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# Drought, Resilience and Access to Food in Rural Communities in Eswatini-The Case of Mpolonjeni Constituency

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## ARTICLE INFORMATION

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## ABSTRACT

The recurrence and intensity of drought events has paused a major challenge to rural livelihoods in the Kingdom of Eswatini where majority of the population (over 70%) rely almost exclusively on rain-fed agriculture. The hunger toll has risen to unprecedented levels in response to drought-induced crop failure that continue to compromise access to food for most rural communities in the country. The study explores the drought-food production nexus by examining the effects of the 2015/16 drought on access to food in rural households in Mpolonjeni in the Kingdom of Eswatini and the adaptation strategies employed by rural communities in the constituency during drought periods. The study used quantitative approach to data collection and analysis, where 123 households (out of 2 228) were sampled using the simple random technique. Among the key findings of the study is that drought had major detrimental effects on crops (reduced crop yields, limited food crop variety) and killed a number of livestock in most households in the constituency, thus negatively affecting their economic condition, access to food and food security in general. As a result a substantial number of families are finding it difficult to recover from drought impacts, which also vary between communities and by gender. The study therefore concluded that as climate continues to change, the most vulnerable population in Mpolonjeni Inkhundla will continue to suffer from chronic food shortage, in particular if mitigation measures to enhance rural resilience to drought are not taken.

**Key words:** Food access, Mpolonjeni, drought, resilience, Eswatini, rural

## INTRODUCTION

Drought is a recurrent climatic phenomenon across the world and has become a topical issue of research across the Globe, partly due to its impacts on agrarian economies<sup>1</sup>. It can have considerable economic impacts, particularly on rural farmers and state economy<sup>2</sup>. Millions of people, particularly in Southern Africa, are victims of drought which continue to threaten their livelihoods<sup>3</sup>. The over-reliance on rain-fed agriculture for most countries in sub-Saharan Africa is widely perceived as the major factor that increases the exposure of these countries to drought impacts and related problems. A general consensus exists that a larger percentage of the population in sub-Saharan Africa is already vulnerable to natural hazards such as drought, particularly with the increasing climate variability and change which is expected to intensify in the next decade<sup>4</sup>. In most countries of the Global South, drought ranks as the single most common cause of severe food shortages and the most important natural trigger of

malnutrition and famine<sup>5</sup>. Literature on drought was, therefore, conclusive that drought negatively affects agricultural production, which leads to unstable agricultural incomes against rising food prices that tend to intensify the incidence of poverty and the vulnerability of the poor.

Like in most countries in the Global South, drought in the Kingdom of Eswatini, has been accepted as a major hydrological disaster that threatens the livelihoods of most rural communities<sup>6</sup>. If the current projections are anything to go about, the impacts of drought on agricultural production and food security will intensify in the coming decade if the current trends in weather conditions persist<sup>7</sup>. This, therefore, has a negative implication on the country's ability to achieve set targets, which include the United Nations target of achieving a poverty and hunger free generation by 2030 (SDGs 1 and 2). Climate change, therefore, continues to pose a great challenge to the agricultural sector of most countries in the Global South and to increase the exposure of most subsistence farmers to hunger, particularly because most rural farmers live in poverty and lack adaptive capacity to climate extremes.

The devastating impacts of drought on agriculture and the food system are evident in most countries of the Global South. The reduction in water availability and the degradation of water quality<sup>8</sup> are some obvious and inevitable outcomes from drought events. The most direct impacts of drought captured in several studies is declining crop yield<sup>9</sup> as a result of crop failure, particularly in countries relying almost exclusively on rain-fed agriculture. For instance, Webb and Reardon in their study conducted in Lowland Ethiopia found that drought caused a 90% decline in crop yield in the region, exposing millions of rural people to hunger and food insecurity<sup>10</sup>. The 2015/16 drought condition caused a 67% decline in maize production (staple crop) in Eswatini (maize yield dropped from 101, 000 tonnes in 2014 to 33, 000 tonnes in 2016), leaving about 308, 059 Swazis lacking access to sufficient food<sup>11, 12</sup>. In response, food inflation rose sharply from 4.3 to 19.0% in the same drought period, exposing even more households to food insecurity<sup>13</sup>. The same drought (2015/16) resulted to an estimated crop loss of 75% in Angola, leaving 1.4 million of the total population food insecure<sup>14</sup>. In Somalia, the drought left a trail of destruction on farm lands and left over 6 million Somalians (50% of the total population) in urgent need for food aid, simultaneously increasing the number of malnourished children by 24%<sup>14</sup>.

Due to the same drought condition, Malawi recorded 15% decline in maize production and over 0.86 million hectares of crop land were affected by drought conditions<sup>15</sup>. Mozambique

and Zimbabwe were also victims of the 2015/16 drought condition where significant crop losses were also recorded, with the latter recording 27% decline in maize yield and exposing over 4 million people (42% of the population) to food insecurity<sup>16</sup>. Lesotho was also hit hard by the same drought and over 510,000 people (36% of the population) were affected and left exposed to food insecurity. South Africa was also not an exception where over 49% decrease in maize yield was recorded in the same drought period, which also triggered increase in maize price<sup>17</sup>. As already alluded to, drought-related impact on crop production, therefore, is the loss of crops and the resulting low crop yield which eventually reduce households' access to food in both rural and urban communities<sup>18</sup>. The shifts in farming seasons also disturbs the farming calendar and rises skepticism among farmers, which leads to improper investment decisions<sup>19</sup>. These problems and uncertainties affect crop production and increase the incidence of food insecurity, which subsequently tempers with the social welfare of the people as they may be exposed to poverty and hunger.

To note also is that prolonged drought periods and the resulting poor harvest in rural communities discourage farmers from participating in agriculture<sup>20</sup> and this greatly compromise access to food in the affected rural communities. It is important to note also that drought do not only reduce crop yield but it also reduces the quality of the grain, resulting to an increase in grain price<sup>17, 18</sup>. The constellation of poverty and drought-induced production shortfall heightens the food insecurity levels in rural communities in the Kingdom of Eswatini and in the Global South in general. It is in this regards that scholars have found an association between poverty and food insecurity and extreme weather events such as drought that have come to exacerbate the poverty and food security problem.

Although drought impacts are viewed through the food production lens, it is important to highlight that in some countries and regions, drought-induced crop failures affect local economies and compromise employment opportunities, resulting in financial hardship and forcing farmers to make loans at high interest rates<sup>21</sup>. The situation worsens if drought is prolonged, which results in household food insecurity and an accumulation of loans along with their interest amount. Drought, therefore, undermine crop yields cascading to reduce national harvest, which in turn reduce national food availability and agricultural income derived from sales<sup>22</sup>. Even though the effects of drought can be felt in almost all affected states and regions, such impacts may vary by geographic location and community due to varying levels of vulnerability

and adaptive capacity. It is in the light of this debate that more studies on drought and food issues, particularly in drought prone areas in Eswatini are necessary for a better understanding of the implication of drought on access to food in rural communities in the Kingdom of Eswatini. This will help the country to craft area-specific policies aimed at alleviating poverty and hunger, in the country's quest of achieving a first world status by 2022 (Vison 2022) and achieving the Sustainable Development Goals.

Swazis are largely subsistence farmers, practicing both crop and livestock farming, both of which are sensitive to changing weather (and climatic) conditions. The impacts of drought on livestock farming were equally profound in Eswatini and many other countries in the Global South. For example, among other impacts of drought in West Africa, Web and Reardon reckoned deaths of numerous livestock owing to water shortage and lack of fodder, resulting to milk output declined<sup>10,23</sup>. It is estimated that during the 2015/2016 drought, Somalia lost over 6.4 million of its total livestock herd which was a massive loss of one of the principal resources in the country<sup>24</sup>. Eswatini was not also an exception where livestock death was estimated at 88 000 cattle herds, valued at SZL 440 million (31 million US\$), which represented 14 per-cent of the nation national herd<sup>20</sup>. In most African states, particularly in rural communities in these countries, livestock is a major source of livelihood and income and the death of livestock has serious implications not only on access to food per se, but to household livelihoods in general.

In Eswatini, livestock, particularly cattle, are an equally important source of livelihoods for many rural communities. Cattle play multiple roles both as capital savings and source of income to purchase food<sup>25</sup>. The death of a large number of cattle means a reduction in a source of income for farmers, which may further result to increased poverty rates and rising levels of food insecurity in rural communities. It is important to also note that cattle are also used by most rural communities as draught power in the Kingdom of Eswatini to carry out farming activities such as ploughing, planting, weeding and harvesting. The death of cattle in the country has serious implications on food production, food availability, access and food security in general. Needless to say, cattle are also sold in times of financial needs in most rural households; hence cattle are largely regarded as the 'Swazi Bank'.

Several adaptation strategies are employed by rural (and urban) communities in the region in order to increase their resilience against drought impacts. Among such strategies include crop and animal diversification<sup>8</sup>, which is practiced more as an adaptation strategy than a livelihood

option for rural farmers, although there is still a debate around this<sup>26</sup>, shifting to drought tolerant crop varieties, changing farming patterns<sup>27</sup>, using irrigation (where irrigation water is available), changing quantity of land under cultivation, shifting to climate smart agriculture and water saving (and soil conservation) techniques (e.g. zero tillage)<sup>28</sup>, agricultural intensification<sup>29</sup>, diversifying from on-farm to off-farm activities, among other copying strategies<sup>30</sup>. In other instances, rural farmers abandon farming activities and shift completely to other forms of livelihood which are non-agricultural in nature.

Moreover, some rural farmers often resort to the sale of their livestock (particularly cattle) during drought periods in order to buy food and pay school fees<sup>31</sup>. However, this is a negative strategy since drought often results in poor pastures, thereby killing a number of cattle which further exacerbate food shortages for many households during drought conditions. Most importantly, as already alluded to, cattle are used for draught power; hence as farmers sell them during drought scenarios and drought destroying a number of the cattle, it becomes difficult for most farmers to engage in crop farming even if rain falls in the following season. This condition further increases the vulnerability of many households to hunger and food insecurity.

Rural households (and urban households) engage different strategies in order to increase their access to food in times of food deficits. One such strategy, as captured by several scholars, the likes of Battersby, White and Hamm is through the use of multiple food sources which help to reduce risk and vulnerability to shock<sup>32,33</sup>. At household level where food deficit is dominant, household members begin to reduce the size of meals eaten and others go to the extent to sleep without food and this was found to be common in Zimbabwe and Mozambique<sup>34,35</sup>. Others engage into business of borrowing food or relying on their neighbours for food<sup>36</sup> and this was also found to be true for households in urban Eswatini<sup>37</sup>. In some cases, poor rural and urban households find themselves had to engage in risky survival strategies such as selling sexual favours for food, which increase their susceptibility to HIV and AIDS infection<sup>18,38</sup>.

Drought continues to affect the livelihoods of thousands of Swazis in rural communities where agriculture is the main source of income and food (for over 70% of the population). Due to over reliance on rain fall, most rural farmers have been victims of drought conditions and have incurred losses such as reduction in crop yield, death of livestock and loss of employment (mainly on-farm employment) among other losses. This has eroded the income base of most rural

households and has increased their vulnerability to future drought events. More importantly, the exposure to drought conditions raises the hunger toll in the country due to increased inability to access adequate and affordable food, which further aggravates the levels of food insecurity in the country. As such, levels of food insecurity in Eswatini remain unacceptable high.

Although drought threatens the livelihoods of most rural Swazis, the lack of sufficient data on the impacts of drought on access to food (and food security) in the Kingdom of Eswatini makes the drought-food security nexus to be less understood. This limits the crafting of proper policies that will address food issues in drought prone and vulnerable areas in rural Eswatini. This paper, therefore, aims to fill up this existing knowledge gap by examining the effects of the 2015/16 drought on access to food in rural households in the Kingdom of Eswatini and uses Mpolonjeni constituency as a case study site. The paper also captures the adaptation strategies employed by rural communities in the constituency during drought periods in order to increase their resilience during drought conditions. The main objective was to investigate the effects of the 2015/16 drought on access to food and the coping strategies

employed by rural communities to adapt to drought conditions in Eswatini, using Mpolonjeni constituency as a case study.

## **MATERIALS AND METHODS**

The study was conducted in Mpolonjeni constituency in the Kingdom of Eswatini and used the rural communities of Kashoba, Kandangu and Mpolonjeni as case study sites (Fig. 1). Mpolonjeni was selected on the basis of her high level of exposure and vulnerability to drought conditions due to her geographic location in the Lowveld region of the Kingdom- a drought prone region. A multi-stage sampling procedure was carried out, the first step in the process being the purposive sampling of Mpolonjeni constituency. Stage two was the spatial sampling (using the grid reference system) of the three case study communities (Kashoba, Kandzangu and Mpolonjeni) and the third and last stage was a simple random sampling of households from each selected community.

A total sample size of 123 households (out of 2204) was arrived at using Israel's widely used formula of sample size determination<sup>39</sup>, at 10% precision and 95% confidence level.

Fig. 1: Map of study area (Mpolonjeni and sampled communities)

The sample was selected disproportionately across the three communities, depending on the total number of households per community.

The study employed the quantitative approach to data collection (and analysis) in trying to understand how drought impacts rural communities in Eswatini and to uncover the different strategies they employ to increase their resilience during drought conditions. A semi-structured questionnaire (comprising of mainly closed ended questions) was administered to the household heads in the sampled households. As expected, necessary ethical procedures were adhered to during the data collection process (and writing process) since the study dealt with human subjects. As such, participation in the research was strictly voluntary without any form of coercion.

**Statistical analysis:** Data was analyzed with an aid of computer softwares such as Microsoft Excel (2010 version) and SPSS (version 20). A chi square was used to test for significance and the level of significance was set at 0.1 for all statistical tests conducted.

**RESULTS AND DISCUSSION**

**Demographic characteristics of the respondents:** The demographic profile of the sample indicated that majority (72%) of the respondents were females with fewer male respondents (28%). The study also found that more than half (55%) of the sampled households were headed by married heads, while a substantial number were widowed. Only a few were single and divorcee. In terms of employment status, majority of household heads were unemployed while the rest were either retire, employed in formal work or employed in the informal sector. Very few respondents have tertiary education and the dominant group has primary education or never went to school (Table 1).

The demographic information indicates a typical Eswatini rural society where unemployment is dominant and females remain the most marginalized group in terms of education and employment opportunities, which reflects the level of patriarchy. Women are not only confined in domestic chores

within the household boundaries, but are also the main food producers in such societies, while the males are usually away (mainly for employed opportunities). Women, therefore, are the most vulnerable to drought impacts since they rely on the rain-fed agricultural sector for survival (particularly those that are single) and less so on wage employment and other forms of livelihoods.

The low level of education that characterize the study area and the substantial number of widows in the community are indicative of the level of exposure of these communities to poverty and the implication of access to food. Education, in most cases, is the pre-requisite for better employment opportunities in Eswatini, just as it is in other societies in most countries of the Global South. It is not surprising, therefore that, a larger proportion of the employed in these communities can only secure employment in the informal sector. The higher number of unemployed population in the communities, therefore, means that majority of the households have a low purchasing power and may not be able to purchase sufficient food to supplement their production shortfall. The higher dependence on informal jobs equally exposes these communities to hunger since such jobs are usually characterized with low wages and seasonality; hence these households are likely to be victims of seasonal food insecurity due to instability of food supply.

**Impacts of drought on access to food:** The study found that the effects of the 2015/16 drought on the households in Mpolonjeni Inkhundla were many and varied (Fig. 2). Water shortage was the mostly felt impact of the 2015/16 drought in the constituency and seems to have affected all the residents in the surveyed communities. This impact was followed by the drought-induced increase in food prices (93%), which resulted from the widespread crop failure which increased the demand for food in the area.

When the impacts were ranked in order of magnitude as perceived by the respondents, it was discovered that the death of livestock was perceived to be the most dominant and devastating impact in the study area, followed by crop failure and the resulting food shortage (Fig. 3).

Table 1: Demographic profile of the respondents

| Marital status |     |     | Employment status   |     |     | Education level |     |    |
|----------------|-----|-----|---------------------|-----|-----|-----------------|-----|----|
|                | (f) | (%) |                     | (f) | (%) | (f)             | (%) |    |
| Single         | 9   | 7   | Unemployed          | 79  | 64  | No schooling    | 38  | 31 |
| Widowed        | 44  | 36  | Formally employed   | 12  | 10  | Primary         | 48  | 39 |
| Married        | 68  | 55  | Retired             | 8   | 7   | Secondary       | 35  | 29 |
| Divorcee       | 2   | 2   | informally employed | 24  | 20  | Tertiary        | 2   | 2  |

N = 123



Fig. 2: The effects of the 2015/16 drought on the rural households in Mpolonjeni Inkhundla

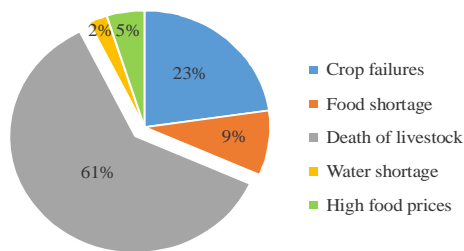


Fig. 3: The effects of the 2015/16 drought ranked as experienced by the households in Mpolonjeni Inkhundla

Again, important to note is that the impacts of drought vary between communities in terms of types and magnitude or proportion of the affected households. For instance, although death of livestock was experienced in all three communities, more livestock deaths (or magnitude of this impact) were felt more in Mpolonjeni than they were in Kashoba and Kandangu, even though these communities were under the same constituency. Likewise, Mpolonjeni was more affected by crop failure (14%) than any other community in the study area. Some drought impacts such as the impact of high food prices were not felt in some communities such as Kandangu and was felt much less also in Kashoba. However, Mpolonjeni tends to be a victim to all the drought impacts felt in the constituency and study area (Fig. 4).

In terms of the observed impacts of drought in the study areas, the results are consistent with several other studies conducted in Malawi<sup>15</sup>, Zimbabwe<sup>16</sup>, South Africa<sup>17</sup>, Somalia<sup>24</sup> and other parts of Eswatini<sup>20</sup> where these impacts were found to characterize households in drought prone areas and crop failure and death of livestock were among the dominant impacts. In all these studies, these drought impacts were found to compromise access to food for a large number of the rural population in these countries and to increase the

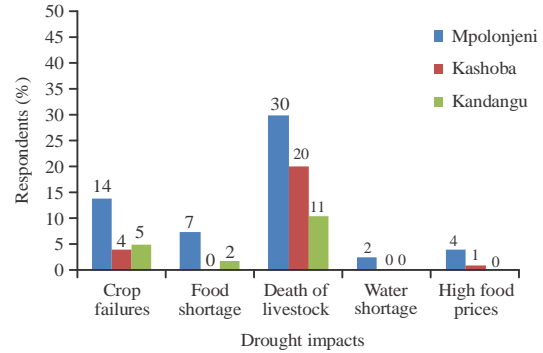


Fig. 4: Drought impacts as experienced by the households in the three selected communities in Mpolonjeni constituency

proportion of the food insecure households<sup>18</sup>. High level of poverty and unemployment, as the case is also in the surveyed communities, compound the problem of access to food and increase the level of exposure to food insecurity<sup>22</sup>.

It is important to note that the observed drought impacts in the study area have a great potential of compromising most households' access to food in the communities and heighten the level of food insecurity. As already alluded to, livestock (cattle) play a major role in the livelihoods and economic status of most rural households in the Kingdom of Eswatini and the death of livestock rob most households' source of meat, milk, draught power and, most importantly, source of income to purchase food in times of food crisis like periods of droughts.

The variation of impacts of the 2015/16 drought within and between communities raises the need for more studies that should be conducted at community level to capture the area specific impacts that drought exert on rural communities in Eswatini and in other African countries, rather than the generalized impacts usually captured by Nation vulnerability assessments. The results have shown that communities may be under the same constituency but exhibit different exposure to drought impacts. This is more so because the poverty levels and socio-economic characteristics of communities, although in the same geographic area, may be different.

Although when tested for significance (using a chi square) at 0.1 significance level, the difference shows to be insignificant since the critical value of 13.36 at 8 degree of freedom is greater than the calculated chi square value of 11.802, the results trigger another way of thinking and way in which effects of drought can be viewed. More importantly, the results raise a need for further research on the socio-economic characteristics of the population in the study areas and the

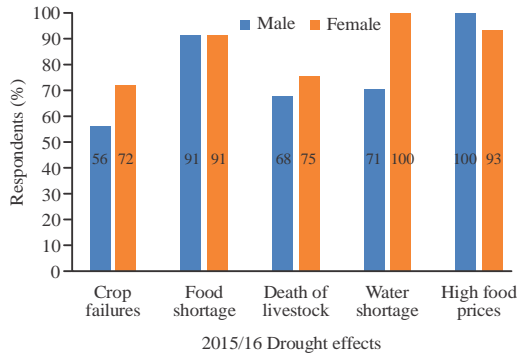


Fig. 5: Effects of the 2015/2016 drought by gender

factors that account for the different vulnerabilities of these communities to drought impacts. For proper intervention, it is crucial to understand why Mpolonjeni tends to be more vulnerable to drought impacts.

**Effects of drought by gender:** The drought effects were then cross tabulated by gender to determine if the impacts of the 2015/16 drought vary by gender. When comparing the drought effects by gender of households' heads, the results showed that drought effects vary by gender. Female headed households suffered more severe impacts of drought compared to male headed ones and this is true with crop failure (72% females vs 56% males) and death of livestock (75% females vs 68% males) among other impacts (Fig. 5). Again this points to the level of exposure and vulnerability of women (compared to their male counterparts) to impacts of drought in the study areas and in Eswatini in general. Since women are the main food producers in the country, their high exposure and vulnerability to crop failure has an implication on access to food at household level and to household food insecurity in general. Women were also found to be equally vulnerable to the death of livestock, which means that they also lack what they can use as leverage in times of crop failure since they are usually confined at home and are largely unemployed. Interventions that should target women and aim at increasing women resilience against natural disasters such as drought are mandatory if the country is to win its battle against hunger and food shortage. This calls for some changes in some cultural traditions that perpetuate the marginalization of women. This includes unequal access to production inputs between men and women (with men always on advantageous side), production resources such as land and ownership of assets, to mention but a few.

Analyses of the drought impacts by gender across the selected communities indicate that the level of exposure of males and

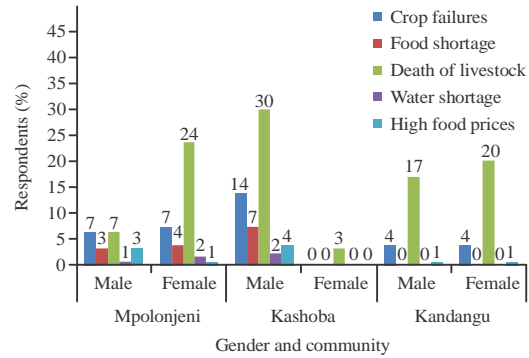


Fig. 6: Effects of the 2015/16 by gender in the selected communities

females to drought impacts in the selected communities also vary. For instance, it was found that males in Kashoba community are more exposed to drought impacts compared to their female counterparts and they were exposed to death of livestock (30% males vs 3% females), crop failure (14% males vs 0% females), food shortage (7% males vs 0% females), among other impacts (Fig. 6). On the other hand, at Mpolonjeni, females display high exposure to death of livestock compared to males (24% females vs 7% males) and food shortage (4% females vs 3% males). In Kandangu, the picture is quite different where the respondents were not exposed to food shortage and water shortage, but more females than males were exposed to death of livestock (20% females vs 17% males) (Fig. 6).

The result, as already noted, indicate that within the same community, the level of exposure between male-headed and female-headed households tend to differ as both magnitude of exposure and type of impact to which the affected households were exposed to differ. Although females tend to be more exposed to drought impacts compared to males in general, it was worth to note that this tend to vary by community. In some cases, males experience high exposure to drought impacts as the case may be in Kashoba. There is, therefore, a need to disaggregate drought impacts by gender in affected communities in Eswatini for proper conclusions and recommendations that will inform policy makers in their quest to address the impacts of extreme weather events such as drought in drought prone areas.

The study also reveals that drought affected household income in the selected communities by affecting their main sources. An analysis of their past and present sources of income indicates a change in income sources and these sources of income, for most households, are linked to their



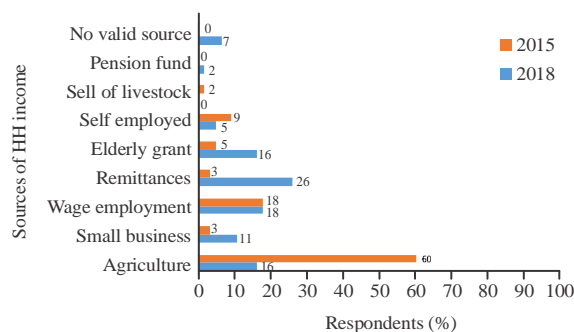


Fig. 7: Past and present sources of household income

past and present livelihood options. This was revealed when the researcher asked the respondents' main sources of livelihood and income in 2015 and in 2018, whereby a majority of the respondents indicated that in the past (2015 and before), agriculture was the major source of income compared to currently (2018). A substantial number of respondents also indicated that currently (2018), remittances constitutes their main source of income than what it used to be in the year 2015 (Fig. 7). In addition to these, elderly grants are now regarded as another major contributor to the survival of the Mpolonjeni residents than what it used to be in the year 2015 (Fig. 7).

Since these communities are relatively impoverished and predominantly unemployed, agriculture remains their main source of income, therefore, agricultural failure pause a great challenge to their income, ultimately compromising their access to food, particularly during drought conditions. The replacement of agriculture by remittances as major source of income is indicative of the helplessness and vulnerability of these communities to drought impacts, just as the reliance on elderly grants is in these selected communities. Both remittances and elder grants in Eswatini are just enough to purchase food for survival and households who rely on these sources are highly exposed to food insecurity because both remittances and elderly grants cannot guarantee stability in food supply and access to adequate food<sup>18</sup>.

The effects of drought on crop production in the study area were also captured, particularly because crop production in rural areas in the Kingdom is key to ensure food availability and hence access to food. The study found a devastating decline in the levels of crop production by the rural people of Mpolonjeni Inkhundla, which also influences (negatively) access to food and ultimately food security in the area. When comparing the present (2018) and past (2015) crop production in terms of output from the four main crops (maize, beans, sorghum and cotton) grown in Eswatini, the study gathered

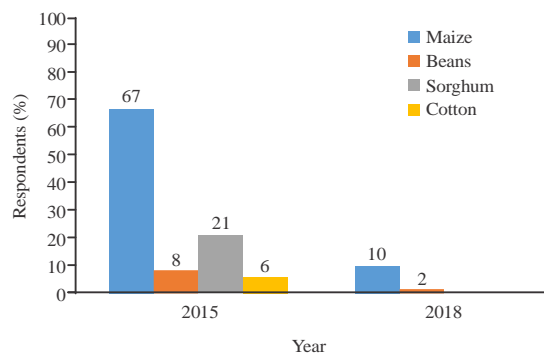


Fig. 8: Crops grown and percentage of farmers growing these crops in 2015 and 2018

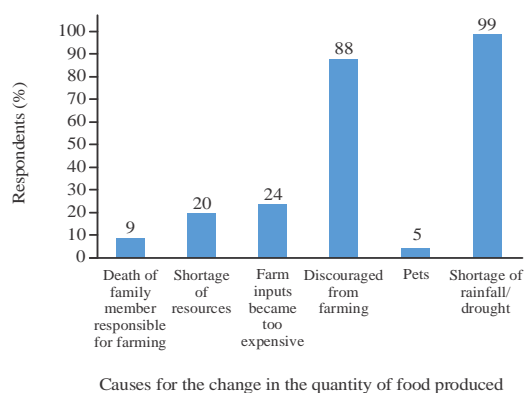


Fig. 9: Causes for the change in the quantity and crops produced in Mpolonjeni Inkhundla

that crop output has declined drastically and this is due to the decline in the proportion of farmers cultivating these crops (Fig. 8).

Several reasons have been thus given by the respondents for these drastic changes and fall of crop production in the constituency (Inkhundla). Majority cited rainfall shortage as a major reason or factor contributing to the decline and changes in the proportion of farmers who engage in crop farming in the constituency. A larger proportion said they were discouraged from farming by the increased frequency of drought scenarios. Fewer respondents cited other reasons such as increased price of farm inputs and shortage of resources, among other reasons (Fig. 9).

These reasons also vary by community (Fig. 10) however, drought or shortage of rainfall is cited as the major cause of the changes in quantity of crop produced (and type of crop grown) in all communities cited by 28% in Mpolonjeni, 27% in Kashoba and 12% in Kandangu. Worth noting also is that Mpolonjeni tends to be the most vulnerable community in the constituency and tends to be exposed to other several reasons

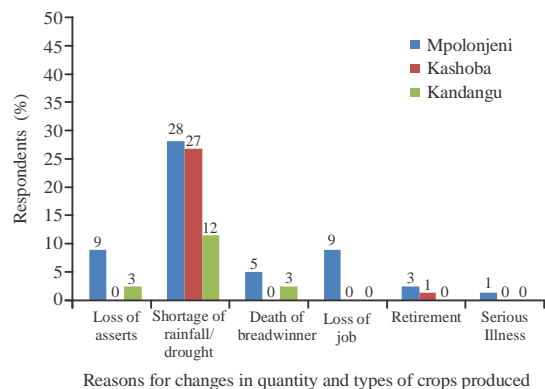


Fig. 10: Reasons for the change in the quantity and crops produced by community in Mpolonjeni Inkhundla

(besides drought) that influence the quantity and types of crops produced in the areas and these include loss of asserts and job, death related issues and retirement among others (Fig. 10).

When subjecting the results to a statistical test (chi square) at 0.1 significant level, the results reveal that the difference between the communities is significant since the calculated chi square value of 17.790 is above the critical value of 15.99 at 10 degrees of freedom. This means that it is very important to consider variations between communities for any intervention aimed at reducing vulnerability of rural households to natural disasters such as drought. There are variations within communities that increase the level of exposure for some communities and without careful identification of these variations, generalized interventions may not work well for other communities.

The researcher also wanted to know factors that the respondents regard to have compromised their access to food at household level in 2018 and these factors were compared to those of 2015 to establish if there was a difference in such factors. Several factors were identified by this research to have been key in compromising access to food for many residents of Mpolonjeni Inkhundla in 2015 and 2018 and these include rainfall shortages/drought, high food prices, unemployment and increasing number of orphaned and vulnerable children (Fig. 11).

Crop failure and the decline in crop yield, particularly maize yield (the staple crop) has been remarkable in the study area and the impact of this decline on access to food in the rural areas cannot be underestimated since crop production remains the main source of food in rural Eswatini. However, due to the drought conditions, which were widespread in the country, decrease in maize production was inevitable most rural communities who rely on rain-fed agriculture. These

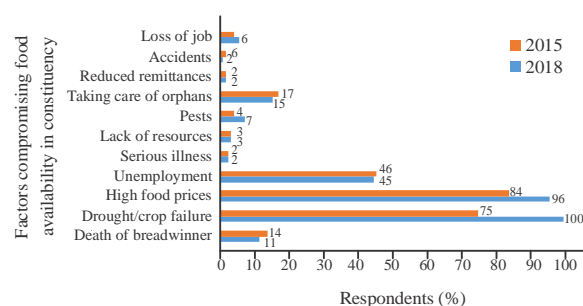


Fig. 11: Factors that compromise the Households' access to adequate Food in Mpolonjeni

findings are consistent with several other studies conducted in Ethiopia<sup>10</sup>, Angola<sup>14</sup>, Somalia<sup>14</sup>, Zimbabwe<sup>16</sup> and South Africa<sup>17</sup> where a decline in maize yield was also recorded in the same drought period and triggered an increase in maize price. The reasons for the decline in the crop yield or changes in the volume of crop produce are very revealing of the negative consequences of the 2015/16 drought condition (Fig. 10). The shortage of water (drought) cited as a major cause of this change as well as the discouragement in engaging in agricultural activities are both evidence of the multifarious ways by which drought impact on crop production and ultimately access to food in rural communities of Eswatini. Moreover, the variation in the reasons accounting for this change between the communities also suggest that different communities have different challenges that contribute to food shortage and compromised access to such food. Universal solutions, even those that may be tailored to target constituencies may not be relevant for other communities within the same constituency; hence more studies that may target communities are still necessary.

While other factors such as high cost of farm input, shortage of resources and deaths have also been cited as other contributing factors, their contribution to the food production problem are very insignificant. It is also important to note that drought and food price hike were actually cited by respondents to have compromised their access to food in the studied communities (Fig. 11). This is consistent with the findings of the National Disaster Management Agency in the Kingdom of Eswatini as well as the Swaziland Vulnerability Assessment Committee in their nationwide survey of impacts of El Nino drought Events<sup>13,40</sup>.

**Households' coping mechanisms:** Mpolonjeni households apply a variety of strategies to cope with the effects of drought on access to food and drought on the agricultural sector in general. Due to extreme water shortages, many

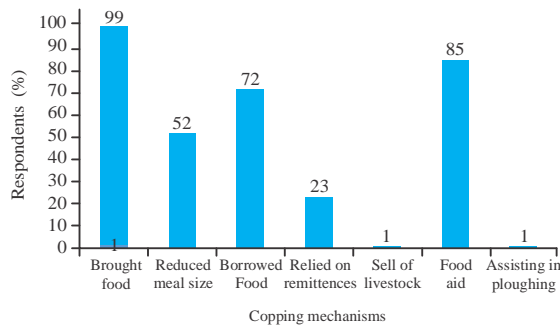


Fig. 12: Copping strategies to food shortage in Mpolonjeni Inkhundla

households in the study area abandoned farming and resorted to other forms of livelihoods outside the agricultural sector. One such livelihood strategy as the results indicate (Fig. 12) was the purchase of food where majority was forced to do so, at least during the drought period. A larger proportion of households had to rely on food aid for food, while others had to rely on social networks such as borrowing food and relying on relatives for remittances in order to have something to eat. Other helpless household members remained with no other option except to resort to extreme coping strategies such as reducing the amount and size of food they ate each day (Fig. 12).

Reducing land under cultivation and the complete abandoning of agriculture in Eswatini tends to be a common and worrying copying mechanism in rural Eswatini particularly in drought prone areas where a large proportion of farm lands are now lying fallow (uncultivated) due to drought-related crop failure and fear of loss by most farmers who are reluctant to invest on inputs due to fear of crop failure and risk emanating from weather uncertainties<sup>19</sup>. This has led to the decline in the area under cultivation in rural Eswatini. The ninety nine percent people who now rely on purchased food in the study site and drought prone area of Mpolonjeni was worrying and is a matter of concern, more so when it comes to food availability and national adequacy of the available food at household level in these impoverished rural communities.

The high reliance on food aid is also a cause of concern, particularly in Eswatini where food aid distribution is highly selective (usually target the most affected communities and poor households) in addition to providing just enough food for survival in the height of the natural disaster and does not take into account issues of stability of supply. The reliance on social networks such as borrowing food and relying on remittance food is also a common feature of Eswatini<sup>37,41</sup> and

one that compromise households' access to food, particularly during drought periods where food surplus is usually not common.

### CONCLUSION

Drought affects rural livelihoods in Eswatini and account for the widespread crop failure and livestock deaths in the Kingdom. The impacts of drought in most rural communities are not hard to find and the influence of drought on access to food in rural Eswatini is evident. These impacts range from crop production shortfall to food price increase and extend their influence to households' income, which are also susceptible to drought condition, particularly for those employed on-farm. The increase in food prices erode the resource base for households in drought prone areas and cripple their purchasing power, ultimately exposing them to food shortages and food insecurity. Although the impacts of drought may be general at constituency level, they differ by community, which reflects different level of exposure and vulnerability of different communities to drought impacts. This, inevitable, begs for different interventions if drought impacts are to be minimized or successfully dealt with at community level and at national level.

Exposure to drought impacts also varies by gender with women being highly exposed to drought impacts, particularly crop failure and death of livestock. However, this also varies by community. This raises the need to disaggregate drought impacts by gender for proper interventions aimed at reducing vulnerability of rural households to drought effects. The study also found that rural communities employ several strategies to cope with drought impacts and increase their resilience against drought conditions and these include abandonment of farming for other more secure forms of livelihoods, reliance on food aid and other social networks (borrowing food from neighbours, surviving on remittances, seeking financial assistance to purchase food). Some households go to the extent of skipping meals (eat fewer meals per day than they needed), reducing the size or quantity of food consumed while others eat less preferred food due to food shortage. This increase their vulnerability to hunger and food insecurity and ultimately jeopardizes the national initiative of eradicating poverty and hunger by 2022. It also makes attaining the SDGs (goal 1 and 2) even more challenging.

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