



**THE EFFECTIVENESS OF DROUGHT MITIGATION
STRATEGIES IN CHEGUTU DISTRICT,
MASHONALAND WEST PROVINCE, ZIMBABWE**

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Abstract:

Drought induced famine has been the worst disaster from which most rural people experience immense anguish. It still remains a National Policy Agenda and a problem in most developing countries like Zimbabwe. Due to climate change, the impacts of droughts are expected to deepen where the capacity to adapt is low. Though it remains a challenge in communities, local people have devised different coping mechanisms based on the resources that are locally available but the effectiveness of these are questionable. Therefore, using both qualitative and quantitative methods this work aims at identifying the drought mitigation strategies used in ward 12 of Chegutu district. People are using drought mitigation strategies which include food aid, food for work, and sale of livestock, remittances and irrigation schemes where provision of food aid and food for work while the least effective were remittances and irrigation. The study also revealed that 72% of the community was not familiar with the effectiveness of all the drought mitigation strategies used. The strategies are held back by challenges in the ward which induce poor service delivery by nongovernmental organizations (NGOs) and government departments in mitigating droughts, poverty, corruption, lack of resources and unclear selection criteria of beneficiaries as well as lack of markets thereby leading to inefficiency of the drought mitigation strategies. The study recommended the construction of more dams and necessary infrastructure for irrigation, adoption of local knowledge into mitigation strategies, improving access to agricultural inputs and enhanced provision of technical assistance to farmers in the area.

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1. Introduction

Drought is one of the common disasters which can undermine the livelihoods and well-being despite the use of various mitigation strategies (Mugotsi et al, 2012). It is a creeping phenomenon whose effects accumulate over time before they are felt and lingering on long after the actual event while problems associated with it can have environmental, economic and social problems or effects. Drought can cause a decline in crop yields resulting in declining income for farmers and also rise in market price for agricultural products. Therefore, it is important to ensure that measures are in place to minimize impacts of drought on human beings and their livelihoods although strategies may have limitations or weaknesses. Impacts of drought cannot be reduced by an individual but involvement of collective ideas that is authorities, individuals, communities, institutions, volunteer groups and others among these. Therefore, the goal of mitigation and preparedness is to reduce impacts of drought, reduce vulnerability and foster drought resilient societies (Ncube, 2010).

Recurring droughts are an endemic feature for agriculture in Zimbabwe, a country whose majority of the population (70%) depends on agricultural based activities as their livelihoods resource. Concern is growing that drought might become more frequent in the region as a result of global warming. If this occurs, it will exacerbate problems for vulnerable households, communities and economies. The study reviews coping strategies of the community towards drought, and assesses the capacity of local institutions in dealing with drought. The objectives of the study was to identify and examine coping mechanisms in place by individual households and the community, to identify local institutions involved in drought mitigation, to assess how local institutions have responded to disaster risk reduction and appraise the capacity of local institutions involved in risk reduction. Participatory, consultative and deductive research methods including household surveys, focused group discussions, key informants interviews, observations and review of literature allowed for the collection of empirical, descriptive, and spatial data to provide for the appraisal.

This study reveals that households in Chegutu district have developed sophisticated risk-management and risk-coping strategies to cope with food shortages or drought. In the initial phases of difficulty, tendency to reduce meal portions, go the whole day without food, sale of labour and use of available resources such as savings, were the most common. As the situation intensified, recourse was sought in broader social and economic interactions such as sending some members of the family to other relatives, cross border trading, sale of small stock; barter exchange and even begging were established. Finally, the sale of productive assets such as: large stock, implements and non-productive, but difficult to replace assets, such as valuable roofing material in the form of asbestos sheets occur. The study established that various institutions were involved in drought management in the district. They included government

departments, community based organizations (CBOs), NGOs, local leadership and the community, social networks that include friends and relatives and some religious organizations. However, not much support had been coming from government institutions as compared to NGOs.

Challenges common to both NGOs and Government departments included political interference in day-to-day activities that sometimes derailed implementation of drought risk reduction activities. The existing economic environment had also led to high staff turn-over in most government departments and shortages of inputs and materials required for drought risk reduction. The current global economic crisis exacerbated the situation affecting funding inflows for some NGOs. Recommendations were proposed and key among them were to design sustainable interventions for a drought prone area and a local and participatory agro ecosystem appraisal is necessary. The most effective interventions will prove to be those that enhance household coping strategies. A user friendly satellite remote sensing must be designed and vulnerability maps in the early warning systems to establish civil protection committees at grassroots level is of paramount importance.

According to Buckland et al (2000), drought is arguably the most important climatic challenge and has major impacts on rural livelihoods. In Zimbabwe most rural areas rain fed agriculture is the basis of livelihoods such that fluctuations in annual rainfall cause corresponding variation in variability of agriculture. About 70% of the Zimbabwe's population lives in rural areas, derive their livelihoods from subsistence agriculture and other rural activities (Buckland et al, 2000). In Zimbabwe, food security was at a crucial level primarily due to the lack of food, as the country passed through the peak of the hunger season prior to the new harvest experienced in April 2008. However, the biggest challenge to farming and food security in Zimbabwe is not lack of funds or lack of skills but climate change and global warming (FAO, 2008).

Changing climate and weather systems pose a serious threat to agriculture as they disrupted rains, causing droughts and resulted in higher average temperatures. World Bank report (2010) revealed that the impacts of a changing climate are already being felt, with more droughts, floods, strong winds and heat waves and it will increasingly pose challenges to development. Agriculture is extremely vulnerable to climate change, higher temperatures; eventually reduce yields of desirable crops while encouraging weed and pest proliferation. Although there will be gains in some crops other regions of the world, the overall impacts of climate change on agriculture are expected to be negative threatening global food security.

In Chegutu district, subsistence farmers are producing less on their fields as the years progress and as a result there is food shortages and effects of drought are worsening with time. Rainfall is erratic, poorly distributed and falls predominantly for a few months each resulting in livelihood insecurity since water scarcity and food security are interrelated problems. Mitigation strategies are used by used by households but there is need for continuous assessment and improvement of these coping mechanisms. There are also challenges associated with the implementation of

the strategies and these should be identified and combated for to increase the effectiveness of strategies. Therefore, the study seeks to assess the mitigation strategies in order to reduce the impacts and challenges faced by households in mitigating droughts in ward 12 of Chegutu district.

2. Research Methods

Burns and Grove (2003) define a research design as a blueprint for conducting a study with maximum control over factors that may interfere with the validity of the findings. A good research design has three main attributes namely the ability to answer research questions, internal validity and generalize-ability. In this study, a case study design was used because the research focused on a single entity or case which is ward 12 of Chegutu district. The main tool used was the questionnaire although other tools were also employed which includes interviews, observational, guides and focus group discussions. Major enquiries done were about experiences of drought in the area, causes of vulnerability to drought, the mitigation strategies used in the area, the extent to which the communities are benefiting from the mitigation strategies, the challenges encountered in migrating droughts in the area and possible solutions to the challenges.

The researchers employed a participatory approach to capture both quantitative and qualitative data on the mitigation strategies of the community, households, individuals and institutional capacity within ward 12, though the eyes and experiences of individuals households and ward level key informants. A desk review of existing data was conducted prior to field data collection to help the researcher appreciate how the community would normally conduct itself in adversity. Such reviews helped to guide the direction of primary research and for cross-checking information collected in the field (Holzman and Boudreau, 2008). In this study 30 questionnaires were designed and administered in a close ended format to individuals in the community and the second were 5 questionnaires in an open-ended format for ward level key informants that councilor, headmen, and head of institutions. A third guide was designed and used in focus group discussions.

3. Study Area

The research was carried out in the western part of Zimbabwe in Mashonaland province. Chegutu district is one of the seven districts in Mashonaland West province. It is located about 100km in the South western part of Harare along R2 Ward 12 eastern part of Chegutu district and it is also about 40km from Norton gong southwards. Chegutu district is in agro-ecological region 2b. It receives about 750-1000mm of rainfall per year. Its temperatures range from 18 degrees to 30 degrees Celsius. The rainfall is seasonal with 95% of it occurring between October and April. Precipitation usually occurs on a number of isolated rain days, seldom exceeding 60 rain days per annum. The area mainly consists of red-clay soils which are heavy. Chegutu district has a

number of streams however since the area is located now a dry area part of Zimbabwe and is now characterized by low erratic rainfall and droughts most of the streams are intermittent and flow only for a short period after storms except Mupfure river. There are also four big dams in Ward 12 namely Make, George, Zigra and Beersheba. This sometimes makes surface water very scarce in the area. There are also irrigation schemes in the area to improve agricultural production.

The main vegetation type is the tree bush Savanna with miombo forest being dominant including: musasa, munhondo and mopane trees. According to Moyo et al (1999), the catchment area also encompasses a number of species and among them there is the panicum fox tail grass and paraquary. The district does not have much difference with nearby districts such as Kadoma, Sanyati and Makonde. The geology of the area has some Zimbabwe craton, greenstone belts and granite terrain. It is in the Great Dyke of Zimbabwe. Therefore, there are a lot of minerals in the area (chrome, gold, platinum and others). The area has got also some clay and heavy loam soils.



Figure 1: Location map of areas in Chegutu district within Mashonaland west province, Zimbabwe

4. History of Drought in Zimbabwe

According to Morris (2004), drought is a period without substantial rainfall that persists from one year to the next. Therefore, it is the consequence of anticipated natural precipitation reduction over an extended period of time, usually a season or more in length (Kepas et al, 1999). So drought is a recurring natural phenomena. Drought studies are important because of their influence on the scarcity and the economy of the

nation. Extensive literature is available on droughts with respect to definition, methods of analysis and management procedures. A review of literature always helps a researcher to acquire information and to perceive the significance of the current status of the problem being dealt with (Krishna, 2013).

Droughts have been a recurring feature of the Indian economy and warrant the attention of administrators and policy makers for many decades. Adhoc relief works were started to provide employment and hence to increase the purchasing power of the people in chronically drought affected areas. After the prolonged droughts of 1965-67 only, there was a real awakening at the national level about the importance of evolving a long term strategy for implementing developmental measures in drought prone areas. In Zimbabwe, the studies of drought and drought monitoring have increased especially in the post-colonial era. This is so because of knowledge since Zimbabwe is one the countries which has educated people. In the pre-colonial era, droughts were being mitigated by drought tolerant crops and this has been going well. However, the recent researchers have come up with some new breeds and varieties of new seeds which survive in dry and hot conditions.

5. Household Drought Mitigation Strategies

The most common drought mitigation strategy was food aid which was acknowledged by all the 30 people (25 households and 5 key ward informants) sampled and the least common was irrigation acknowledged only by 4 of the sampled population (Table 1).

Table 1: Household drought mitigation strategy

Mitigation Strategy	Number Of Households
Food Aid	30
Food for Work	22
Drought Resistance Crops	16
Selling Livestock	14
Conservation Farming	12
Cash Remittances	7
Irrigation Scheme	4

The other strategies included food for work, drought resistant crops, sale of livestock, conservation farming and remittances. The food aid is received from government and care international only. Among drought mitigation strategies in Kenya, food aid was found to be the most common indicated by Nyamangwe (1995). At an interview, organizations confirmed that they distribute food aid to ward 12 every year. An interviewee outlined that food aid given by organizations has been helping the households for a long time.

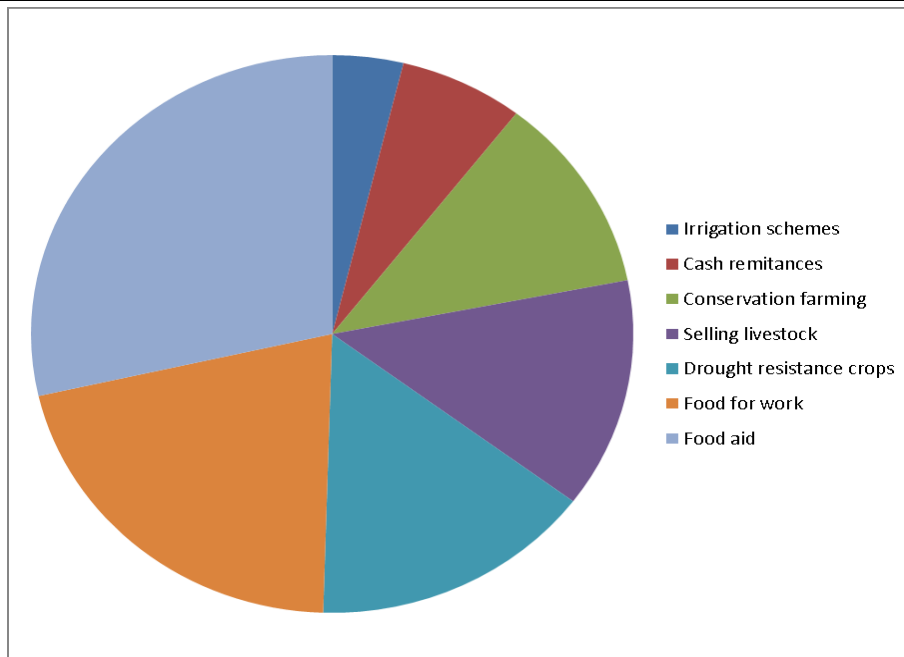


Figure 2: Household drought mitigation strategies

As illustrated in Table 1 food aid was another strategy used by households with a frequency of 22. Also, the interviews reviewed that food for work by NGOs is important since there is a gradual shift from free handouts to food for work. This was strongly backed by Sweet (1998) whose research findings NGOs and the government assisted in food for work projects in Namibia. In addition, about 16 households responded that they employ drought resistance crops like sorghum, millet and rapoko. As also obtained by the research of Bhavnani et al (2008) the impacts of drought were reduced by the ministry of agriculture through introduction of drought resistance crops. Although access of the seed is still limited to the majority of the households and they largely rely on maize production.

The responses from household illustrated showed that selling of livestock is also one of the strategies employed by the communities which were acknowledged by 14 households. During droughts times the effects are seen through livestock deaths. Therefore, household were forced to sell their livestock at a lower price and barter trade cattle with a bag of maize which is not profitable.

In table 1 about 7 households indicated reliance on remittances from relatives on keep food on the table and to meet their daily demands and needs during drought period. The remittances were sent by either relatives or family members who work in other areas in town or nearby growth points ; Ngezi, Mubaira, Chegutu town , Norton and others among these. Irrigation schemes are not very common as few households benefited from (Table 1) as they were only acknowledged by 4 households. The locals generally do not directly benefited from irrigation that explains the least number of household using this strategy. There is need to consider that farmers benefit from irrigation.

6. Food Crops

About 54% of the respondents claimed the popularity of cultivation of maize above any other crops although drought resistance crops survive under harsh conditions more than maize (Figure 3).

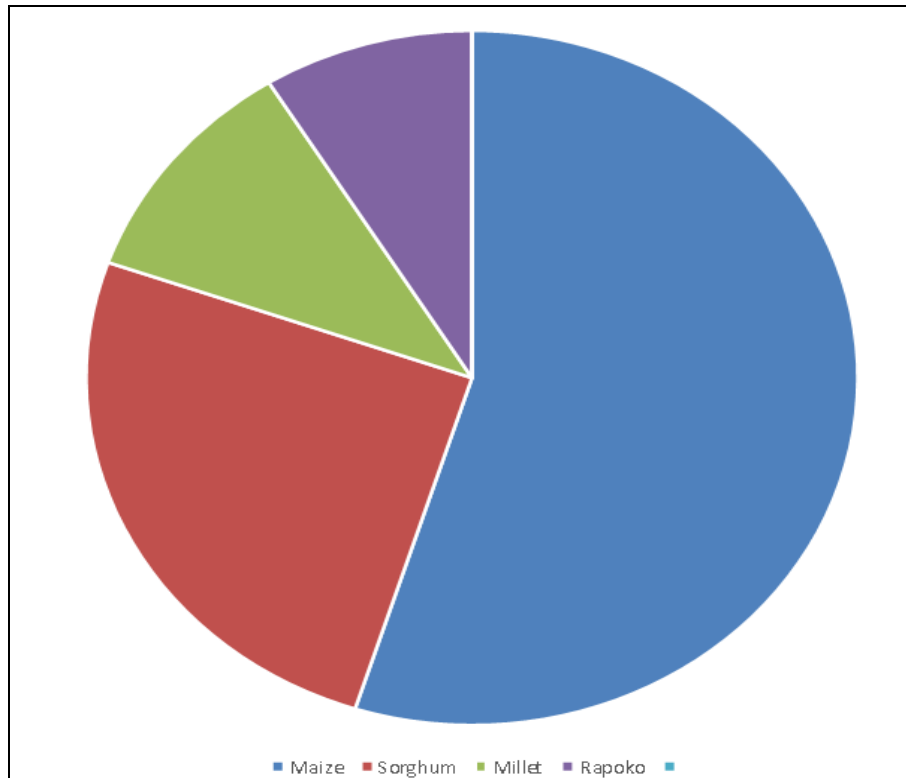


Figure 3: Food crops grown in ward 12 of Chegutu District

Sorghum is the most dominant drought resistance crop grown in the ward which constituted about 26% while millet and raapoko constituted 11% and 9% respectively. Sorghum is an important drought tolerant food grain in Zimbabwe and it is mainly cultivated in region 4 and 5 however, people in Chegutu are also growing it because of droughts which are occurring now and then. According to Kaseke (1996) the majority of farmers were growing maize on larger hectareage and while small grains were planted on small hectrage. Millet and rapoko were not that common due to lack of access to seeds. This is true in Chegutu as most of the households still cultivate maize in marginal areas rather than drought resistance crops like sorghum, rapoko and millet.

7. Sources of Food

Own production is the most common source of food (Table 2) because in rural areas the majority of the households still depend on rain fed agriculture as their basis of livelihood although there are recurrent droughts. The households produce their own food through subsistence farming and maize being the dominant crops which is

threatened by erratic rainfall in the western part of Zimbabwe resulting in low agricultural yields.

Table 2: Sources of food in ward 12 of Chegutu District

Source of food	Number of households
Own production	29
Drought relief	18
Buying from markets	15
Remmitances	12
Casual Labour	9

Some farmers sell their produce and use the money to buy other food stuffs from market as illustrated in Table 2 that 15 households indicated that they acquire food from the market. As a drought strikes, about 18 households acquire food from drought relief programs which include food aid and food for work programs. The households receive food aid and also benefits from food for work programs from the government and NGOs such as care and social warfare. Casual labour is another strategy which helps people to have access to food through income and food generated from the labour. Casual labour was acknowledged by 9 households.

8. Impact of Drought Mitigation Strategies on Households

The households who claimed that they were not benefiting from drought mitigation programs constituted 72% of the respondents. The majority of the households pointed out that the drought mitigation strategies were generally not effective in reducing food shortages and hunger. Recurrent droughts exacerbate the rural poverty since NGOs and the government provides food handouts which are effective only during drought times while leading to a dependency syndrome among households. Most of the food for work programs is not sustainable due to lack of integration and cooperation among stakeholders and the households. There is lack of creativity and willingness to work in projects so this will result in inefficiency of the programs.

In addition, the bulk of the households argued that the drought mitigation strategies especially coordinated by NGOs has created conflicts and hatred among the community especially on selection criteria. This has resulted in social exclusion especially of the poor of the poorest. Some households (about 28%) of the respondents argued during the research that the drought mitigation strategies were effective especially food aid because they receive free food handouts. Despite this fact most of them create a dependency syndrome and they are only effective in the short term while in the long run hunger and starvation will persist.

9. Challenges Faced during Drought Mitigation

The households were facing quite a number of setbacks (Figure 4) in trying to reduce the impacts of drought and these have contributed to the non-effectiveness of drought mitigation strategies. Responses from questionnaires, interviews and focused group discussions pointed out that poverty, selection criteria, ineffective institutions and increased frequency of droughts and remoteness of the area were the major challenges faced in trying to mitigate the impacts of droughts. Households emphasized increasing frequency of drought as a clear and major challenge. A concern is growing that drought might become more frequent in the region as a result of global warming (UNFCC, 1988).

Mashonaland west was affected by poor rainfall amounts as well as distribution especially in the most recent seasons (Ministry of Agriculture, 2008, 2912, 2013). For the majority of the population, lack of assets and means of livelihood and precarious economies with low coping or adaptive capacity present key factors that enhance vulnerability to impacts of droughts. Poverty is the major problem which is exacerbated by drought effects as indicated by Maphosa (1994). The respondents mentioned that due to lack of capital they do not have access to inputs such as fertilizer, seeds, and farming equipment.

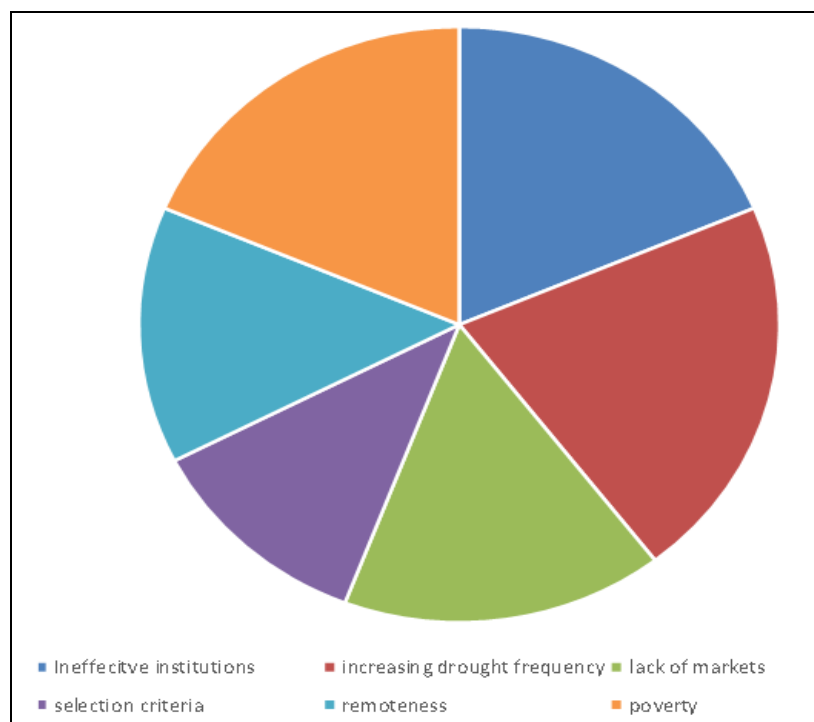


Figure 4: Challenges faced in mitigating drought in ward 12, Chegutu district

During the research the households revealed that there are no markets for their produce especially vegetables and drought resistant crops such as millet and rapoko so the majority cultivated maize for food production. A similar finding was found by Chazovachii et al (2010). There is no market for drought resistance crops and people are

relying on the local market. They said the ears of millet, rapoko and sorghum plants might not ripen at the same time thus may have to be more than one harvest. Another challenge is that drought resistant crops demand more labor hence the majority of the villagers opt for maize. The geographic location and remoteness of the ward makes it more vulnerable to droughts and is isolated from market centers as growth points. The poor road networks and communication networks makes the area inaccessible as the roads are very poor such that the donors and investors shun away this ward. This isolation due to a lack of infrastructure may limit choices and copying strategies during times of stress and drought.

There is lack of integration and coordination among Government departments, NGOs and other institutions in disaster management institutions. Challenges include political interferences, lack of resources and lack of coordination in drought management. At a group discussion, the respondents stated that only a few benefited from programs since there is political interference thus most vocal benefit more than the poor of the poorest. The households were benefiting from institutions to a lesser extent since most of the assistance is helpful in the short term just after drought but in the long run there are persistent food shortages. Respondents also noted that the selection of beneficiaries to be incorporated in drought mitigation strategies is usually done by the most vocal persons and political elites. Consequently, corruption and favoritism makes only a few to benefit from programs done by agencies. The vulnerable households usually suffer the most if they are not included in the program.

10. Recommendations

This section summarizes the effectiveness of drought mitigation strategies in ward 12, Chegutu district. It is recommended that more dams should be constructed for irrigation in ward 12 and the community can fully utilize the existing irrigation infrastructure. Given the anticipated climate change that is set to further disrupt the rainfall pattern making rain fed agriculture even more un-reliable (Andear, 2009), the scaling up of irrigation infrastructure is called for. Yields achieved on smallholder schemes are higher than rain fed dry-land yields in communal areas. Gross margins for irrigating farmers are significantly greater than for dry-land farmers. As noted by FAO (2000) the effect of irrigation on increasing crop production and incomes is even more marked in the dry winter season, when dry-land production is impossible because of lack of rain.

Civil society should involve the local traditional drought mitigation knowledge and practices as this could provide the basis for development of more effective strategies. Farmers should be provided with technical assistance and other farming technologies to improve agricultural yields by such organizations as AGRITEX amongst others. The farmers should have access to drought resistant crops since they sustain more in drought prone areas than maize. They should be encouraged to cultivate small grains such as rapoko and millet and also markets for these should be established as a

trigger for production (Eldridge, 2002). Off-farm income or income diversification should be promoted by the organizations to avoid the risk associated with relying on farming alone processes.

It is suggested that outside agencies must understand the local coping strategies, otherwise external humanitarian interventions will undermine them, creating aid dependency and all manner of unintended and detrimental outcomes. To design sustainable interventions for a drought prone area, a local and participatory agro ecosystem appraisal is necessary. Further, the most effective interventions will prove to be those that enhance household coping strategies. Local leadership should be seen to play a more active role in leading drought mitigation strategies at community level instead of being associated with food aid distribution. In addition, there is need for the government to expedite the review process of the Civil Protection Act that is set to be replaced by the Emergency preparedness and Disaster Management Act. This will pave way to the establishment of an authority that will be more robust in disaster risk reduction than the current scenario where activities of the Civil Protection Unit are mostly confined to disaster response. Response is more costly and unsustainable than mitigation.

11. Conclusions

About 70% of Zimbabwe's population derives its livelihood from subsistence agriculture and other rural activities, but these livelihoods are threatened by climate change. The agriculture sector's reliance on seasonal, rain-fed cultivation makes the sector particularly vulnerable to climate variability and change (Andear, 2009). Although drought can result from a number of different causes, one of the most common drought scenarios occurs when crops and livestock suffer from severe moisture stress. This is when available water is less than the physiological needs of the same. In the past five years, almost all have been agricultural droughts. The rainfall pattern has been so erratic and mostly characterized by dry spells such that rain fed agriculture has become unreliable.

Poor rainfall has resulted in rural households failing to harvest any meaningful produce, even those who harvested some grain; it was not enough to see them throughout the season resulting in food insecurity and stress as confirmed by reports from ZimVAC (2009). Most farmers depending on rain-fed agriculture experienced a yield decline, with average yield declining from the expected 4 t/ha to 0.1t/ha. The decline has been exacerbated by shortage of inputs such as fertilizer, appropriate seed varieties, inadequate extension services and timing of planting. In addition, the devastating effects of HIV and Aids estimated at 15.5% and the continuous rural - urban migration or border jumping to neighboring countries such as Mozambique and South Africa in search of opportunities among the most productive age group posed a challenge to food production.

The majority of communal farmers lost drought power and the high cost of inputs and unavailability of inputs had further compounded the challenges rural households faced. To acquire the necessary inputs they needed to realize better yields (Agricultural Technical & Extension, 2008). Most farmers lacked the requisite knowledge and skills to manage their farming activities as commercial enterprises. The situation was exacerbated by the high extension worker farmer ratio and demotivated staff.

The major source of food was own production and casual labour while income sources were peasant farming, casual labour and formal employment. The livelihoods of the farmers were therefore fragile since their livelihoods which were agro-based faced the threat of drought.

Farmers had, however, employed a number of drought coping strategies in anticipation of, and during the drought period. The households mostly changed the seed variety planted, increased the hectareage of drought resistant crops, staggered planting dates to reduce risk of dry spells, changed farming methods and adopted water conservation techniques. Meanwhile during the drought period, the households had been forced to adopt coping mechanisms in an identifiable sequence, from the least to the most erosive ones.

The study established that households started by reducing size of the food portion, skipped some of the meals, at times went for the whole day without food, were forced to eat unusual wild fruits and vegetables, ate premature crops, borrowed from neighbours and provided labour in return for food. But when the situation deteriorated, mechanisms such as sending some members of the family to other relatives, distress disposal of livestock and other productive household assets and migration were not uncommon.

A wide range of agencies are involved in drought mitigation in the form of government departments, quasi-government institutions, NGOs, local leadership and other community organizations while the private sector has not been active. The limited involvement of the private sector has also been reported by Ndlovu (2010). Agencies have led and implemented a number of risk reduction programmes to increase the communities' resilience to drought. Irrigation construction and rehabilitation, dip tanks rehabilitation, livestock pass on schemes, agricultural inputs and market fairs, income generating activities, VS&L schemes and farmer training in various agricultural facets were revealed.

The agencies involved in drought risk reduction have done so with community involvement and participation, a key factor in sustainability of most of these interventions. However, their work has faced a number of obstacles in the form of underfunding, lack of resources, staff turnover and political interference. The non-availability of corresponding effective structures or committees such as DDRC and Civil Protection Committees at village/ward level may need to be reviewed.

Disaster management in the country is currently regulated by the Civil Protection Act number 5 (Zambia, 1989). This act is being complemented by other

sections of the law for synergism and effectiveness. Funding of the Civil Protection Unit under which the act is administered is provided for in annual budgets. However, funding has not been adequate to meet both mitigation plans and emergency response even though there is a provision in the Act for 72 Treasury to inject additional funding. In order to effectively respond to emergencies, government has had to divert funds that are meant for other developmental projects in other areas. In most cases, NGOs or international agencies such as WFP have come to the rescue of the state in terms of importation and feeding of vulnerable groups while UNICEF has also played an important role in the water and sanitation sector by providing water treatment chemicals.

However, due to some shortcomings in the current Act, the country has engaged in a process to review its legislation since 1995 in an effort to strengthen disaster risk reduction. It is anticipated that the process will end with the repeal of the current Civil Protection Act and to be replaced by the Emergency Preparedness and Disaster Management Act which will provide a legal basis for the establishment of an Emergency Preparedness and Disaster Management Authority whose major functions include developing a risk reduction strategy in order to minimize vulnerability to both natural and man-made or technological hazards (MLGPW & UD, 2006).

In the study, households employed a number of drought mitigation strategies and they heavily relied on drought relief from NGOs and government. Such drought response measures often result in immediate effects on people's lives and livelihoods in the short-term especially drought relief. However, these efforts are also creating dependencies and other new vulnerabilities. Although it is an important safety net (drought relief) as shown in the study and often politically appealing, it should not be the primary focus on drought risk reduction. The drought mitigation strategies have not been fully effective in ward 12 of Chegutu district.

The majority of the households argued that they are not benefiting from strategies and there are persisting food shortages. The study revealed that in terms of food availability most of the strategies are not sustainable as they are short term and vulnerability remains high after them. A number of challenges which include poverty increased drought frequency and selection criterion for beneficiary of relief programs have contributed greatly to the perceived ineffectiveness of drought mitigation strategies in ward 12 of Chegutu district. The challenges have reduced the capacity of the households to reduce the droughts impacts and acquire food surplus. The study recommended strategies which capacitate the community and are sustainable.

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References

- Agricultural Technical & Extension. (2008). *Quarterly report*, Unpublished, Harare
- Andear, C. (2009). Zimbabwe- Coping with drought and climate change. [Electronic]. Available: <http://www.adaptationlearning.net> [2011, March 13].
- Ajay and Beldev Sahai (1986) Socio-economic impacts of natural disasters: a gender analysis. Sustainable development and Human settlements division, Santiago, [Electronic]. Available: <http://www.eclac.org> [2011, February 21].
- Buckland, R., Eele, G and Mugwara, R (2000). Humanitarian crisis and natural disasters. A SADC perspective. Food and Humanitarian security. Frank Cass Production. London.
- Blackburn, H.D., Glimp, H., Phillip, D., Child, D. & Pope, A. (1993). Utilization and preservation of livestock resources. Washington, DC. US Agency for International Development (USAID), Bureau for Food and Humanitarian Assistance, Office of U.S. Foreign Disaster Assistance (OFDA)
- Burns, C. and Groove, P. (2003). The Practitioners' Guide to Household Economy Approach. [Electronic]. Available: www.feg-consulting.com. [2010, April 14].
- Campbell, D.J., Zinyama, L.M. & Matiza, T. (1991). 'Coping with food deficits in rural Zimbabwe: The sequential adoption of indigenous strategies'. *Research in Rural Sociology and Development* 5:73-85.
- Census (2012). Zimbabwe's population and demographic statistics, Statistical Offices Harare,
- Chazovachii, B., Chigwenyu, A., and Mushuku, A(2010). 'Adaptation of climate resilient rural livelihoods through growing of small grains in Munyaradzi communal area. Gutu District'. *African journal of Agricultural research*, 8. 1335-1345.
- Decon, S., Haddinolt, J and Woldehanna. T (2005). *Shocks and consumption in Ethiopia. Journal of African Economies*. 14(4), 559-585.
- Devappa and Khagesten (2011) Industrial utilization of sorghum and millet in Zambia: An approach to food security *In Food security yolicies in the SADCC region*, eds. M. Rukuni, Mudimu, G. & Jayne, T.S. 191-203. Harare, Zimbabwe: University of Zimbabwe, Department of Agricultural Economics and Extension, University of Zimbabwe/Michigan State University Food Security Research in Southern Africa Project
- Dracup, Bang, S.K. & Sitango, K. (1980). Indigenous Drought Coping Strategies and Risk Management against EL Nino in Papua New Guinea: CGPRT centre Working Paper No. 74. [Electronic]. Available: <http://ageconsearch.umn.edu/bitstream/32687/1/wp> [2011, March 13].
- Eldridge, C. (2002). Why was there no famine following the 1992 southern African drought? *IDS Bulletin* 33, 4: 79-87
- FAO (2008). *Zimbabwe 2008/07 Agricultural season update*

- Hokonan and Boudreau (2008) Early warning and vulnerability assessment for famine mitigation. Tucson, Arizona: University of Arizona, Office of Arid Lands Studies. Prepared for the USAID/OFD A through the USDA/OICD, Washington, D.C.
- Kaseke, E. (1996). *Social security systems in Rural Zimbabwe* Weaver Press. Harare.
- Kepas, T.T.G (1999). Household food security in Tanzania: Preliminary findings from four regions: *In Market reforms, research policies, and SADCC food security*, Zimbabwe: University of Zimbabwe, Department of Agricultural Economics and Extension, Harare
- Krishna, B. (2013). Coping with drought: Research findings from Bulilima and Mangwe Districts, Matabeleland South, Zimbabwe. Practical action. [Electronic]. Available: <http://www.preventionweb.net/> [2011, March 13].
- Madzvamuse (2010). Famine mitigation in Zimbabwe: Same practices. Impact lessons *Journal of the middle state geographer* 28, 37-44.
- Maphosa, B. (1994). Lessons from the 1992 drought in Zimbabwe. The quest for alternative food policies *Nordic Journal of African Studies*.
- Morris, B., B. (2004). Climate growth in Africa: adaptation strategies and institutions. A synthesis report prepared for the Heinrich Boll Foundation,.
- Moyo, B. (1999). The impact of growth in the tourism sector on economic development: the experience of selected Caribbean countries, *Economia Internazionale*, 48, 375-85.
- Mnet, U. (2010) Mobilizing for nature in southern African community-based conservation policies, or the death of the local. *Biodiversity and Conservation*, 18, 2585–2600.
- Ministry of Agriculture (2013). Second round crop and livestock assessment Report.
- Munro, L.T. (2006). Zimbabwe's drought relief programme in the 1990s. A re-assessment using the national household survey data. *Journal of contingencies and crisis management* 14, 3:125-141.
- Murerwa, Z.P. (2010). FEWS Current Vulnerability Assessment Guidance Manual. Introduction to Current Vulnerability Guidelines. [Electronic]. Available: <http://www.the-ecentre.net> [2011]
- Mugotsi, K., Nyangito, M.M. and Nyariki D.M. (2012). The role of drought among Agro – Pastoral communities in Semi-arid Environments: The case of Botswana, *The journal of arid environments*. 91, 38-44.
- Mushore, T.D. (2013). Climatic changes, erratic rains and necessity of construction water infrastructure. Post 2000 land reform in Zimbabwe. *International journal of scientific and technology Research* 2(8).
- Narajan (2003). Communal Area Livestock Management Systems in Zimbabwe. In FAO Corporate Document Repository; Agriculture and Consumer Protection. [Electronic]. Available: <http://www.fao.org/> [2011, April 01].
- Ncube S., P. (2010). Reservoir operation under different climate scenarios. Case of Roswa Dam. Bikita district. University of Zimbabwe. Harare.

- Rulinda, W., Rersfg, G. and Delphi, F. (2010). Reducing the Risk of disasters- Helping to Achieve Sustainable Poverty Reduction in a Vulnerable World: (Unpublished paper). A DFID policy paper.
- Palmer, A. (1968). Drought preparedness planning: building institutional capacity. *International journal of Environmental science*. Vol 4: 67- 101
- Seiler (1998) Planning for drought: Moving from crisis to risk management. *Journal of the American water Resources association* 36: 697-710.
- World development report (2010). Vulnerability preparedness and mitigation. *Natural and Anthropogenic Disasters*, Springer. New Delphi.
- ZimVAC. (2009). Zimbabwe Vulnerability Assessment Committee (ZimVAC) Interim Rural Food Security Assessment. Co-ordinated by the Scientific Industrial Research and Development (SIRDIC) & Food and Nutrition Council (FNC), Zimbabwe. Chapter 10:06. (1996). Civil Protection Act. (Act 5/1989). Chapter 10:06. Revised Edition, Zimbabwe: Government printer, Harare.

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