

THE INTERNATIONAL JOURNAL OF HUMANITIES & SOCIAL STUDIES

Water Scarcity and Socio-Economic Development in Rural Communities of Zimbabwe: The Case of Bulilima District, Zimbabwe

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Abstract:

One of the most crucial natural resources which can make a meaningful contribution to the socio-economic development of rural communities is water. It is widely used for various reasons or purposes ranging from household chores to agricultural purposes. In Zimbabwe, water resources have faced various constraints due to the negative impact of climate change and unreliable rainfall patterns which have significantly contributed to water scarcity within the country. Policies on water in the country have been geared towards redressing the colonial imbalances of unequal distribution of water between commercial farms, urban areas and rural areas instead of increasing water availability and access to the poor households in the rural areas. Previous colonial policies abandoned the development of rural areas even through the distribution and access of water. This paper delves into this intriguing history of water policies in Zimbabwe and whether they have managed to benefit the disadvantaged rural communities. In addition, this paper links the relation between water and socio-economic development. It concludes that the availability of water is crucial in the survival of rural communities who are largely dependent on water for their agricultural activities which is the main source of the economy.

Keywords: *water scarcity, erratic rainfall pattern, climate change, socio-economic development*

1. Introduction

Water is an indispensable, undoubtedly critically and paramount important natural resource that all countries around the world largely depend on to spruce their economies (Scheumann and Neubert, 2002). It contributes significantly to the various sectors of the economy namely: agriculture, transport, health, energy, mining and industry to mention a few (Malzbender and Earle, 2007). Communities and households in Africa rely on water supply for their various activities namely household chores, gardening and irrigation for farming. Their lives are centered on the availability of water for both social and economic benefits and gains. These mainly include poverty eradication as identified in the Sustainable Development Goals (SDGs) and food security (Malzbender and Earle, 2007). However, this can only be realised through efficient water policies that ensure adequate supply and distribution of water. Despite the formulation of legislative and policy frameworks by many countries on water governance and management, the resource is under a lot of threat due to factors such as climate change. Water scarcity has emerged as one of the biggest challenges to the availability of water. Urdan (2011) contends that a closer look at the recent past years shows that easy accessibility of water has emerged as one of principal problems that the world at large is facing which threatens the sustainability of the ecosystem as well as human survival. There is an emergence of an era of parallel freshwater profusion which is largely influenced by disproportions in water prosperity, protracted inadequacies and dilapidating ecological balance throughout the majority of the densely-populated areas on earth (Urdan, 2011).

According to Ashton (2006) Africa chiefly depends on enormous river basins that are mutual divided among countries accounting to 85 percent of natural resources. Many countries in the Southern African region (Zimbabwe, South Africa, Lesotho, Namibia, and Zambia) share river basins with each other and are dependent on one another for the supply of water. In some cases, other countries sell their water to gain revenue and royalties and this is evident through water projects such as the Lesotho Highlands Water Project (LHWP) where Lesotho sells its water to neighboring South Africa. However, water resources are facing several constraints especially with the alarming growth of the population. The enormous increase in terms of population in the continent has in turn influenced, an upsurge in the petition of water which has resulted in many countries reaching an ultimatum where by scarcity of water now acts as a

stumbling block towards development (Aston, 2006). People around the universe, have and continue to identify water as the most essential and vital natural resource which acts as a locomotive that determines the journey of the ecosystem as well as socio-economic development of human beings (Ashton, 2006).

In the present day, almost all the countries are faced with a very serious escalating crisis, of coming up with solutions so as to service the ballooning populations with the view of avoiding a water conflict that can emerge as a result of water scarcity. Several conflicts are starting to emerge across the world from China to the Middle East to Ethiopia and India (Pacific Institute, 2015) as a result of shortage of water supply. However, one of the crucial factors to take note of with regards to water scarcity as reiterated by Ashton (2006), is that water provisions continue to diminish because of pollution catapulted by the rapid and prompt industrialisation that is taking course around the world due to technological innovations, which has also increased the urbanisation phenomena.

This circumstance is predominantly severe in dry areas that are found in some parts of the planet whereby water scarcity is related with water contamination, thereby restricting social and economic development resulting in the occurrence of poverty, hunger and diseases. The Southern African region is characterised by erratic rainfall patterns which has resulted in droughts and famines over the years (IWMI, 2006). Small scale farmers and rural households are largely affected by food insecurity subsequently resulting in the exacerbation of poverty levels. Over-reliance on rain-fed agriculture has dealt a heavy blow on the livelihoods of rural communities within the SADC region. Yaffe et al (2003) note that water is reputable a precarious resource, that has been poorly supervised in the world through ineffective water policies. Therefore, close affiliation between adequate water and socio-fiscal growth poses a challenge to development practitioners or policy makers to come up with impartial and justifiable elucidations that will solve the challenge of water shortage (Ashton, 2006).

In the Zimbabwean case, rural communities have been faced with inadequate supply of water over the years. The government has failed to come up with efficient water policies to address the imbalance between supply of water to the urban and rural areas. The colonial times in the country ensured that the majority of Africans did not access proper water infrastructure that would enable the adequate supply of water amongst communities forcing them to rely on boreholes and unprotected wells. The post-colonial period has fallen into the same trap, with little being done to address the plight of the rural populace with regards to access to safe and clean water. Therefore, this paper will explore how water scarcity has affected the socio-economic development of rural communities in Zimbabwe.

2. Water Policies in Zimbabwe

In the advent of independence in Zimbabwe on the 18th of April 1980, the government made an enormous mistake of adopting the same water policy utilised by the British administration during the imperial reign, which resulted in managing water distribution in the country till 1998, when the government formulated new water policy, thereby terminating the colonial remnants (Muchaparara, 2008). In simply words the Government of Zimbabwe continued with the discriminatory water policy implemented under the colonial government. All this happened or took place under the banner of independence until it formulated its own water policy in 1998. Both the urban and rural areas continued to suffer the same fate years after the attainment of independence in the country. Colonial water policies were biased towards rural areas where a majority of the blacks resided. This limited their capabilities to engage in other forms of agriculture such as irrigation farming as they lacked the necessary financial support and infrastructure to engage in such activities.

Under the 1927 and 1976 water acts enforced by the colonial government, water was apportioned by the utilisation of hierarchy human race importance and statistical structure (Manzungu, 2002). The colonialist who in this case were the white settlers had the privilege to enjoy adequate water supply while the majority of the Africans were faced with constant water woes and shortages. Statistically the few number of white settlers had abundant water supply as compared to the large number of blacks. However, this water allocation structure deprived the majority black populace in the country, who virtually lost control of all their natural resources when colonial rule emerged in 1890 (Manzungu, 2002). Therefore, when the water policy was first formulated in 1927 by the white settlers, the black populace was sidelined as they were not consulted to air their views on how water resources in the country can be equitable distributed (Manzungu, 2002).

White settlers flourished under this stringent water policy through the social and economic benefits they got. Commercial farming was widely practiced by the white farmers while the blacks were confined to small scale or subsistence farming. In addition, Manzungu (2002) contends that blacks were seen as sources of cheap labour for the white farms and they lived in appalling conditions being given small wages. Water rights were closely linked with land tenure structure in the country that virtually omitted the native populace who now lived in "tribal trust lands" after being forcibly resettled there by the whites without any entitlements to claim right ownership of the land (Manzungu, 2002).

During the early colonial times in Zimbabwe, repressive and discriminatory policies were introduced like the creation of the Gwayi and Shangani Reserves where a majority of the Africans were moved from their ancestral fertile lands to the rocky infertile reserves. Manzungu (2002) contends these areas were termed communal lands after the attainment of independence in the country. Such lands only confined Africans to subsistence farming meanwhile commercial farming was only done by the minority white settlers. There was no monetary value placed or attached on these reserves or communal lands and thus Africans could not generate any form of income. This unjust partitioning of land concurrently reflected the uneven dissemination of privileges and rights between these two groups with the white commercial farmers enjoying a lion's share while the majority of black farmers continued to be faced with numerous problems and challenges (Manzungu, 2002). Clearly this was a reflection of the Water Act that was enacted in 1979 which put a demarcation line between the white settlers and the Africans.

During the post-colonial era in Zimbabwe, water distribution policy was still wide of the mark, despite the country now enjoying the benefits of equality among the citizens (Manzungu, 2002). The country was still using the Water Act of 1976 which had been

instituted by the white settlers and was a revision of the 1927 Act which delineated blacks from fully utilizing water resources within the country (Manzungu, 2002). The whites during the advent of independence enjoyed the privileges they had before as they controlled the majority of the land and utilised water resources for commercial farming. Meanwhile the majority of blacks residing in the rural areas did not have access to safe and clean water and were engulfed in poverty marred with high unemployment. This resulted in the rural-urban migration dichotomy in pursuit of wage employment or greener pastures. The introduction of the 1998 water policy was geared towards addressing these inequalities and ensuring an effective framework that would deal with water access, distribution and supply to the over-populated urban areas and the disadvantaged and underdeveloped rural areas.

Reforms in the water sector in Zimbabwe was done through two laws. Firstly, through the Water Act with special reference to Chapter 20: 24 and secondly through Chapter 20: 25 of the Zimbabwe National Water Authority (ZINWA) Act. Both these acts were brought together into law by the parliamentarians in 1998 (Government of Zimbabwe, 1998). Thus, the main objective of the Water Act was for it to act as a benchmark towards the improvement as well as competent usage of the nation's water resources, while the Zimbabwe National Water Authority (ZINWA) Act was preordained to institute a nationwide water consultant by being a leading water authority in the country to ensure the provisions, supply and distribution of water (Government of Zimbabwe, 1998). The Government also adopted other global policies on water reform such as the Integrated Water Resources Management (IWRM) which deals with the management of water resources for socio-economic benefits for communities whilst conserving the ecosystem (Radif, 1999). The idea of this framework is to involve all actors and users of water, for example, water authorities, Government, communities, private sector, industry and other sectors of the economy to participate in the management of water resources so as to achieve sustainable development (Radif, 1999).

Decentralisation was beheld as a route towards accomplishment of effective water authority monitoring scheme that is liable to local populace especially the grassroots (Crook and Manor, 1998, Manor, 1999). Supplementary to this ideology was the impression that devolution of water supervision was of paramount importance in endorsing the representative involvement of diverse water consumers in verdict creation procedures (Mtisi, 2011). Finally, advocates supported the idea that treatment of water as a fiscal commodity specifically by means of the 'valuing' of water, will result to use of water wisely as well as creation of income essential for bankrolling devolved organisations of water supervision with the view of improving provisions of water among the people countrywide (Mtisi, 2011).

While revolution in terms of water policy in the country entrenched the notion and doctrines of cohesive or unified administration of water resources, it didn't reflect all the people's worries and desires in terms of water revolutionary process in the country, especially the poor (Matinenga, 1999). One of the chief worry among the poor people was the need to "redress colonial injustices in the water sector" (Matinenga, 1999; Manzungu et al, 1999; Bolding et al, 1998) for instance, certain bureaucrats argued that continued privileged access to water by commercial interests-mainly large scale commercial agriculture-was at variance with the political dispensation of an independent Zimbabwe.

Major debates resonated on the need to transform and revitalise the water sector in Zimbabwe so as to institute an authorized charter that guaranteed people in the country to equitable access water (Mtisi, 2011). Reasonable the ability to gain adequate access to various water resources is regarded as an important entity or a right that the rural populace should also enjoy so as enhances their "means of support" that principally depend on water availability (Mtisi, 2011). Therefore, ensuring access to safe and clean water to communities is the first step to achieving sustainable development and addressing poverty.

In terms of the constitution, there is flexibility in who should actually own dams in the country, which include local authorities, private companies as well as individuals (African Development Bank, 2011). In terms of statistics, Zimbabwe possesses about 2200 dams in total with the Government having constructed 850, the private sector owning small dams that accumulate to the figures of 1350 (International Development Bank, 2011). Meanwhile a report by the International Commission of Dams points out that Zimbabwe owns around 253 large dams and a majority of those (approximately 100) are owned by the Government, private owners have the bulk of the share with 146 and city governments own 7 of those large dams (African Development Bank, 2011).

Weather settings in the country are principally characterised by a solitary rainy season which can be defined as subtropical. Therefore, the precipitation forum is inadequate, uneven and unpredictable which has acted as a disadvantage in the implementation of auxiliary or indefinite irrigation systems, there by contributing to failure to realise the full potential of agriculture in the country. In arid regions in the country, rivers are seasonal which marks or entail that uneven weather patterns acts as one of the main problems faced by the country in the administration of its water resources (African Development Bank, 2011). Another challenge faced by the country is principal over reliance on surface water to service people's desires, instead of also investing in ground water sources to complement the surface water dependency phenomena (African Development Bank, 2011).

3. Study Area, Methodology and Data Collection

Bulilima area is situated in the South-West of Zimbabwe along the border with Botswana. It was once called Bulilimangwe before it was split into three districts namely Mangwe, Bulilima and Plumtree. The district is largely rural with a majority of the population residing in the rural areas. Plumtree town is the only urban settlement and it is well known for its proximity near the Botswana border and it is identified as a border town. The district has a population of 90 561 with 41 808 comprising of males and 48 753 of females (Census 2012). Economic activities within the district mainly include wildlife and agricultural activities. Zimbabwe is divided into five natural regions with region 1-3 being well known for farming. Constant rainfall patterns occur in these regions. Regions 4 and 5 are the driest ones in the country and this is where Bulilima District is located. It is found in Region 4 which is not suitable for farming. However, a majority of the communities mainly rely on growing drought resistant crops and engage in conservation farming. The area is suitable for livestock production where animals such as cattle, goats and sheep are reared.

This paper used the qualitative research methodology as a form of inquiry to get a deeper understanding of the phenomenon of water scarcity amongst the rural communities and its impact on the socio-economic development of rural areas in Bulilima District. In terms of data collection, primary and secondary sources. A total number of 50 respondents were purposively selected for the research. They mainly entailed community members (20), Agricultural Extension Service (AREX) officers (5), NGO officials (10) working within the wards, water authorities (8), traditional leadership (2) and Government officials (5). Interviews were done with the officials from AREX, NGOs, water authorities, Government and traditional leadership. Meanwhile focus group discussions were held with the community members and in some cases questionnaires were distributed to other members who could not be interviewed or could not attend the FGD's.

This study was carried out with the authorisation and permission from Bulilima Rural District Council and the local leadership. Native languages specifically Kalanga and Ndebele were utilised to safeguard easy communication with the respondents, while questionnaires were deciphered from English to Kalanga and Ndebele. The study also sought the assistance of interpreters as the researchers were not well versed or familiar with the Kalanga language. This was done to easily facilitate communication between the researchers and the respondents.

4. Results and discussion

4.1. Demographic Characteristics of the Participants

The study mainly comprised of 50 participants ranging from community members, AREX officials, water authority officials, government officials, and traditional leadership and NGO officials. The table below presents a summary of the demographic characteristics of the respondents in the two wards of Makhulela and Ndolwane in Bulilima District.

| | |
|-------------------|---|
| Gender | Male (41%) Female (59%) |
| Age | Below 20 (9%), 21-30 (16%), 31-40 (7%), 41-50 (21%), 51-60 (39%), 60+ (8%) |
| Education level | Primary (36%), Secondary (25%), Certificate (8%), Diploma (19%), Degree (12%) |
| Size of household | 1-4 (29%), 4-8 (53%), 8+ (18%) |
| Source of income | Farm (23%), Remittances (32%), Government (8%), Pension (3%), Self-employment (34%) |

Table 1

A majority of the respondents were females (59%) more than males (41%). The study observed that most of the males in these two wards in Bulilima District had migrated to neighboring countries such as Botswana and South Africa to look for wage employment. Migration is the major cause in the inconsistent age gaps in this study as a significant proportion of the respondents were adults (39%) while the most productive age groups between 21-30 (16%) and 31-40 (7%) were slightly lower. Participants had completed primary education (36%) while a small proportion (12%) went as far as tertiary education. The sizes of households varied between 1-4 (29%), 4-8 (53%) and 8+ (18%), however the study showed that the majority of households were within the range of 4-8 people. Meanwhile, a significant of the proportion (34%) relied on self-employment as a source of income. The high unemployment levels experienced in Zimbabwe has forced rural households to engage in self-employment by being vendors, builders, cross border traders etc. In addition, migrant remittances (32%) is also one of the biggest contributors to household income.

4.2. Main Sources of Water

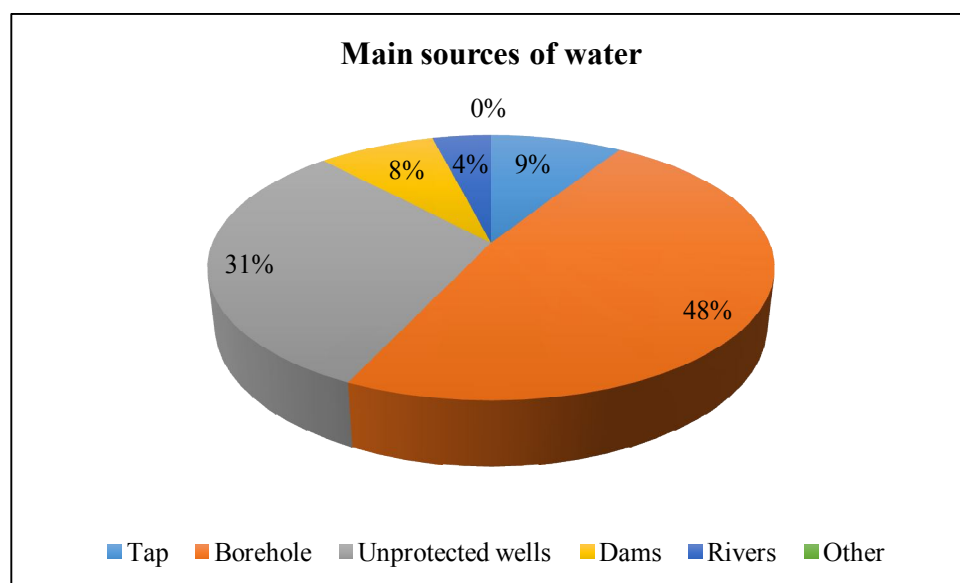


Figure 1

In this survey respondents were asked to indicate their main sources of water supply in their households. 48% of the households relied on borehole while 31% on unprotected wells which were not viable sources for safe and clean water and posed a threat to the health of the communities. The study observed that water borne diseases like cholera and diarrhoea were the major ones that could have an adverse effect on the households. Other sources of water included dams (8%), rivers (9%) and tap water (4%). Major Dam projects to ensure water provisions to the rural communities of Makhulela and Ndolwane Wards by either the Government, Rural District Council or the private sector have not been done. Thus, there is an over reliance on other sources of water such as boreholes and unprotected wells.

4.3. Main Uses of Water

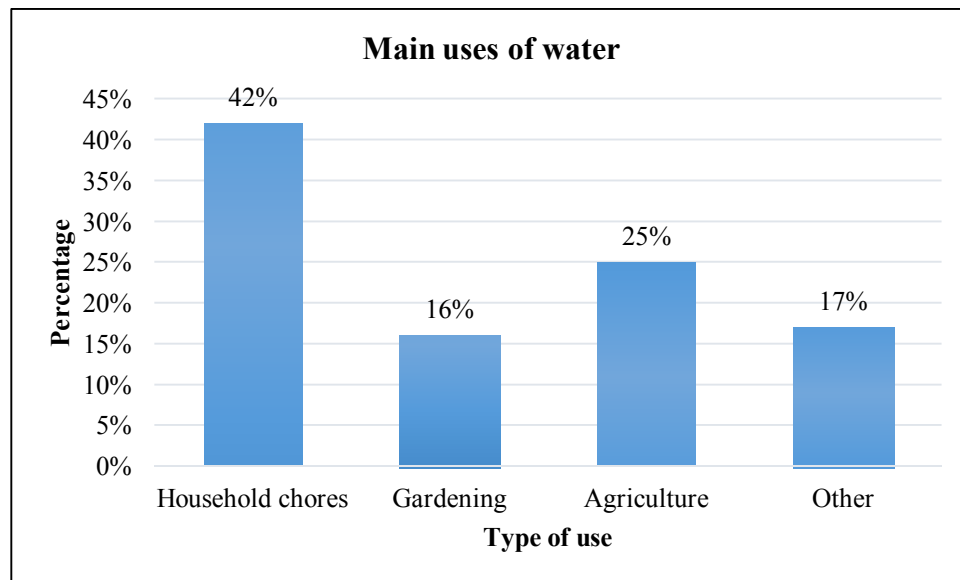


Figure 2

Water is mainly used for household chores (42%) such as cleaning, cooking, washing and drinking meanwhile 25% of the respondents indicated that they use it for agricultural purposes. 16% is used for watering gardens that mainly grow vegetables like tomatoes, onions and cabbages. Other (17%) uses of water mentioned by the respondents included building and providing water to the livestock.

5. Causes of Water Scarcity in Bulilima District

The phenomenon of water scarcity ranks among the top encounters that are affecting socio-economic development in Bulilima District. A wide range of factors were confirmed by the participants in the area under investigation:

5.1. Climate Change

A major cause in the drop of water levels in the major water reservoirs in Bulilima District has been climate which has subsequently led to water distress. This is largely caused by glimpses of desertification due to proximity to Kalahari Desert in Botswana, specifically the Ndolwane and Makhulela Wards (under investigation) as indicated by respondents. One respondent from the Agricultural Extension Service (AGRITEX) indicated that climate change has brought about erratic rainfalls hindering the agricultural patterns, availability of drinking water for human beings, domestic and wild animals from the nearby game park known as Mabhongwane.

Furthermore, the researcher also probed communities on what they perceived as proxy pointers of abnormalities in weather patterns. Reduction in rainfall and upsurge in temperatures appeared to be the major pointers of climate change. One of the participants from the villages in Makhulela Ward outlined the extreme variations in precipitation over past decade as a contribution to changing climate. The respondent noted that over the rainfall patterns changed drastically as they now received little rainfall as compared to the previous years. Communities are experiencing low agricultural yields which are detrimental to their survival. The study noted that a majority of the communities not in Bulilima but across Southern Africa and the entire continent are largely dependent on agriculture through small scale farming for their survival. Climate change has over the years affected weather patterns which have subsequently led to the unavailability of water for farming and other uses like household chores and gardening

5.2. Drought

Drought also emerged as another factor that has culminated in water scarcity in the Bulilima District. Key informants from the Bulilima Rural District Council indicated that both commercial and peasant farmers in Bulilima have experienced meteorological droughts in the past, due to very little rainfall such as in 2002-03 and 2006-07. These droughts have negatively affected the water capacity stored in ground and surface water sources such as aquifers, dams and rivers. Also, the District has been encountering drying

of many drilled boreholes due to decrease of water table, thereby affecting human beings and domestic animals. Furthermore, droughts have also affected environmental sustainability in the District.

Villagers identified the deficiency of grazing land for livestock as another trait that signified drought. Bulilima just like the entirety of Zimbabwe normally experiences major droughts on a ten-year cycle but since the year 2000, this has been a constant phenomenon occurring on an annual basis which rural communities facing drought each year. According to (Practical Action, 2010), the occurrence of droughts in Bulilima has amplified since 2001 and water unavailability within the District is on the rise and few dams that exist are small and silted and hence cannot support irrigation farming.

5.3. Inadequate Supply of Surface Water and Groundwater

Tenacious droughts in the area under investigation have harshly strained surface and groundwater structures as articulated by the participants. The area is characterised by semi-arid climate and landscape as it is situated near the Botswana terrain which largely contains the desert. Communities have been experiencing harsh weather patterns (high temperatures) which have made it difficult to explore the surface water. Brown et al (2012) contends that with climate change evaporation will increase by between 4-25 percent in the river basins, while runoff is also projected to decline by up to 40 percent. As such there is a high possibility that many rural communities will face a significantly large proportion of problems related to water scarcity. This will be exacerbated by the failure of the rural communities to afford the required technology in the district to explore underground water.

5.4. Government's Failure to Provide Adequate Resources to Reduce Water Scarcity

Another major cause of water scarcity in Bulilima is the government's failure to redress the colonial imbalances which resulted in rural areas deliberately being side lined in as far as water development projects are concerned. The centralisation of power since independence has resulted in bias towards improvement of water availability in urban areas and commercial farms at the expense of rural areas. This is seen by the very few dams available to service the ever-increasing population in Bulilima. For instance, the only available major dam that people in Makhulela Ward can access is 20 kilometres away, thus they depend on sparsely government and NGO's drilled boreholes in the ward, as well as unprotected wells dug by people for provision of drinking water for the people as well as domestic animals.

6. Socio-economic Impact of Water Scarcity in Bulilima District

The analysis of the socio-economic impact of water scarcity on the rural communities in Bulilima District is in five parts: (1) drying of water sources; (2) decline in farming productivity; (3) decline in livestock productivity; (4) migration; and (5) sanitation and health.

6.1. Drying of Water Sources

The drying of water sources due to harsh temperatures and erratic rainfall patterns was a major concern for a majority of the villagers in Bulilima District. The villagers condemned the government for failing to drill adequate boreholes in Makhulela and Ndolwane Wards, as well as failing to construct at least a large dam that could be used and shared by the two wards. Some of the respondents indicated that they only shared 4 boreholes in their communities. As such the boreholes were not enough service the demand of the whole village, thereby forcing villagers to resort to unprotected wells.

The decrease of the water table as a result of increase in water scarcity impacts negatively on the efficiency of the boreholes. The borehole system is not able to draw out enough water due to the underground water system running dry. Villagers in Bulilima district are now largely dependent on unprotected wells. The study noted that the borehole system is efficiently used during the rainy season which is between the months of November and April and runs dry after that period.

Another problem that has developed as a result of water scarcity in the area is the emergence of the water class system, whereby villagers with money now hire District Development Fund or private companies to come and drill deeper boreholes in their homesteads, so as to counter the problem or failure by the government and NGO's to provide adequate water in the District. Therefore, those with money are the ones that are now surviving under these harsh conditions, whilst the majority of the poor continue to suffer. This is especially prevalent amongst the elderly who live alone and cannot walk long distances in search of water.

6.2. Decline in Farming Productivity

Farming productivity has declined over the years in Bulilima District. Virtually all the people in these aforementioned villages within the district are subsistence farmers who only grow crops for the benefit of their families. One small scale farmer stated that since her birth she has been cultivating small grain crops such as sorghum and rapoko, due to average rainfall in the area. However, in the past few years, erratic rainfalls have forced most of the people in the village including her, to abandon farming due to losses incurred through little or no harvests from the fields.

Despite the area being located in Region IV in Zimbabwe which is prone to droughts and low rainfall patterns, rural communities have been able to grow drought resistant crops. However, the hopes of farming have been hampered by water scarcity. Communities do not have enough access to water for their farming activities. As such they rely on food aid from international NGOs such as World Food Programme (WFP) so as to address food insecurity. In some cases, some families are faced with hunger and starvation due to poor agricultural performances which forces them to buy food from the local shops. However, the shop owners as reiterated by some of the villagers tend to sell their products at exorbitant prices. This has had a detrimental effect on the livelihoods of a majority of the households who do not have a source of income due to the high unemployment rate and low agricultural yields.

The effects of water scarcity have undermined the communities' potential to access food and income especially considering that they mainly depend on farming for food requirements and the selling of surplus for income. As a result, communities are deeply entrenched in poverty which has a negative impact on the socio-economic development of rural communities within the District.

6.3. Decline in Livestock Productivity

Livestock is viewed and regarded as a source of wealth for a majority of African communities. It is still regarded as treasure in the rural areas and Bulilima District is no exception. However, the increase of water scarcity in Bulilima District has resulted in a decline of livestock production in the area due to the death of domestic animals such as cattle, goats and sheep. Water scarcity has resulted in the unavailability of adequate nutritious grazing areas as well as unavailability of drinking water for animals. Villagers indicated that they are forced to travel long distances in search of both pastures or grazing lands and water for their livestock.

The death of livestock has resulted in some villagers losing their source of income as these animals (cattle, goats and sheep) were sold for economic gains. Money from the sale of livestock was used for the payment of school fees for school going children and in some cases, it was used to purchase some basic commodities like mealie meal, cooking oil, sugar and other household necessities. Other villagers have resorted to sharing their boreholes and unprotected wells with their domestic animals. This is an everyday process for the communities in Makhulela and Ndolwane Wards, which reveals to one how people struggle to survive together with their domestic animals. The rich within these communities have taken their cattle to commercial farms, whereby they pay rent for their upkeep, so as to avoid the calamity that the community is facing of inadequate water supply or limited accessibility to water.

6.4. Migration

The increase of scarcity of water in Bulilima which has resulted in the decline in agricultural productivity has resulted in the migration of the most productive people (mainly the youth) to neighbouring countries namely Botswana and South Africa in search of employment to cater for their families, while those politically connected have migrated to resettlement areas especially A1 farms and land, created by the government after the implementation of Fast Track Land Reform Program in year 2000.

The Zimbabwean economy has been on a downward spiral over the years resulting in an increase in poverty and unemployment levels. Failure of the agricultural sector in Bulilima due to water scarcity and other factors is a major threat to the survival of the villagers in Bulilima District. Coupled by lack of education, most of the villagers are not able to secure formal employment or wage employment. This in turn, has forced them to move to other countries such as Botswana and South Africa to look for employment so as to fend for their families. Migrant remittances contribute the bulk of the income of many rural households in Bulilima District. Relatives send money each month for the upkeep of their families.

Furthermore, migration has also led to disintegration of the family units and loss of the productive age group, creating a shortage of labour which affects crop production, while others in many cases are no longer faithful to their partners or have started new families where they work resulting in spread of HIV/AIDS (MSF Report, 2011). Child headed families are rampant with the migration of the parents to neighbouring countries to look for greener pastures.

Water scarcity has made life unbearable and difficult for most of these community members, to an extent that others are resorting to migrating to other places where there is better water supply and such findings indicate the severity of the water problem in Bulilima which is one of the driest districts in Matabeleland south and the country in general. Statistically when one compares the census carried out in 2002 and the one carried out in 2012, concurs that migration in the district has really occurred as there are 90 757 people in Bulilima according to (Census, 2012) as compared to 104 806 (Census Report, 2002).

6.5. Sanitation and Health

Communities are vulnerable to health and sanitation risks due to the unavailability of clean water. Some of the healthcare facilities such as clinics and hospitals were facing risks of shortage of water supply. This put the health of the patients at risk. There was a high risk of communities being exposed to water borne diseases leading to the spread of diseases such as malaria. Such a scenario is possible when communities at large gather water from holes in dried-out rivers, unprotected wells, and rainwater ponds, where water is susceptible to contamination, which will lead to diseases and ailments being common. One of the respondents from the healthcare sector indicated that diarrhoea and cholera are some of the common diseases the area faces due to the unavailability of freshwater supplies.

7. Conclusion

There are natural and man-made causes of water scarcity in Bulilima that include climate change, evaporation and transpiration, environmental degradation only but to mention a few. Water scarcity was perceived differently by different households. It was defined not only on the basis of the amount of water but also on the impact it had on livelihood assets. This has resulted in negative effects such as unavailability of drinking water for human beings and animals, decline in agricultural production, spread of water borne diseases, migration of the productive population to towns as well as neighbouring countries in search of employment.

In the majority of rural communities' agriculture is the main basis of the economy and in addition it is the largest user of water resources. Underutilisation and lack of adequate water supply can result in the decline of the performance of this sector. In this study communities in Bulilima district are vulnerable to poverty and low agricultural production due to water scarcity. The Government's policies on water in Zimbabwe have over the years failed to address the issue of distribution of water to the disadvantaged communities as evidenced in this study. The private sector and NGOs have also not done enough in their efforts and capacity to

address water scarcity. Water development projects have not been done in the area of Bulilima leaving the communities to rely on boreholes and unprotected wells.

Communities in Bulilima are deeply entrenched in poverty, unemployment, inequality, lack of healthcare facilities, starvation and hunger, poor health and sanitation which has resulted in the migration of the most productive people to neighbouring countries like South Africa and Botswana to look for wage employment. However, the underlying cause of these problems is the unavailability of water. Despite the region being in the driest parts of the country, not much has been done in terms of exploring surface and underground water resources. Financial constraints have been the major cause. This paper notes that there is a lot that needs to be done by the government, NGOs, private sector, Rural District Councils, villagers, communities, households and local leadership in addressing the phenomenon of water scarcity in Bulilima District in Zimbabwe.

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