience to disaster prone areas, it is fundamental to start by taking a glimpse at the link between poverty and disasters. FAO (2014) takes note that disasters create

poverty traps that increase the prevalence of food insecurity and malnutrition. As witnessed in many parts of the world, droughts, floods, hurricanes, tsunamis and other hazards spoil food, destroy agriculture, livestock, fishing, food processing infrastructure, assets, inputs and production capacity. FAO (2014) also concur that market access, trade and food supply are interrupted, income reduced, savings depleted and livelihoods eroded. Drought, plant pests and diseases such as locusts and armyworms, animal diseases like African swine fever, and food contamination or adulteration have a direct economic impact by reducing or eliminating farm production, thus inevitably affecting prices, trade, and market access, decreasing farm income and employment. Economic crises such as increasing food prices force the poor to sell their assets, diminish sustenance utilization, and decrease their dietary assorted variety and access to safe and quality nourishment. Davies *et al* (2008) concur that, global processes and climate induced crises are changing and expanding the risks already faced by poor and vulnerable people in rural areas, particularly those involved in agriculture and other ecosystem dependent livelihoods. Bahadur *et al* (2015), note that climate change induced hazards like El Nino drought essentially require the promotion of "resilient agriculture", which envision persistence, transformation, self-sustenance and adaptation of rural livelihoods from shocks.

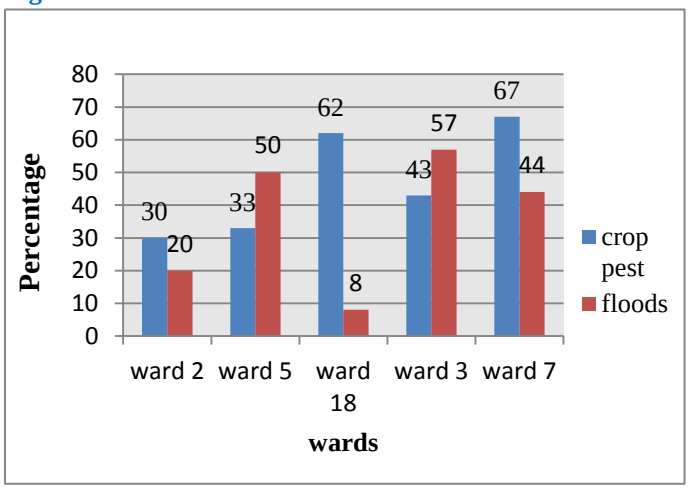
IV. Methodology

This study adopted a combination of both qualitative and quantitative research methods (triangulation methods). The intention was to lessen the deficiencies and biases that come from any single method. The mixed approach combined the fundamentals of qualitative and quantitative for the comprehensive purposes of breadth and depth of understanding. Time and resource constraints resulted in the researcher adopting convenience sampling. Gosh (2003) allege that convenience sampling entails selecting a sample from those to whom the researcher has easy access. Of the 23 wards in Bubi district, 10 wards were purposively selected in order to achieve the broadest spatial coverage. Sampled wards were ranked most vulnerable by the ZIMVAC 2016 report. The designed questionnaires were randomly administered to 100 respondents (10 households per ward) to represent the entire population in the collection of quantitative data. Also, purposive sampling was used in the identification of 10 key informants through interviews. Key Informant Interviews enabled the researcher to conduct in-depth investigations with local community leaders, district level officers from NGOs and government departments. Also desk reviews were conducted were the researcher was authorized to review a number of documents such as the district strategic plan, district resilience plan, MELANA project quarterly reports, High Frequency Monitoring monthly bulletin and ZIMVAC District Report. Quantitative data collected was captured in SPSS and descriptive statistics were used to analyze data. The analysis derived frequencies, graphs and tables. On the other hand, qualitative data was analyzed and categorized in different themes in accordance with the study's objectives and were presented in a narrative form by the researcher.

V. Analysis and Discussions of Results

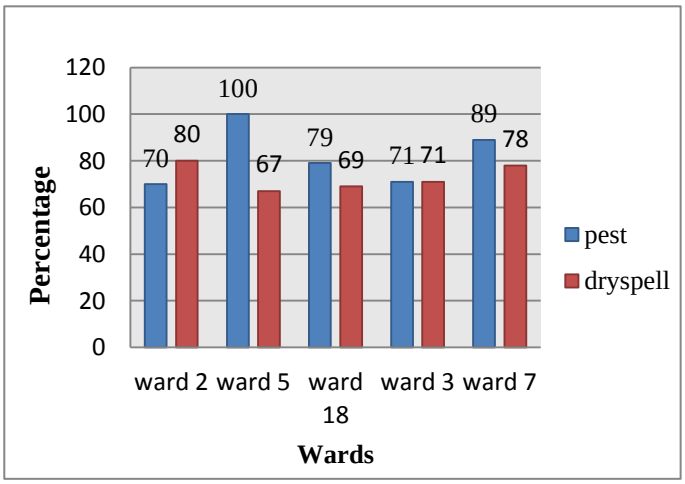
5.1 State of the Post 2015- 16 El Nino Seasons in Bubi District

Figure 2: An Illustration on Hazards for 2016/ 17 Season



Source: Desk Review

Figure 1: An Illustration on Hazards for 2017/ 18 Season



Source: Desk Review

Figure 1 and 2 shows the impact in percentages of varying hazards experienced by five wards in two seasons. The study traced hazards experienced in Bubi during the two seasons post 2015/16 season through desk reviews. It is evident that crop pest, dry spell and floods were the main successors of the 2015/16 El Nino drought in

Bubi. Crop pest specifically the fall army worm were manifest in both seasons whereas excessive rains in the 2016/17 season resulted in floods yet the following season, (2017/ 18) dry spells were experienced by the same areas. These are the realities of climate change whose occurrence has a bearing on the lives and livelihoods of farmers who are heavily reliant on crop and livestock production. According to the qualitative data, presence of fall army worm coupled with dry spells resulted in reduced household harvests. Therefore, the study established that Bubi district was heavily hit by climate change variations soon after the El Nino drought which had devastating impacts on households dependent on ecosystem for livelihoods.

5.2 Efficacy of Household Livelihood Adaptation Strategies' Response to Persistent Hazards

The study established that a bulk of off farm household strategies, on farm household strategies and access to productive assets have been practiced during the post 2015- 16 El Nino drought. However, the effectiveness of these strategies is based on the ability to adapt to climate change effects, hence leading to a number of household responses in adopting them.

5.2.1 Off Farm Household Adaptation Strategies

Table 1: An Illustration on the Off Farm Household Adaptation Strategies

Practices	*frequency*	*Cumulative %*
Goat production	54	54.0
Local Vending and Trading	31	31.0
Poultry Production	15	15.0
Total	100	100.0

Source: Survey data

Table 1 highlights 3 off farm adaptation strategies adopted in response to persistent climate change induced hazards in the 10 wards of Bubi district. The majority households (54%) indicated goat production as their major off farm adaptation strategy. Data gathered through key informant interviews (KIIs) show that efforts by AGRITEX and MELANA through entrepreneurship trainings have resulted in increased small livestock production uptake (goat production 54%) and local vending and trading (31%) during the period of 2017 to 2019. During an interview session, respondents voiced that:

> "We were trained on the adoption of goat production as an adaptation option since our climate environment is being threatened by hazards and is not conducive for cattle rearing especially during drought". (Interview 2, 2020)

> "We usually trade with commodities such as cooking oil and sugar which are sent by our children and relatives from South Africa and some from Botswana" (Interview 4, 2020)

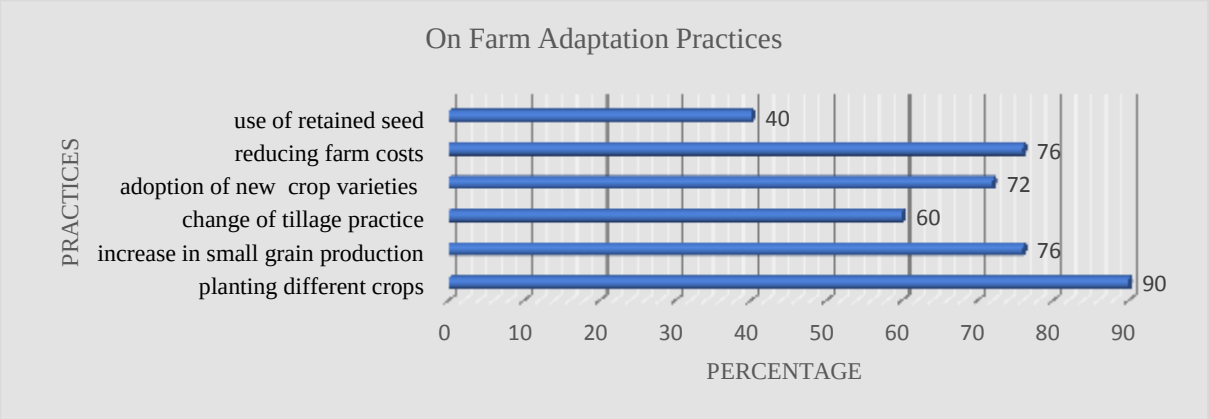
> *"Nxa kulendlala imuli ezilabantwana abaphandle kwelizwe kumbe abasebenzayo yibo abaphangisa ukuphepha"*. (Interview 3, 2020). (When there is drought, families with children working outside the country are quick to recover).

> "We have facilitated community trainings on entrepreneurship skills and promoted adopting of small livestock production which are core in assisting locals in using local resources to cope with existing hazards". (Interview 1 2020, MELANA Field Officer)

However, the study established that, the El Nino drought period led to reduced livestock herds mainly for cattle, thus households have adopted goat production which is drought tolerant as a recovery means. Entrepreneurship skills development from MELANA project have facilitated trading locally and opting for drought tolerant small livestock for vulnerable communities. These findings concur with Darcan and Daskiran (2014) who state that goats are remarkable as one of the species which can be utilized in goat production in the future due to their ability to continue their productivity under heavy climate conditions. Also, the survey also found out that community members are reliant on remittances for shock recovery. These findings concur with Couharde and Generoso (2015), cited in Surungu *et al.* (2017) who argue that, despite inconclusive evidence on the micro and macro impact of migrants' remittances on economic development, many researchers have put forward a stunning argument that remittances are indispensable for households' climate risk management strategies. Therefore, local households rely on their children from neighboring towns such as Bulawayo and across the border (South Africa and Botswana).

5.2.2 On Farm Household Adaptation Strategies

Figure 3: An Illustration on the On Farm Household Adaptation Strategies



Source: Survey.

The study used a questionnaire survey to assess on farm household adaptation strategies (presented in figure 3) during the 2019/20 farming season. Due to a number of trainings by AGRITEX extension services and MELANA, crop diversity through promotion of climate smart agriculture (CSA) emerges to be a predominant (90%) adaptation practice in Bubi as compared to the pre El Nino Drought seasons where households practiced mono cropping with limited attention to other crops. Small grain production has increased from a record of 45% in the 2014/15 season to 76% during the post El Nino drought season. As confirmed by the AGRITEX reports, households that practiced small grain farming in the 2017/18 season recorded better yields despite the existence of a dry spell. Building adaptation capacity calls for the adoption of crop varieties that are drought tolerant and high yielding. 72% of the sampled households planted short to midterm maturity maize and sorghum varieties like Quality Protein Maize Mama Variety and Sorghum Macia. 40% of the sample use retained seed from previous seasons due to lack of access to proper seed, inability to buy seed and lack of knowledge. These findings concur with Abegunde, *et al*. (2019) who state that, climate-smart agriculture as a concept enhances the resilience of agricultural systems by balancing the priorities between adaptation, mitigation, and food security. Climate-smart agriculture, as a concept, is aimed at helping farmers adjust to climate change and minimize its plausible unfavorable effect on their agricultural activities and livelihoods. However, the study established that, households through their adoption of climate smart agriculture (CSA) methods is key in determining the likelihood of a household to bounce back from food insecurity shocks such as the El Nino drought, dry spells and crop pest.

5.2.3 Access and Management of Productive Assets

The study brings to light that access and management of productive assets is adopted as a household responsive mechanism to persistent hazards in Bubi district. The study explores efforts to create new asserts for the at risk communities and further analyze household/ community access to productive assets towards ensuring resilience to shocks and stresses. District records show that MELANA has resilience plans whose part of the goal is to build infrastructure in the operational wards. Key informant interviews revealed that rehabilitation of dip tanks and construction of animal health center in the wards (5 and 17) have a potential of improving animal health conditions and better the livestock conditions for markets. One respondent indicated that;

> "Without the rehabilitation support of dip tanks and animal health centers from MELANA, our livestock would be at risk of death in our ward" (Interview 6, 2020).

> "I joined Income Savings and Landing Scheme (ISALS) savings group and we are investing in goat and poultry production as a way of survival from climate change shocks" (Interview 9, 2020).

The study established that, the 2015/16 El Nino drought had negative impact on household/ community assets. The household survey established that all wards experienced livestock mortality, livestock emaciations, sell of livestock and disposal of asserts during the El Nino drought. As part of recovery strategies affected communities adopted small livestock like goats which have proven to be drought tolerant. Insights from qualitative data show that small livestock production projects are mainly preferred by women in all the wards and have become a

source household income through vending. In coping with economic shocks and financial stresses ISALs have invested in assets such as goat and poultry production. However, KIIs and desk studies confirm that a household with access to productive assets is better positioned to withstand shocks.

5.3 Challenges and Emerging Issues in Community Resilience Building.

Table 2: Ranking of Obstacles to Community Resilience Building.

Number of Respondents					
Obstacles		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Institutional weaknesses	45	45.0	45.0	45.0
	Dependency Syndrome	32	32.0	32.0	32.0
	Poor Infrastructure/ Sanitation	15	15.0	15.0	15.0
	Cash Crisis and Financial Exclusion	8	8.0	8.0	8.0
	Total	100	100.0	100.0	100.0

Table 2 shows obstacles towards community resilience building in Bubi district. Being a new development paradigm in Bubi district, community resilience building has been affected by numerous challenges. KIIs and questionnaire data on challenges and threats were ranked according to severity. Institutional weaknesses (45%) were identified as the leading threat to resilience building and also the dependency syndrome (32%) by local households in Bubi district. However, poor infrastructure (15%) and cash crisis and financial exclusion (8%) were also identified as obstacles affecting resilience building. However, below are the findings from key informant interviews (KIIs) focusing on the highlighted obstacles towards building community resilience.

5.3.1 Institutional Weaknesses

The study established that institutional weakness which encompass limited financial funding, government dependency on NGO due to lack of funds and poor knowledge sharing between service providers and project beneficiaries inevitably affected building community resilience. However in investigating the access to information and usage of the high frequency monitoring systems (HFMS) by government departments which is meant to assist in the gathering of real time data and information on identified trigger indicators, monitoring performance and informing interventions for resilience programming, the study found out that there was limited access to the system due factors such as lack of knowledge and poor Information Technology (ICTS) facilities. The study also found out that information from HFMS is not cascaded down to development structures and local communities. During interview sessions, respondents pointed out that;

> "Lack of financial funding has affected the implementation and realization of the District Strategic and Resilience plan. These plan may remain only in theory and lacking in implementation if funding persist to be inadequate" (Interview 10, 2020, Extension Services Officer)

> "Bubi relies on funds from ZRBF- MELANA project which are only limited to 10 wards leaving other 12 wards susceptible to shocks" (Interview 7, 2020).

However, based on the above responses from local authorities and service providers, it is worth noting that institutional weaknesses have affected community resilience building through lack of funding. Also as highlighted on table 2, a total of 45 households (45%) also confirmed how serious the institutional weakness phenomenon is. However, these results concur with North (1989) who argue that institutions matter substantially in determining the growth path and outcomes of development. Oloo and Omondi (2017) further argue that weak grassroots institutions characterized by low capacity, lack of funding, failure to exploit collective capital and poor knowledge sharing and access to information, are common barriers to sustainable land management and improved food security, exposing their communities to hazards like El Nino drought.

5.3.2 Dependency Syndrome

Community dependency syndrome as highlighted on (table 2) emerged second with 32 households (32%) stating the phenomenon as a threat that affect resilience building in Bubi district. Relief and free aid projects have embedded dependency syndrome amongst community members thereby affecting self-reliance and limiting communities' ability to prepare for, respond to and recover from shocks sustainably. Dependency syndrome in this study is closely linked to conflicting development programs. The MELANA project is implementing resilience building project whose beneficiaries are also recipient of government free handout projects and World Vision cash transfer schemes, free farm input schemes and drought relief projects. Qualitative data gathered from KIIs show that free handout projects continue to discourage self-reliance amongst community members and remain a stumbling block to efforts for building communities' absorptive and adaptive capabilities. One respondent argued that;

> "…Community members prefer relief projects which offer free inputs and cash transfers over development projects that build resilience do not have immediate benefits". (Interview 1, 2020; MELANA Field Officer).

> "A project without immediate benefits attract less beneficiaries and however tend to suffer low participation as compared to other humanitarian projects" (Interview, 10)

However, from the above response, it is clear that the dependency syndrome dogma among rural communities affects programs which aim to ensure community resilience through efforts which encourage investments in instilling knowledge, promoting use and effective management of assets as a way of ensuring community resilience from shocks. Marcus (2007) concur that, social assistance breeds among beneficiaries dependency syndrome, undermining people's self-sufficiency and motivation to climb out of poverty through their own efforts.

5.3.3 Poor Infrastructure/ Sanitation

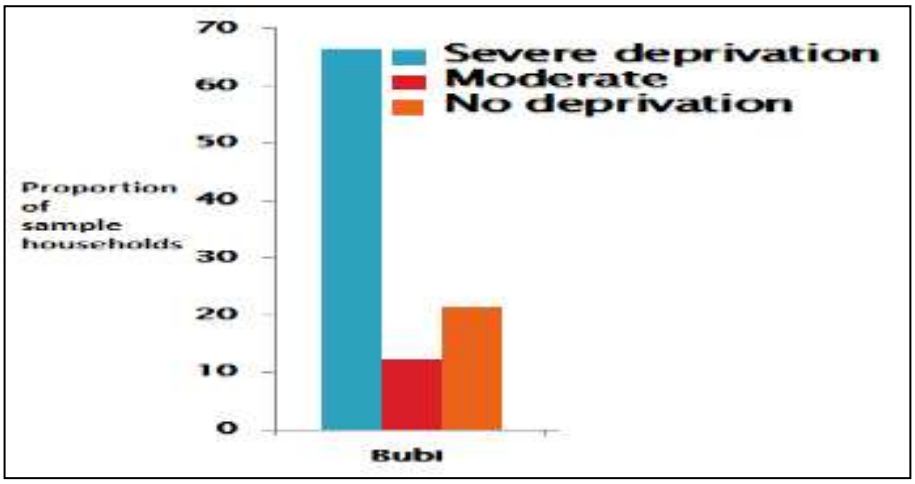
The availability of poor infrastructure a highlighted on table 2 is ranked as the 3rd threat to community resilience building in Bubi district as supported by 15 households (15%). Poor road network has been noted as a stumbling block for private, NGO and government service providers to reach some areas and also for farmers to access their local markets. On a similar note the, study also established the existence of MELANA's crisis modifier project implemented in 2017 as confirmed by KIIs, which mainly focused on augmentation of water supplies through drilling and rehabilitation of boreholes. However, during flush floods in ward 4, 7 and 8 in 2019 no interventions or emergency support was received by the affected communities. Qualitative data from KIIs show that the district is heavily reliant on external support for emergency response to disasters which have made them to be susceptible to waterborne diseases. Some respondents pointed out that;

> "*Asila ndawo ezisinika amanzi eziseduzane, lokhu sokubangela ukumemetheka kwemikhuhlane efana lesihudo esigabeni sethu"* (Interview 4, 2020) ("We do not have places where we can access water which are close, and this has cause the spreading of diseases such as cholera in our community")

> "It is difficult to reach some wards for example ward 4 and 18 due to sandy roads and thus poor road infrastructure makes it a hard task for farmers to link with local markets" (Interview 10, 2020, Extension Service Officer)

The study established poor road network as a hindrance towards access to productive markets. These results concur with Lokshi and Yemtsov (2003), who argue that investments in roads and bridges are likely to generate new income opportunities for agricultural households as this could reduce the time spent commuting and ease access to market places, trickling far beyond the project site. However, results from desk reviews as highlighted on figure 2 below, established that the Institute of Environmental Studies' (IES) scenario mapping indicate that the largest proportion (65%) had severe household sanitation deprivation in November 2018. Despite the efforts by UNICEF funded Rural WASH (RWP) project and MELANA, sanitation coverage remains low in Bubi exposing households to shocks such as diarrhea and cholera. Also, the District Livestock Production Department (DLPD) reports show cases of livestock meseals in the study areas like ward 4, 18 and 5 owing to poor sanitation coverage. Studies by Jalan and Ravallion (2003) reveal that, as far it is, poor households generally tend to be located in very remote areas and tend to lack water supply systems, and hence the reduction in the incidence of water-borne diseases is inevitable.

Figure 4: Household Sanitation Deprivation



Source: Adopted from IES, Scenario mapping; Bubi-November 2018.

5.3.4 Cash Crisis and Financial Exclusion

Prevailing macro-economic conditions also pose a threat to resilience building in Bubi district particularly the cash crisis and the financial exclusion phenomenon. As the country continues to be embattled in the liquidity crisis, rural communities like those in Bubi are pushed deeper into poverty. Communities offer labour in exchange of services and goods, in some cases famers face payment challenges. Income Savings and Landing Schemes (ISALs) are being rendered inefficient in times of liquidity crisis. Use of Point of Sale (POS) machines and Ecocash (mobile payment method) is marred by mobile network challenges in ward 18, 17 and 10. Financial exclusion increases a household's vulnerability to shocks and stresses. It reduces household income by limiting returns from community income generating projects. However, during interview sessions, respondents pointed out that;

> "Financially excluded individuals are unbanked, relatively poor, unemployed or in informal sector or agriculture and generally live in marginalized areas. Hence, due to market failures, they have limited or no access to savings and credit facilities of banks. Without financial inclusion the financially excluded therefore, remain in the poverty trap". (Interview 10, 2020).

> "Our ISAL saving groups need money. However due to lack of access to cash as a result of cash shortages and poor network coverage in our areas, raising funds and contributions for investment become a hard practice and some members are already moving out of such groups" (Interview 5, 2020)

However, the above responses indicate that financial exclusion is a problem hindering and affecting investments in viable projects aimed at building resilience for self-sustenance. However, the findings concur with Barboni *et al* (2017:39) who state that, "financial access is especially critical for the poorest households, who are more often trapped in the present and exposed to more unpredictable shocks, hence, transaction and savings accounts allow households to smooth income and consumption in the face of adverse shocks and variable income streams. Chivasa, and Simbanegavi (2016), further argue that, compared to other regions in Zimbabwe, Matabeleland North province inclusive of Bubi district is the region which has the highest number of adults who are financially excluded as well as being one of the least developed regions in the country. Therefore, as a result of financial exclusion, income generation and wealth accumulation by households becomes weak resulting in high incidences of poverty

VI. Discussion

The foregoing findings on challenges and emerging issues in building community resilience in Bubi district noted that institutional weakness which include limited financial resources, government dependency on NGO due to lack of funds and poor knowledge sharing between service providers and project beneficiaries play a key role as limiting factors. Data gathered reflects that Bubi Rural District Council through social services department has been working with NGOs in building community resilience through different projects. Funding challenges have been cited as part of the major stumbling blocks affecting the realization of the district strategic plan and resilience plan. Oloo and Omondi (2017) are of the opinion that through local institutions, communities' vulnerability can be reduced by encouraging members to diversify livelihoods and providing technical options that are locally viable and available vibrant local institutions that can mobilize community resilience to climate change. In order to realize this, local institutions also ought to be sufficiently resourced and have improved capacities. However Bubi district relies on funds from ZRBF-MELANA project to achieve some of its set targets in the resilience plan. However these are limited to 10 wards were MELANA is operational, making replication of resilience projects to other 12 wards limited due to lack of funding. Matsimbe (2003) concurs that, examples from different parts of the world show that communities with strong institutional coordination are likely to be less vulnerable than those with weak institutional coordination. Matsimbe (2003) further argues that, it is clear that what turns a naturally occurring hazard into a disaster is not the natural event itself, but the social context, the level of coordination between the different institutions that exist to reduce the effects of hazards.

Dependency syndrome (the moral hazard phenomenon) by local communities emerged as one of the key factors affecting efforts of building resilience and sustainability. Local government and NGO efforts of response to climate change hazards are in form of cash transfer schemes, food aid (handouts) and farm input schemes. Social assistance programs (SAPs) are often criticized on the grounds that they create ' the moral hazard' where individuals who are 'insured' change their behavior in adverse ways in response to incentives offered by insurance (Murcus, 2007). However, their frequency (SAPs) as a response mechanism have facilitated limited participation and adoption of resilience projects by local communities which promote sustenance through the use of local assets and resources. However, the developmental paradigm shift from humanitarian reliance to resilience is not recognized by local communities, hence it leaves them on the poverty trap when donor and government handout period stops. Murcus (2007) posit that, through social assistance, beneficiaries lose the incentive to save, accumulate assets, invest in diversification and business development, and to participate in the labour-force. In other words, it is assumed that social assistance breeds 'laziness' and a permanent 'dependency' on 'handouts'. Meanwhile, international donor efforts to make food aid more effective and mitigate climate change shocks have had limited success, and merit further investigation (OECD, 2016). This fundamental uncertainty about food assistance as a resource for supporting longer-term development raises questions about its appropriateness and is also a factor in explaining food aid performance in building resilience to affected communities.

Poor rural infrastructure comprising of poor road networks has been a depressing factor for the private sector and reverses efforts to link farmers with potential markets. The sandy roads of ward 18 and 4 discourage extension service officers from reaching community members. Also poor rural sanitation as a result of lack access to water facilities such as boreholes and wells has exposed them of waterborne diseases such as diarrhea and cholera and also placed livestock vulnerability to diseases. Despite the efforts by UNICEF funded Rural WASH (RWP) project and MELANA, sanitation coverage remains low in Bubi exposing households to shocks such as diarrhea and cholera. However, Jalan and Ravallion (2003) state that, absence of proper sanitation such as installation of new or repairs of existing communal water tanks, water treatment equipment, new pumps, and to some extent, rehabilitation of wastewater management networks reduces a household's ability to be resilient by exposing it to health related shocks such as cholera especially after floods and during drought.

The cash crisis and financial exclusion negative effects have not spared rural communities from creating sustainable livelihoods and self-sustenance measures which promote resilience. ISAL savings groups which promote investments are hindered due to cash unavailability in the country, hence banks are established in towns. However, financial inclusion should be pursued with all energy if the economy is to realize inclusive sustainable development and growth. Nevertheless, financial inclusion promotes local savings and investments, thus developing rural businesses and reducing poverty among marginalized groups (Chitokwindo *et al*, 2014). The study findings concur with Chitokwindo *et al*, (2014), who argue that, most banks are represented in urban centers whilst only POSB, Agri bank and CBZ bank have a strong rural presence despite the call since 2006 by the RBZ for banks to open branches in rural areas. According to FinMark (2012:25), "only 5% of Zimbabweans

in rural areas have access to a bank (within 30 minutes reach)". However, income generating projects are therefore affected as the link between financial exclusion and poverty is inevitable.

Also, the study established the practice of off farm household adaptation strategies as key in copying to persistence hazards. Trainings conducted by MELANA and AGRITEX on drought tolerant small livestock uptake led to the adoption of goat production as a responsive adaptation mechanism. Darcan and Daskiran (2014) state that, goats have numerous advantages for maintain its production in extreme climate conditions. Therefore, the climate change hazards such as drought have contributed to the thinning and death of cattle which has led to the promotion of small livestock as an adaptation mechanism. Also local trading and vending trainings of local communities by local NGOs and government departments increased knowledge on viable entrepreneurship skills**.** However, some rural community households are reliant on remittances in times of shocks from their children based in neighboring towns such as Bulawayo and across the border (South Africa and Botswana). The argument often made in support of remittances is that, "it helps poorer people to access financial resources needed to create assets that would enable them to deal with both known and unexpected environmental challenges" (Barnett and Webber, 2009, cited in Surugu *et al*, 2017:6).

On farm household adaptation strategies indicated adoption of climate smart agriculture (CSA) methods such as planting of different crops, change in tillage practices, adoption of new crop varieties, reducing farm costs and increase in effective tillage practices as effective mechanisms against adverse effects of climate change. Trainings conducted by AGRITEX and MELANA, facilitated the implementation of climate friendly agricultural farming technics which enable better yield outcomes. . Also, mobile centered applications such as '*Kurima Mari'* have provided farmers with adequate knowledge on crop and livestock production and management. Scholars Abegunde *et al*. (2019) state that, climate smart agriculture (CSA) emerged to bring about an adjustment in agriculture to enhance food production while dealing with the changing climatic conditions and their increasing variability.

The creation of new assets and effective management of productive assets for the 'at risk' communities and further promoting household access to productive asserts is eminent in ensuring resilience to shocks and stresses. District records show that MELANA has resilience plans whose part of the goal is to build infrastructure in the operational wards. The rehabilitation of dip tanks and construction of animal health center in the wards (5 and 17), thus promotion of integrated water resource management (IWRM) has the potential of improving both human and animal health conditions and better the livestock conditions for markets. In coping with economic shocks and financial stresses, ISALs have invested in assets such as goat and poultry production. KIIs and desk studies confirm that a household with access to productive asserts is better positioned to withstand shocks.

VII. Conclusion

The study argues that the presence of obstacles towards resilience programing and its implementation challenges inevitably keeps rural communities within the poverty trap bracket. The development paradigm shift from focusing on official development assistance (ODA) alone to promoting resilience proves to be a sustainable way of creating the long term development and adaptive capacity of local communities towards climate induced hazards. The adoption of climate smart agricultural (CSA) techniques and Integrated Water Resource Management (IWRM) Systems prove to be key in facilitating effective household adaptability and response towards climate change hazards. However these techniques play a pivotal role in enhancing food security i.e (food access, availability, affordability and accessibility) which is crucial for economic well- being of households. Nevertheless, it is worth noting that building community resilience in the post 2015- 16 El Nino drought requires effective inclusive programming which is supported by strong, efficient and effective local institutions.

VIII. Recommendations

a. Strengthening of local institutions and promotion of institutional coordination is eminent in achieving improved capacities which builds transformative community capabilities through effective planning, policy and program implementation. However, setting aside enough budgets for supporting the implementation of district resilience plans will promote scalability of development initiatives across rural communities

b. The promotion and development of Information Communication Technology systems (ICTs) which will enable effective transfer of information and knowledge from service providers i.e (Government, NGOs) to the local communities. Also the promotion of mobile based applications such as '*Kurima Mari'* which promote crop and

livestock production, hence encouraging the adoption of climate smart agriculture through information technology.

c. Investing in productive asset building, thus promoting the development and adoption of the Integrated Water Resources Management (IWRM) approach which promotes the coordination and management of water, land and related resources to maximize the economic and social welfare in an equitable manner without compromising the ecosystem. However this enables effective adaptation and resilience during dry seasons through improved access of water reservoirs. Also the above approach helps in curbing water borne diseases such as typhoid, cholera and also malnutrition challenges which are a threat in achieving self-sustenance and food security.

d. Promote the paradigm shift from providing humanitarian aid alone to resilience building which inevitably encourages and builds self-sustenance, adaptability and effective transformation, of local communities against climate induced hazards. Therefore resilience inevitably outsmarts the dependency syndrome phenomenon (The moral hazard) which is affecting sustainable development.

e. Creating sustainable relationships between farmers and market actors extends efforts to build transformative and absorptive capacities for vulnerable communities and helps bridge poverty gaps resulting from climate change induced hazards like El Nino drought.

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