An investigation into the efficiency of functioning of the local authority as a crucial element of community resilience to climate-related disasters

ABSTRACT

Aims: The main objective of the study was to analyze the relationship between the efficiency of operation of the local authority (independent variable) and community resilience to agriculture-threatening hydro-climatic natural disasters (dependent variable), with particular focus on droughts and floods in Lower Muzarabani District of the Zambezi Valley in Zimbabwe.
Study design: The study was designed based on the stratified random sampling technique. Linear regression and correlation analyses were used for hypothesis testing.
Place and Duration of Study: The study was part of a PhD in Development Studies (Leadership for Africa's Development) that was conducted jointly at the University of Africa in Lusaka, Zambia, and BEAT Doctoral Academy in Harare, Zimbabwe. Sponsorship was provided by Chinhoyi University of Technology under a Staff Development Fellowship, between August 2016 and November 2020.
Methodology: The survey was conducted in Lower Muzarabani District of the Zambezi Valley in Zimbabwe, on a sample of 200 rural households. A structured questionnaire was used to determine resilience scores for the dependent variable (community resilience) and independent variable (efficiency of functioning of the local authority), based on a 5-point Likert Scale.
Results: Linear regressions between the dependent and independent variables exceeded 2 for each of the three scenarios; and correlations were greater than 0.5 for each scenario. These results were true at P = 0.000, that is at P< 0.01.Scenarios were delineated by the disaster governance legislation in operation during three different time-periods. The results therefore indicated a strong, positive impact of efficiency of functioning of the local authority on community resilience to the climate-related disasters of droughts and floods.
Conclusion: The results indicate that there is considerable potential for raising community resilience by improving the efficiency of functioning of the local authority.NO RECOMMENDATIONS?

Keywords: local authority; efficiency; community resilience; agriculture; droughts; floods

Include the structured questionnaire in the results and discussion part. The statements in every scenario are very important.

1. INTRODUCTION

Disaster relief work in Lower Muzarabani is a combination of state intervention and local leadership activities. However, the efficiency and effectiveness of these activities are being hampered by the prevalence of severe hydro-climatic disasters in the district [1]. Hydro-climatic disasters originate from climatic and weather elements. The most severe and recurrent hydro-climatic disasters in Lower Muzarabani are droughts and floods [1]. Adding to the already precarious hydro-climatic disaster situation in the district, electronic climate models have predicted an imminent rise in the magnitude, frequency and intensity of hydro-climatic disasters in Lower Muzarabani[1]. The increasing magnitude, frequency and intensity of droughts and floods threaten the profitability, viability and sustainability of livelihoods and food security among communities in Lower Muzarabani[2]; [3]; [4]; [5]. The rain-fed agriculture base of Lower Muzarabani District has made the economies of local rural communities particularly vulnerable to the climatic extremes of droughts and floods [5]. Exposure to these disasters has also increased the vulnerability of the poor, thereby plunging them deeper

into poverty and preventing them from taking advantage of economic opportunities [5]. With Lower Muzarabani faced with increasing magnitude, frequency and intensity of droughts and floods, the need for concerted efforts towards building disaster-resilient communities can never be overemphasized [5]. Hence the rationale for undertaking research activities aimed at facilitating or informing efficient and effective disaster resilience-building among local rural communities in Lower Muzarabani, such as the disaster-resilience assessment activities in this study.

The definition of community resilience adopted in this study functionally consists of five major components: "Communities are said to be resilient to disasters if they are capable of: (1) responding, acting or reacting appropriately to disturbances, emergencies, catastrophes or predicaments; (2) surviving through disaster situations (e.g. minimizing losses or disruptions to agricultural activities, infrastructure, incomes and livelihoods); (3) coping with, adapting to, bearing and tolerating common, recurrent and severe disasters or calamities; (4) assisting or depending on one another during disaster episodes; and (5) efficiently and effectively preparing for, responding to, and recovering from the adverse impacts of a disaster" [6].

The main objective of the study was to analyze the efficiency of operation of the local authority as a determinant of community resilience to agriculture-threatening hydro-climatic natural disasters, with particular focus on droughts and floods in Lower Muzarabani District of the Zambezi Valley in Zimbabwe. The specific objectives were to: (1) investigate the efficiency of functioning of the local authority in facilitating resilience to disasters in the community; (2) assess the level of community resilience using community resilience scores under different disaster resilience leadership scenarios; and (3) determine the implications of the efficiency of operation of the local authority for effective resilience building. The null hypothesis was that the efficiency of functioning of the local authority significantly influences the level of community resilience to hydro-climatic disasters.

2. METHODOLOGY

2.1 Sampling Method and Sample Size

The study province and district were identified and selected in close consultation with the Department of Civil Protection, which has up-to-date data on areas that are most prone to natural disasters in Zimbabwe. Lower Muzarabani District in Mashonaland Central Province was selected because of the prevalence of two hydro-climatic disasters, namely floods and droughts, which have threatened the profitability, viability and sustainability of agricultural operations in the district. Lower Muzarabani is situated in Natural Region IV of Zimbabwe. Natural Region IV is characterized by an arid to semi-arid climate with low annual precipitation of 450-650mm and frequent droughts. Because it occupies an undulating lowland area below a mountainous high rainfall area bordered southwards by the Mavuradonha Range, Lower Muzarabani also experiences flooding during most rainy seasons. A brief literature survey also substantiated Lower Muzarabani as a suitable study district [7]; [8]; [9].

Four important considerations were taken into account in arriving at the final practical, workable sample size for the Lower Muzarabani household survey. These considerations were (a) the need to have a sample size large enough to obtain statistically significant results; (b) the requirement to have a questionnaire of adequate length to cover all aspects of the analytical framework; (c) the necessity to adequately address all the objectives of the study using primary data from the household survey; and (d) the availability of resources to undertake the survey, taking particular cognisance of the constraints imposed by the limited budget available for field data collection.

The multi-stage random sampling method was used in selecting the 200 households for the survey, as follows. At the top-most sampling stage, randomization was performed at district level to select 5 wards that are flood- and drought-prone in the district. The selected wards were (in the order in which they were selected) Ward 8, Ward 4, Ward 6, Ward 7, and Ward 5. At the next sampling stage, randomization was performed at the ward level within each of the 5 selected wards. One village was randomly selected from each of the chosen wards for survey administration. At the final sampling stage, one cluster of adjacent households was selected in each of the five selected villages, starting at an arbitrarily chosen point at the edge of each village, and interviewing each household from that point until the required number of households was reached for that cluster. Cluster sizes were determined using the probability proportional to size sampling method. In this context, the number of households in each cluster was obtained by the formula:

$C_t = (n_t / n_{TOT})*200$

where C_t = cluster size in ward t; n_t= number of households in ward t; and n_{TOT} = total number of households in all the selected wards. Using this formula, the cluster sizes for the sampled wards were as follows: C_8 = 63 households; C_4 = 51

households; C_6 = 22 households; C_7 = 13 households; and C_5 = 51 households, giving a total sample size of 200 households.

2.2 Data Collection and Analysis Methods Used in the Survey

The *"a-priori approach in retrospect"* was used in data collection and analysis. Respondents were requested to indicate their responses of the efficiency of operation of the local authority by imagining that they were living in the Lower Muzarabani community during the period of operation of three relevant pieces of legislation (i.e. the Civil Protection Act of 1989; the Civil Protection Act of 2001; and the Disaster Risk Management Bill of 2011). In this hypothetical situation, they were asked to rate their responses based on the main features of these policy and legal documents, which were considered useful proxies for the following three disaster-resilience leadership scenarios.

The main features of the three disaster-resilience leadership scenarios are as follows. Under the Civil Protection Acts of 1989 (representing Scenario 1 of disaster resilience leadership) local leaders, local communities and grassroots organizations in Lower Muzarabani were not accorded the opportunities, autonomy and independence to plan and implement disaster resilience, disaster risk reduction and disaster management activities at the local level (Manyani and Bob, 2018). The Disaster Risk Management Bill of 2011 (representing Scenario 3 of disaster resilience leadership), in contrast to the earlier disaster resilience Acts, proposes extensive decentralization and devolution of power, authority, resources and decision-making responsibilities from the national level to local authorities. Under scenario 3 local leaders at district and sub-district levels, as well as the local leaders at ward and village levels, are actively involved in assisting the affected communities in preparing for, responding to, and recovering from the adverse impacts of natural disasters such as droughts and floods. In other words, under Scenario 3 of disaster-resilience leadership, local leaders at district, sub-district, ward and village levels play an active role in building community resilience to disasters. Scenario 2 of disaster resilience leadership borrows features and functions partly from Scenario 1 and partly from Scenario 3. It is represented in Zimbabwe's legislative and policy framework by the Civil Protection Act of 2001.

The selected analytical model (the Conjoint Community Resilience Assessment Model - CCRAM), unlike other community resilience/ leadership models (e.g. the Hannah Model and the Meijerink-Stiller Model), incorporates community resilience for the complete disaster cycle, starting with the pre-disaster phase and proceeding to the disaster and post-disaster phases. An additional merit for CCRAM is that it incorporates both leadership and social components of community capital as determinants of community resilience to disasters. The CCRAM also provides a detailed research methodology that can be used for testing empirical data. More importantly, the Delphi technique and the Nominal Group technique which were central to the development of the CCRAM Model ensured that it drew a major input from experts, making it a highly relevant and credible framework for purposes of assessing, anticipating and predicting community resilience to disasters [6]. For these reasons, the Conjoint Community Resilience Assessment Model (CCRAM) was selected from among the available theoretical frameworks to address the objectives of the study.

The CCRAM Household Questionnaire was used to collect data in face-to-face interviews among the sampled households in Lower Muzarabani. The original CCRAM Model structure, consisting of 5 disaster-resilience factors (Leadership, Collective Efficacy, Preparedness, Place Attachment, and Social Trust) was used as the basis for the survey. A 5-point Likert Scale was utilized to assess community responses about the efficiency of operation of the local authority. The points on the Likert Scale were as follows: 1 = strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; and 5 = very strongly agree.

During data analysis, the strength of the functional relationship between the efficiency of functioning of the local authority and community resilience was investigated using the Pearson Bivariate Correlation Analysis and Linear Regression Analysis. Interpretation of results from correlation and linear regression analysis was as follows. The interpretation of correlation coefficients with regard to their indicative strength of the relationship between the dependent variable (community resilience) and independent variable (Item 1, i.e. the efficiency of functioning of the local authority) was based on the following scale according to [10]: 0-0.09 (none); 0.1-0.29 (small/weak); 0.3-0.49 (medium/slightly strong);0.5-1 (high/strong). In analyzing the relationship between the two variables with the use of linear regression technique, the interpretation of linear regression coefficients was as follows. If the results of linear regression analysis exhibited a linear regression coefficient of 2 or more, then the functional relationship between Item 1 ("The local authority functions well") and community resilience was considered as strong; if the linear regression coefficient between the two variables was less than 2, then the functional relationship between them was considered as weak [11].

3. RESULTS AND DISCUSSION

3.1 Results

The Pearson Bivariate Correlation Analysis and Linear Regression Analysis were used to analyze the functional relationship between item 1 in the CCRAM model ("The local authority functions well") and community resilience for Scenario 1, Scenario 2 and Scenario 3. The results were as follows.

This presentation focuses on the status of the functional relationship between Item 1 on the one hand, and community resilience to hydro-climatic disasters, on the other. The presentation also covers the three disaster-resilience leadership scenarios, namely scenario 1, scenario 2 and scenario 3.

Table 1. Correlations between Item 1 and community resilience

Scenario	Pearson Correlation Coefficient (r)	Number of Observations (N)	Level of Significance (P)
1	0.526	200	0.000
2	0.766	200	0.000
3	0.754	200	0.000

Source: Survey Data, 2019

Include the statement in every scenario?

Table 2. Linear regression between Item 1 and community resilience

Scenario	Linear Regression Coefficient (B)	Y-Intercept (Constant)	Number of Observations (N)	Level of Significance (P)
1	6.762	65.858	200	0.000
2	14.776	43.283	200	0.000
3	14.402	44.498	200	0.000

Source: Survey Data, 2019

Include the statement in every scenario?

Table 3. Community perceptions about the functioning of the local authority

Scenario	Response (%)					
	1 (strongly disagree)	2 (disagree)	3 (agree)	4 (strongly agree)	5 (very strongly agree)	Total
1	13.5	23.5	37.5	9.0	16.5	100
2	13.5	21.5	40.5	8.5	16.0	100
3	11.5	22.5	40.0	11.5	14.5	100

?? Include the statement in every scenario?

Source: Survey data, 2019

The data presented above were analyzed in deriving linear regression equations between Item 1 and community resilience. The equations and constituent variables from this analysis are listed in Table 4. Additional analysis centred on conducting linear regression plots between Item 1 on the one hand, and community resilience on the other. The plots are shown in Figure 1 to Figure 3.

Table 4. Linear regression equations between Item 1 and community resilience

Scenario	Linear Regression Equation	Specification of Variables in the Equation
1	$Y_{1(T)} = 6.762X_{1(1)} + 65.858$	$Y_{1(T)}$ = Community Resilience Score for Scenario 1 (incorporating 5 resilience factors: Leadership, Collective Efficacy, Preparedness, Place Attachment, Social Trust); and $X_{1(1)}$ = Resilience Score for Item 1 under Scenario 1 ("The local authority functions well").
2	$Y_{2(T)} = 14.776X_{2(1)} + 43.283$	$Y_{2(T)}$ = Community Resilience Score for Scenario 2 (incorporating 5 resilience factors: Leadership, Collective Efficacy, Preparedness,Place Attachment, Social Trust); and $X_{2(1)}$ = Resilience Score for Item 1 under Scenario 2

		("The local authority functions well").
3	$Y_{3(T)} = 14.402X_{3\,(1)} + 44.498$	$Y_{3(T)}$ = Community Resilience Score for Scenario 3 (incorporating 5 resilience factors: Leadership, Collective Efficacy, Preparedness, Place Attachment, Social Trust); and $X_{3(1)}$ = Resilience Score for Item 1 under Scenario 3 ("The local authority functions well").

Source: Survey data, 2019

Fig.1.Linear Regression Plot between Item 1 and community resilience for Scenario 1
(P < 0.001)
Source: Survey data, 2019

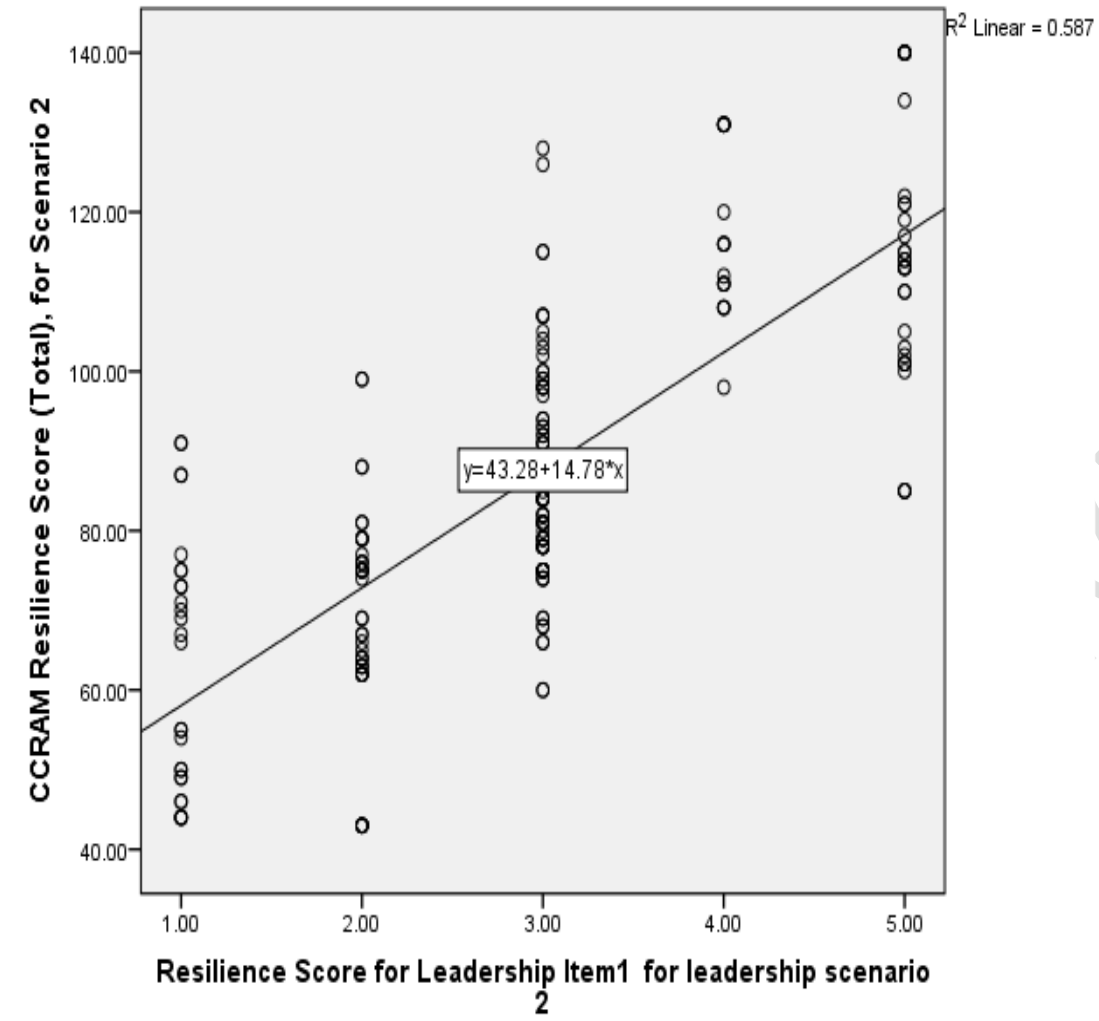

Fig.2.Linear Regression Plot between Item 1 and community resilience for Scenario 2 *(P < 0.001)*

Source: Survey data, 2019

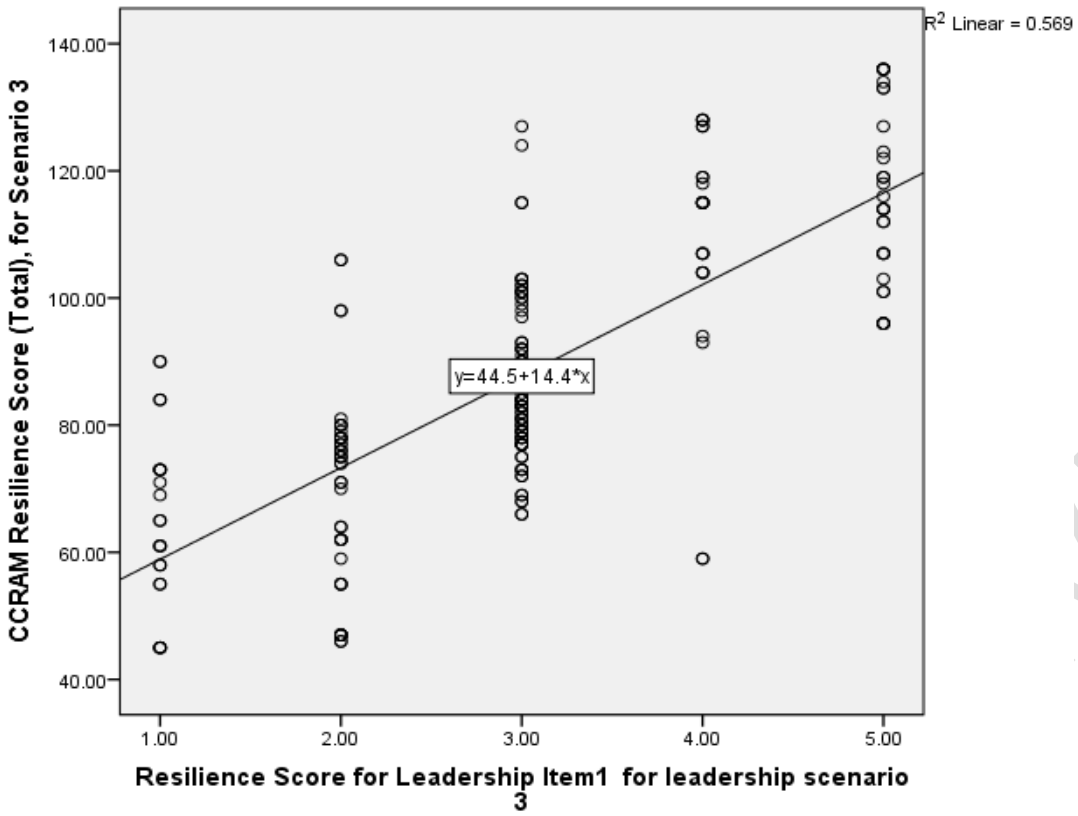

Fig.3.Linear Regression Plot between Item 1 and community resilience for Scenario 3
(P < 0.001)

Source: Survey data, 2019

Table 5: Analysis of household perceptions about the efficiency of functioning of the local authority

Scenario	Percentage of respondents citing (disagree + strongly disagree)	Percentage of respondents citing (agree + strongly agree)
1	37.0	46.5
2	35.0	49.0
3	34.0	51.5

Source: Survey data, 2019

3.2Discussion

Research findings revealed that under all three disaster-resilience leadership scenarios (scenario 1, scenario 2, and scenario 3) the efficiency of functioning of the local authority positively, strongly, and significantly influences the level of community resilience to hydro-climatic natural disasters (droughts and floods) in Lower Muzarabani. This inference was

based on results showing a positive and strong correlation coefficient (r exceeding 0.5 and approaching 1), and being significant at $P < 0.001$ ($P = 0.000$) between Item 1 and community resilience. The results were as follows: Pearson Correlation Coefficient r(200; scenario 1) = +0.526 at $P = 0.000$; r(200, scenario 2) = +0.766 at $P = 0.000$; and r(200; scenario 3) = +0.754 also at $P = 0.000$ (Table 1). These results led to an acceptance of the null hypothesis in the main hypothesis of the study. This hypothesis stated that the practices of local leaders (in this case the efficiency of functioning of the local authority) have a significant influence on the level of community resilience to hydro-climatic disasters (droughts and floods).

Linear Regression Analysis results also substantiated these findings. The interpretation of linear regression coefficients indicated a strong (B exceeding 2), positive, and significant (at $P < 0.001$) association between Item 1 and community resilience under all three scenarios. The inference was that superior, high-quality performance of the local authority as signified by its competency, resourcefulness, proficiency, capability, being well-organized and generally good at their job results in an extremely high likelihood of the community attaining resilience arising from the practices of the local authority in Lower Muzarabani. The results were as follows: Linear Regression Coefficient B(scenario 1) = +6.762 at $P = 0.000$; B(scenario 2) = +14.776 at $P = 0.000$); and B(scenario 3) = +14.402 also at $P = 0.000$ (Tables 2 & 4; Figures 1-3).

A greater percentage of respondents in each of the three scenarios (Tables 3 & 5) have indicated that the local authority is functioning efficiently. This is shown in the comparison between the percentages of respondents who agreed and strongly agreed, and those who disagreed and strongly disagreed with Item 1 in the CCRAM model. Item 1 reads: “The local authority functions well”. These results were matched with what was already known about the Lower Muzarabani community in terms of its inability to withstand, adapt to, and cope with the negative impacts of droughts and floods on agricultural activities, livelihoods and incomes. The inevitable conclusion arising from the matching exercise was that the functioning of the local authority, though commendable, is insufficient to build significant levels of community resilience to hydro-climatic disasters. The local authority is not performing at levels that would allow or enable the Lower Muzarabani community to reach a disaster-resilience point satisfying the definition of community resilience adopted in this study. Nevertheless, there appears to be considerable potential for this leadership practice to transform the Lower Muzarabani community towards withstanding the vagaries of hydro-climatic disasters. This positive aspect is based on the results of the analysis of survey data which indicated a significantly strong, positive relationship between the efficiency of functioning of the local authority and community resilience to the agriculture-threatening hydro-climatic natural disasters of droughts and floods.

Survey results indicated that higher levels of efficiency in the functioning of the local authority promote greater community resilience to hydro-climatic natural disasters (droughts and floods). Related studies and literature concur. Some authors note that local authorities should be able to facilitate the effectiveness, efficiency and capability of infrastructure and services to respond quickly to disasters [12]; [13]; [14]; [15]. [12] posit that any disaster-resilience program of the local authority needs to be effective, efficient, cost-effective and multi-lateral. [14] emphasize the importance of local leadership practices in building community resilience to disasters with regard to the facilities that can be provided by local authorities, such as housing, commercial and cultural facilities. [15] state that local authorities should ensure that recovery from disasters occurs across a wide range of sectors, namely shelter, physical infrastructure, healthcare services, agriculture, economic and social infrastructure. Additionally, recovery from disasters is increasingly being regarded as an opportunity to build a higher standard of disaster-resilience, preferably even integrating structural and non-structural mitigation measures for future disasters.[16] note that during pre-event phases before the onset of a disaster, local leaders in local authorities need to prepare the physical and social infrastructure, establish monitoring and surveillance systems, essential services, emergency or disaster action plans, medical systems, and other capacities. Further, as poor information exchange and coordination is normally problematic during disaster events, it is also critical to establish leadership and communication systems across internal and external networks.

4. CONCLUSION

The following points form a conclusion to this paper. There is a direct, significant, positive relationship between the efficiency of functioning of the local authority and community resilience to the hydro-climatic natural disasters of droughts and floods in Lower Muzarabani District. This implies the existence of considerable potential to achieve community resilience by improving the efficiency of functioning of the local authority.

Community perceptions indicate that the local authority in Lower Muzarabani is functioning efficiently. However, this does not imply the current or immediate attainment of fully-fledged community resilience. The efficient functioning of the local authority at current performance levels does not accord the community enough capacity to cope with, adapt to, bear and tolerate hydro-climatic disasters. In addition, it does not allow the local community to efficiently and effectively prepare for, respond to, and recover from the adverse impacts of droughts and floods. Furthermore, the efficient functioning of the local authority at current performance levels does not equip the local community with adequate skills, abilities and

resources to survive through disaster situations, such as minimizing the losses or disruptions to agricultural activities, food security, infrastructure and incomes. In short, as mentioned in the discussion above, the functioning of the local authority, though commended by the perceptions of local community members, is insufficient to build significant levels of community resilience to hydro-climatic disasters.

While there have been commendable efforts by the local authority to improve the efficiency of its operations, the potential of these efforts for improving community resilience to agriculture-threatening hydro-climatic natural disasters has not yet been fully utilized. In spite of the current vulnerability and susceptibility of the Lower Muzarabani community to the negative impacts of droughts and floods, a significant potential nevertheless still exists for the progress of the community towards the ultimate attainment of fully-fledged community resilience to hydro-climatic disasters.

The above conclusions were arrived at by inference of results from the analysis of survey data and related literature. Information on the commendable efforts of the local authority was obtained from the Likert scale responses for Item 1 in the CCRAM model. Data on the existing, underutilized potential of the functioning of the local authority to achieve community resilience were obtained from the results of Linear Regression and Pearson Bivariate Correlation Analysis. Finally, information on the current vulnerability and susceptibility of the Lower Muzarabani community to the negative impacts of droughts and floods is adequately documented in related literature [2] – [5].

Research findings in the study indicated that the level of efficiency in the functioning of the local authority has a significantly strong influence on the level of community resilience to the hydro-climatic natural disasters of droughts and floods in Lower Muzarabani District of the Zambezi Valley in Zimbabwe. Greater efficiency of functioning or operation of the local authority will result in higher levels of community resilience to disasters. Therefore, any measures designed and implemented to enhance efficiency in the operation of the local authority will also enhance community resilience to disasters. Some feasible measures include the following.

First, local government autonomy in Lower Muzarabani should be improved. Today, local authorities largely remain local agents of the central government without much space to manoevre. Local authorities' dependence on central government, enshrined in the law, weakens local governance. Local authority conditions in Zimbabwe are such that central government still retains a lot of powers. Although the new (2013) Constitution has somewhat attempted to reduce central government powers over local authorities, a lot of these reforms are still to be incorporated in the relevant pieces of legislation that govern the operation of local authorities. Existing conditions are currently being used by central government institutions for the purpose of implementing their own priorities. Such conditions constitute formidable hindrances to exercising decentralized decision making, thereby hampering the process of participation.

Secondly, income sources for local government development projects need to be diversified. Currently local authorities are financed through grant funding and loan support from central government through the Public Sector Investment Programme (PSIP) and other funding avenues. Even under the new Constitution, rural district councils have far more limited powers than urban councils as regards revenue generation through borrowing. A rural district council can only borrow from central government, unlike municipalities and cities that can access funds from many sources, including the money market.

Thirdly, the participation of traditional leaders such as chiefs, headmen and village heads in rural development processes should be enhanced. The Rural District Councils Act, which primarily governs the activities of rural local governments, does not provide for the role of chiefs in the proceedings of a council of rural local authorities. However, there is a culture in rural local government which developed prior to independence where chiefs are treated as *ex officio* members of councils with no voting powers. Chiefs are given a platform to address a council, especially on issues which concern their powers and responsibilities or the customs and traditions of people living in their respective geographical areas of jurisdiction. The absence of voting powers, however, significantly reduces the status and influence of chiefs in rural district councils. This has in many ways resulted in making their participation in local government at this level difficult. Measures should be taken to allow traditional leaders to become fully constituted members of rural district councils with equal voting powers. This is desirable because traditional leaders are the most accessible and immediate form of local government in rural areas. As such, they may be better positioned to identify the needs and preferences of rural communities because of their physical proximity to the people. Over the years they have demonstrated remarkable resilience, a strength which the modern state should seek to capitalize on in a bid to foster community development and resilience to disasters.

Fourthly, the following aspects should be incorporated in legal reforms in line with Section 264 of the new (2013) Constitution: (i) local authorities should ensure good governance by being effective, transparent, accountable, and institutionally coherent; (ii) local authorities should secure the welfare of the public; and (iii) they should ensure the fair and equitable representation of people in their areas of jurisdiction.

Fifth, ministerial powers should be devolved to local authorities in matters like the declaration of classes of land (e.g. large scale commercial farms; resettlement; small scale commercial; or urban/growth points); and approval and implementation of any commercial, industrial, agricultural or other economic activity for the purpose of raising revenue for the local authority.

Sixth, a clear national framework for local economic development (LED) should be provided through effective fiscal, political and legal recognition and access to an equitable share of national resources by local authorities. An enabling environment for LED should be created which allows businesses to flourish by promoting direct investments, providing core services, convening the private sector, and reducing red tape. Local strategies to promote local economic development should be developed, which involve local government working with other partners to understand local economies and promote integrated development planning and community participation.

In addition, the capacity of local authorities should be developed to access existing funding sources, or to use innovative financing models to support local economic development through joint ventures, borrowing on the market where appropriate, or developing partnerships with the private sector and other partners to ensure effective promotion and coordination of local economic development. Local economic development in rural district councils' areas of jurisdiction should also encompass promotion of the development of small, medium and microenterprise activities within rural district council areas; facilitation of investment in rural district council areas; implementation of programmes for capacity building, skills upgrading or training, and technology development in all productive and service sectors of the rural economy; and conducting assessments such as business climate surveys; and working directly with consumers to analyze the local economy and finding solutions through the promotion of local enterprises, value addition and innovations.

The efficiency of operation of the local authority could also be enhanced through building and connecting commodity value chains, improving agricultural productivity and marketing, and developing agro-enterprises. Value chain development has received significant attention in recent years and offers a strategic way to address the opportunities and constraints facing the productive sectors of a locality and its producers and businesses. A value chain is a supply chain made up of a series of actors, from input suppliers to producers and processors to local buyers and exporters, engaged in a full range of activities required to bring a product from its inception to its end use(s).

Finally, the role of rural local authorities in social and community development could be enhanced through the implementation of measures that seek to improve the health, education, housing and welfare of individuals, households and communities resident in rural district council areas of jurisdiction. Ultimately this improves social cohesion, capability and capacities of individuals and organizations, and the quality of life of rural residents. Together with other components of local economic development, this results in improvements in the asset base of individual families and communities, reduced vulnerability and increased food security.

The expeditious and effective implementation of the above measures can significantly improve the efficiency of operation of the local authority. Ultimately, this should lead to higher community resilience to the prevailing hydro-climatic disasters of droughts and floods in Lower Muzarabani District and areas with similar agro-ecological, demographic, socio-economic, cultural and political characteristics.

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