



Volume 7	Issue 1	April (2026)	DOI: 10.47540/ijsei.v7i1.2089	Page: 100 – 106
----------	---------	--------------	-------------------------------	-----------------

The effects of climate change on rural-urban migration in the Moletjie community, Limpopo Province, South Africa

Trevor Rehaugetswe Modise

Department of Sociology and Anthropology, University of Limpopo, South Africa

Corresponding Author: Trevor Rehaugetswe Modise; Email: trevor.modise@ul.ac.za

ARTICLE INFO

Keywords: Climate Change; Livelihood; Rainfall Scarcity; Rural-Urban Migration.

Received : 19 June 2025

Revised : 24 January 2026

Accepted : 28 April 2026

ABSTRACT

Rural community members' livelihoods are compromised by the fluctuating climatic hazards that result in severe conditions. This study aimed to explore the impact of climate change in rural communities, focusing on how rural-urban migration, as one of the indicators of climate change, affects the livelihood of community members. The study was qualitative; data were collected until saturation. In-depth interviews with an equal sample of 75 men and 75 women, making a total of 150 participants, gathered data on the effects of climate change in rural communities, focusing on how rural-urban migration as an element of climate change affects the livelihood of community members. Using content thematic analysis, the study analyzed the effects of climate change in local communities converging on how rural-urban migration affects community members' well-being. The study reveals that climate change is negatively impacting community members' way of living, as rural-urban migration is noted as a daunting issue in the community. The study further reveals that climate change results in rural-urban migration as community members are exposed to poverty, hunger, and malnutrition. The findings attest that ghost houses, family disconnection, and dislocation further predispose women and children to danger and hard labour. The study proposes the incorporation of traditional and government officials for employment opportunities and farming resources in rural areas. The study recommends government intervention by means of rural development. The study concludes that climate change is a great contributing factor to the livelihood of local communities, as community members are prone to hunger, unemployment, and poverty.

INTRODUCTION

The focus of the study was on how climate change affects the local community members' livelihood patterns. Primarily, the study focused on the effects of rural-urban migration as one of the influential determinants resulting from climate change. Climate change is a malevolent and daunting issue experienced throughout the entire globe (International Panel of Climate Change [IPCC], 2007 & Leal, 2015). The Environmental Protection Agency [EPA] (2010) describes climate change as any variation in events of temperature and precipitation. It is also understood as a constant and complex pattern of differences in the Earth's atmosphere (Keohane & Victor, 2010). Kubayi (2022), Zipper et al. (2019), and Smit & Wandel (2005) pronounce that climate change is a social

determinant with intricate impacts, of which its effects can be observed as a condition with various indicators such as drought, floods, and unpredictable rainfall patterns.

Mugambiwa (2018), Modise, Rankoana, and Malatji (2022) corroborate that climate change disrupts societies through its manifestations, as it affects the environment, societal structure, and economic status of the community, which therefore depressingly affects overall development. Hence, it is labelled as a global and public challenge that results in societal issues such as poverty, hunger, and migration, especially in rural communities. The South African local and national economy is negatively impacted by climate change as it pressures the nation's agricultural economic system, including increased unemployment, negative

impacts on upstream economic activities, and production loss (Baudoïn et al. 2017).

As one of the observable indicators of climate change, migration is characterized by internal and external mobility (Kok, 1999). Migration is defined as the crossing of spatial boundaries by people involved in a change of residence (Skeldon, 1990). It is further described as a permanent or semi-permanent change of residence, where there are few or no restrictions on the distance of residence (Kok, 1999). Thus, Bakewell (2014) asserts that the definition of migration is based on spatial boundaries and change of residence (2014). However, Dercon, Krishnan, and Krutikova (2013) state that migration is observable in rural and urban areas, especially in developing countries where social issues such as unemployment are at a high rate.

Scholars such as Henderson, Storeygard, and Deichmann (2017) contextualise migration and climate change through a decline in moisture from a rural to an urban scale. Literature provided sufficient indication on climate change that adverse changes in climate impulses people out of rural areas into urban areas that has a manufacturing base for employment (Selod & Shilpi, 2021). Joseph and Wodon (2013) concur that climatic variability plays a vital role in elucidating the influx of migration, especially from rural areas. However, Kubik and Maurel (2016) argue that migration from rural areas is conditioned by the financial status of individuals, as financially stable families are not likely to migrate.

Rainfall scarcity, drought, and excessive heat are manifestations of climate change that influence migration, which is responsible for economic, social, and political issues (Barrios, Bertinelli & Strobl, 2006). Toulmin (2020) corroborates that such influences put strain on women and children, as they are forced to work outside farms to help provide for the family. Thus, Penning-Rowsell, Sultana, and Thompson (2013) allude that the change in climate creates disparities and leads to damage in rural community members' livelihoods.

Rural-urban migration has compromised the social, economic, political, and religious development in developing countries. Due to rural-urban migration, local communities are struggling to exercise their political, religious, social, and economic ideology as the impacts of poverty and

hunger force community members to migrate to urban areas where there are sufficient resources to sustain their welfare (Suyambu & Tsering, 2012; Barrios, Bertinelli, & Strobl, 2006). Whereas Dercon, Krishnan, and Krutikova (2013) advocate that rural-urban migration is influenced by expected income and well-being gains. Dustmann and Görlach (2016) further support that high income, quality of education, and the availability of health services are the factors that underpin rural-urban migration due to the desirability of urban life over rural life.

Social and established facets regarding land inheritance in rural areas influence the progression of rural-urban relocation (Fan, 2003). In some instances, patriarchy forces the son chosen as heir to sustain and maintain the family wealth (Morrison, 1993). This, however, decreases the influx of rural-urban migration (Hayashi & Prescott, 2008). Dustmann and Görlach (2016) concur that the landscape and binding of property rights in rural areas affect relocation decisions. Property rights on farming land positively affect rural-urban migration as it makes land a more liquid asset and in turn, eases financial constraints (De Weerd & Dercon, 2014).

Formal property rights provide occupancy security to possessors who may migrate without the risk of losing their property and reinforce the option migrants may have to keep a source of income from renting out their plot, or to return to their origin area in case of an unsuccessful migration (Selod & Shilpi, 2021). However, repercussions may be observable (Malik, 2015; Brauw, Mueller & Lee, 2013).

Rural-urban migration in communities is mainly influenced by poverty and hunger as one of the social issues brought by climate change (Yohe & Tol, 2002; Kruger & Shongwe, 2004). Kyei (2011) stresses that the impacts of climate change in rural areas are evident as community members feel unsafe and threatened by loss of forest, wildfires, and human life (Osbaïr, Twyman, Adger & Thomas, 2010). Climate change, as a universal challenge, is also observable within the province of Limpopo.

This is supported by the Limpopo Department of Agriculture (LDA) (2010) that climate change is a severe challenge in the province, as the province is a semi-arid area with enormously high

temperatures. The impacts of climate change are evident, resulting in loss of livestock and ploughing fields, hunger, poverty, malnutrition, and urban migration (Letsatsi-Duba, 2009). As a result, there is a need to explore the impacts of climate change on the livelihoods of rural community members. The fact that local communities migrate to urban areas to avoid the adverse impacts of climate change shows the significance of exploring the major contributions towards rural-urban migration.

The devotion was to describe the impacts of rural-urban migration in Moletjie, focusing on how household security, family connection, and food insecurity are impacted. The discoveries could be used to reinforce climate change adaptation policies by embracing the element of communal involvement, which will administer the use of local mechanisms to survive through the effects. Thus, public engagement is crucial, as it informs policy-making and climate change adaptation strategies.

MATERIALS AND METHODS

A qualitative study was conducted to examine the effects of rural-urban migration in Moletjie, focusing on how household security, family connection, and food insecurity are impacted. An open-ended questionnaire was used to collect data. The data collection tool comprised biographical data of the partakers, shadowed by questions on how rural-urban migration affects community members in Moletjie.

Community members were selected by means of purposive sampling to make up a sample of 40 Participants. A larger sample was used to acquire a range of responses about the effects of rural-urban migration in the community. The sample was made up of equal numbers of males (20) and females (20). The main criteria used were the selection of community members who are directly impacted by rural-urban migration as an indicator influenced by climate change. The participants' ages ranged from 20 to 85 years.

All the participants were Sepedi speakers; the interviews were conducted in Sepedi and decoded into English. The questionnaire was directed by the researcher. The purpose and goal of the study were clarified to the participants. Interviews were conducted in the households of the participants. An interview schedule was developed to enable a quality data collection process. The interviews were

conducted face-to-face, and each was scheduled for 1½ hours. Data was captured through note-taking and audiotaping of the interviews. The open-ended questionnaire was used to document the effects of rural-urban migration in the community.

The responses were recorded for each question. Data was transcribed to ease qualitative analysis and collected until saturation. Thematic content analysis (TCA) was used to analyze the data. TCA is a method used to identify, analyse, and report patterns in data and to break collected data into themes and sub-themes (Braun & Clarke, 2006). The method was used to identify, analyze, and report themes and sub-themes within data.

RESULTS AND DISCUSSION

Respondents attested that climate change is a challenging dilemma in the community, as it has negatively impacted their general living conditions. The study observation is that erratic rainfall and drought, as manifestations of climate change, are the main drivers of rural-urban migration in the community. The respondents further highlighted that the effects of outmigration are dominant in the community, as the community itself has few aged men. Most of the men found in the community are elderly and young children (Modise et al., 2022).

Community members further articulated that due to hunger and poverty that is caused by rainfall scarcity, young children are forced to migrate with the desire of finding employment to better their families' living conditions. However, rural-urban migration results in strain on women and young children, food insecurity, unemployment, and family disconnection. This is corroborated by Blumenstock, Chi & Tan (2019) that migration compromises the safety of children and women, which in turn results in a lack of production and development, especially in rural communities where resources are limited and scarce.

Community Members were Asked about the Impacts Of Climate Change on their Livelihood

Respondent 19 expressed that: Our main problem in the community is climate change. Climate change led us to hardships as we struggle to plant, harvest, and sell crops to sustain our livelihood. We experience high and dry temperatures with dust. I struggle in coping with the mental challenge that is caused by the failing plans

created to provide food of nutritional value for my family”.

Community members are aware that climate change has been negatively impacting them for decades, as its impacts are observable through erratic rainfall that results in drought. Climate change and its manifestations have affected the stability of families and the psychological well-being of community members. This corroborates Yohe and Tol's (2002) findings on the dysfunctionality of families as a result of climatic shocks. Rural-urban migration has a great impact on rural expansion, food and household insecurity, poverty, and the overall development of the community. Hayashi and Prescott (2008); Suyambu and Tsering (2012) support the finding with the sentiments that the effects of out-migration are felt in migrants' place of origin, where the actual hunger, poverty, and declined food production are experienced.

Employment Opportunities

Respondent 13 expressed that: “My son has long gone to the cities for employment opportunities, which was quite a challenge for him and the family as he searched for employment for almost six months. Through God's grace, he eventually got something”.

Respondent 60 supported that: “I once went to the cities seeking employment, which I never found. Since I had no permanent place to stay, I had to return home to avoid troubling people. However, I am still planning to try my luck again, as you can see, the rain is unpredictable, and the cost of living is too high”.

Community members indicated that there is a struggle in sustaining their well-being, as employment in urban areas is not always available. They further highlighted that, as a result of the high cost of living and hunger, there is a serious need to seek employment, as rainfall is scarce. This is supported by Suyambu and Tsering (2012), that community members from rural areas are driven by the desire to live a better life through stable income. The study observed that in rural areas, there is a serious concern about unemployment that contributes as a push factor to urban migration.

This is supported by Dustmann and Görlach (2016) that high income underpins rural-urban immigration due to the desirability of better living conditions. However, the study further noted that

rural-urban migration does not necessarily provide full employment opportunities. Malik (2015) indicated that there are repercussions of employment scarcity in the urban area.

Family Disconnection

Respondent 3 indicated that: “I have a farm where I plant crops, but struggle to make a living with my harvest. Employment opportunities are limited for our children; as much as we suffer, they try to sustain us by working in urban areas where we see them occasionally. It is depressing not knowing how your loved one is or how they are feeling, especially during this COVID era. This rural-urban migration has negatively influenced our relationship with family members.”

Community members expressed that rural-urban migration has a great impact on their families, as it results in the disconnection of family members. The observation is that rural-urban migration results in a lack of safety in the community, loss of land and livestock, and more pressure on women and children. This is supported by literature that outmigration is negatively impacting the psychological well-being of communities as communication networks are broken, and results to family dislocation, where family members are no longer able to communicate with each other (Kyei, 2011). Furthermore, dislocation of family members results in mental stress, low self-esteem, and frequent emotional instability.

Household Security

Respondent 18 indicated that: “We are a village with few male figures, which exposes us to theft, rape, hunger, and loss of arable land. Our children, once they finish school, also opt for urban areas for employment opportunities, leaving us fragile and alone. Most of the women in the village have grown. We cannot fetch water for ourselves, we are exposed to theft as we have no one to protect our households.”

Respondent 24 articulated that: “Due to family survival, both my husband and son have left for urban areas for employment opportunities. However, this is negatively impacting me and my daughter as we are own security system in the house whilst my husband and son are at work.”

Respondent 5 supported that: “The little available men in the community are only those who spend the day herding livestock and some working at the ploughing fields for their families. These

young boys remaining in the community are always suspicious, as you never know if they are planning to attack you or not. I am mostly relaxed when my nephews are back from school to keep me company.”

Rural-urban migration is a serious challenge in rural communities, as remaining community members live with fear, as the community is not as populated as before. Most households are left with female figures, leading to them being defenseless and exposed. This becomes a societal problem as the community is mainly populated by women, of whom men have migrated to urban areas for employment opportunities. This is supported by Kruger and Shongwe (2004) that rural communities, especially women, are mostly exposed to theft, rape, and abuse as a result of little or limited protection from their family's male figures. This results in an unsafe community where the safety of women and children is compromised.

Household Food Insecurity

Respondent 9 expressed that: We are forced to herd livestock in their absence, especially if one has no male child.” “Rainfall scarcity has been giving us hardships; we no longer have the opportunity to bond with our loved ones as they are forced to travel to urban areas for employment opportunities to provide for their families”.

Respondent 15 concurs that: “Climate change is like a known disease that affects every individual, we all know it is evident, but its harsh impacts come are observable on food production.” Respondent 88 articulated that: “We have no farm, so we are forced to rely on employment. 40 years back things were much better as we would go look for domestic jobs to sustain our lives, but today most families do things on their own. For someone who doesn't have a husband its' straining, we are being tormented by hunger and poverty.”

Community members indicated that as a result of rainfall scarcity that results in rural-urban migration, they suffer extensively as crops and livestock are not well monitored because male figures have travelled to various places with the intention of improving their families' economic status. This is similar to Kramulla and Shair's (2011) findings that in Pakistan, male figures are mostly responsible for providing and generating income for their family members. Community members are struggling because of the impacts of

rural-urban migration, as women are expected to overwork themselves from household chores to field chores. This is supported by Baudoin, Vogel, Nortje & Naik's (2017) observation that women are forced to sustain the livelihood of their families in the absence of their husbands and children.

CONCLUSION

This study attests that climate change has led to rural-urban migration as an indicator that negatively impacts community members. The study highlighted that climate change manifestations, such as drought and erratic rainfall patterns, are contributing factors to rural-urban migration. As a result of climate change and its indicators, there has been a notable decline in food production as rural communities relied on rain-fed food production. Drought and scarcity of rainfall resulted in paid labour in the urban areas. The study revealed that rural-urban migration is an innovative strategy in coping with the impacts of climate change.

The study further revealed that through rural-urban migration, community members are destructively impacted, as it resulted in the disconnections of families and has compromised the safety and security of women and children within the community. Community networks were broken, which resulted in a decrease in social interaction, low self-esteem, and social isolation. The study recommends that the government and traditional authorities should integrate strategies that can provide local communities residing in their place of origin with proper and sustainable jobs. Overall, the study attests that climate change results in rural-urban migration and further increases the likelihood of malnutrition, hunger, poverty, and theft that negatively impact Moletjie community members.

REFERENCES

- Bakewell, O. (2014). Relaunching migration systems. *Migration Studies*, 2(3), 300-318.
- Barrios, S., Bertinelli, L., & Strobl, E. (2006). Climatic change and rural-urban migration: the case of sub-Saharan Africa. *Journal of Urban Economy* 60 (3), 357–371.
- Baudoin, M-A, C. Vogel, K. Nortje & M. Naik. (2017). Living with drought in South Africa: lessons learnt from the recent El Niño

- drought period. *International Journal of Disaster Risk Reduction*, 23: 128-137.
- Blumenstock, J.E., Chi, G., & Tan, X. (2019). Migration and the Value of Social Networks. CEPR Discussion Paper 13611.
- Braun, V. & Clarke, V. (2006). Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, 3, 77-101.
- Brau, A., Mueller, V. & Lee, H. (2013). The Role of Rural–Urban Migration in the Structural Transformation of Sub-Saharan Africa, *World Development*, in press.
- D.S.G. (2010), “*Evaluating successful Livelihood Adaptation to Climate Variability and Change in Southern Africa*”, *Ecology and Society*, 15 (2) 1-20.
- Dustmann, C., & Görlach, J. S. (2016). The Economics of Temporary Migrations. *Journal of Economic Literature*, 54(1), 98-136.
- Environmental Protection Agency of the US, (EPA) (2010). *Climate Change Indicators in the United States*. Available From: <http://www.epa.gov/climatechange/indicators.html>. [Assessed April 2023].
- Fan, C. (2003). Rural urban migration and gender division of labor in transitional China, *International Journal of Urban and regional research* Vol. 27 (1) pp. 24 – 47.
- Harris, S. & Forhad, S. (2021). Rural-urban migration in developing countries: *Lessons from the literature, Regional Science and Urban Economics*, Volume 91,2021,103713,
- Hayashi, F., & Prescott, E. C. (2008). The depressing effect of agricultural institutions on the prewar Japanese economy. *Journal of Political Economy*, 116(4), 573-632.
- International Panel of Climate Change (IPCC) (2007). “*Climate Change 2007. Synthesis Report*. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change”, Geneva.
- Keohane, R.O. & Victor, D.G. (2010). *The Regime Complex for Climate Change. Discussion Paper 2010-33*. Harvard Project on International Climate Agreements. Cambridge.
- Kok, P. (1999). The definition of migration and its application: Making sense of recent South African census and survey data. *Southern African Journal of Demography*, 7(1), 19-30.
- Kramulla & Shair, G. (2011). Economic and Social Dimensions of Rural-Urban Migration in Pakistan: Results from a Recent Survey in the Northwest Pakistan, *International Journal of Business and Social Science*; Vol. 2 (3) pp. 119 – 126.
- Kruger, A. C. & Shongwe, S. (2004). Temperature Trends in South Africa: 1960–2003. *International Journal of Climatology* 24, (15), 1929–1945.103.
- Kubayi, V. R. (2022). The Effects of Climate Variability and Change on Rural Livelihoods in the Tiyani Village, Limpopo Province. University of Johannesburg (South Africa).
- Kyei, K.A. (2011). “Some Socio-economic Indicators from Vhembe District in Limpopo Province in South Africa”, *Journal of Emerging Trends in Economics and Management Sciences*, 2 (5) 364-371.
- Leal Filho, W. (2015). Handbook of climate change adaptation.
- Letsatsi-Duba, D. (2009). *Drought issues in Limpopo province*, MEC of agriculture. Polokwane, Limpopo province.
- Limpopo Department of Agriculture (LDA) (2010). Downloaded reports. <http://www.lda.gov.za>.
- Malik A. S. (2015). Rural-urban migration: socio-cultural changes in Pakistan-preventive measures taken by government and civil society to control it. *Professional Med J*; 22(6):674-682.
- Morrison, A. R. (1993). Violence or economics: what drives internal migration in Guatemala? *Economic Development and Cultural Change*, 41(4), 817-831.
- Osahr, H., Twyman, C., Adger, N.W. & Thomas,

- Penning-Rowsell, E., Sultana, P., & Thompson, P. (2013). The 'last resort'? Population movement in response to climate-related hazards in Bangladesh. *Environmental Science & Policy*, 27, 44–59.
- Selod, H., & Shilpi, F. (2021). Rural-urban migration in developing countries: Lessons from literature. *Regional Science and Urban Economics*, 91, 103713.
- Skeldon, R. (1990). Population mobility in developing countries: reinterpretation. London: Belhaven.
- Smit, B. & Wandel, J. (2006). Adaptation, Adaptive Capacity, and Vulnerability. *Global Environmental Change*, 1 (16) 282–292.
- South African Weather Services (SAWS) (2015) Annual Rainfall, min/max Temperature. South African Weather Services, Pretoria.
- Suyambu. A. & Tsering, J. (2012). Impact of rural-urban migration of the socio-economic development: a multiple case study in five eastern dzongkhags, International Seminar on Population development.
- Toulmin, C. (2020). Land, Investment, and Migration: Thirty-five Years of Village Life in Mali. Oxford University Press. 21.
- Yohe, G. & Tol, R. (2002). Indicators for Social and Economic Coping Capacity: Moving toward a working definition of Adaptive Capacity. *Global Environmental Change*. 1 (12) 25-40.
- Zipper, S. C., Keune, J & Kollet, S. J. (2019). Land use changes impact on European heat and drought: remote land atmosphere feedback mitigated locally by shallow groundwater. *Environmental research letters*, 14(4), 044012.