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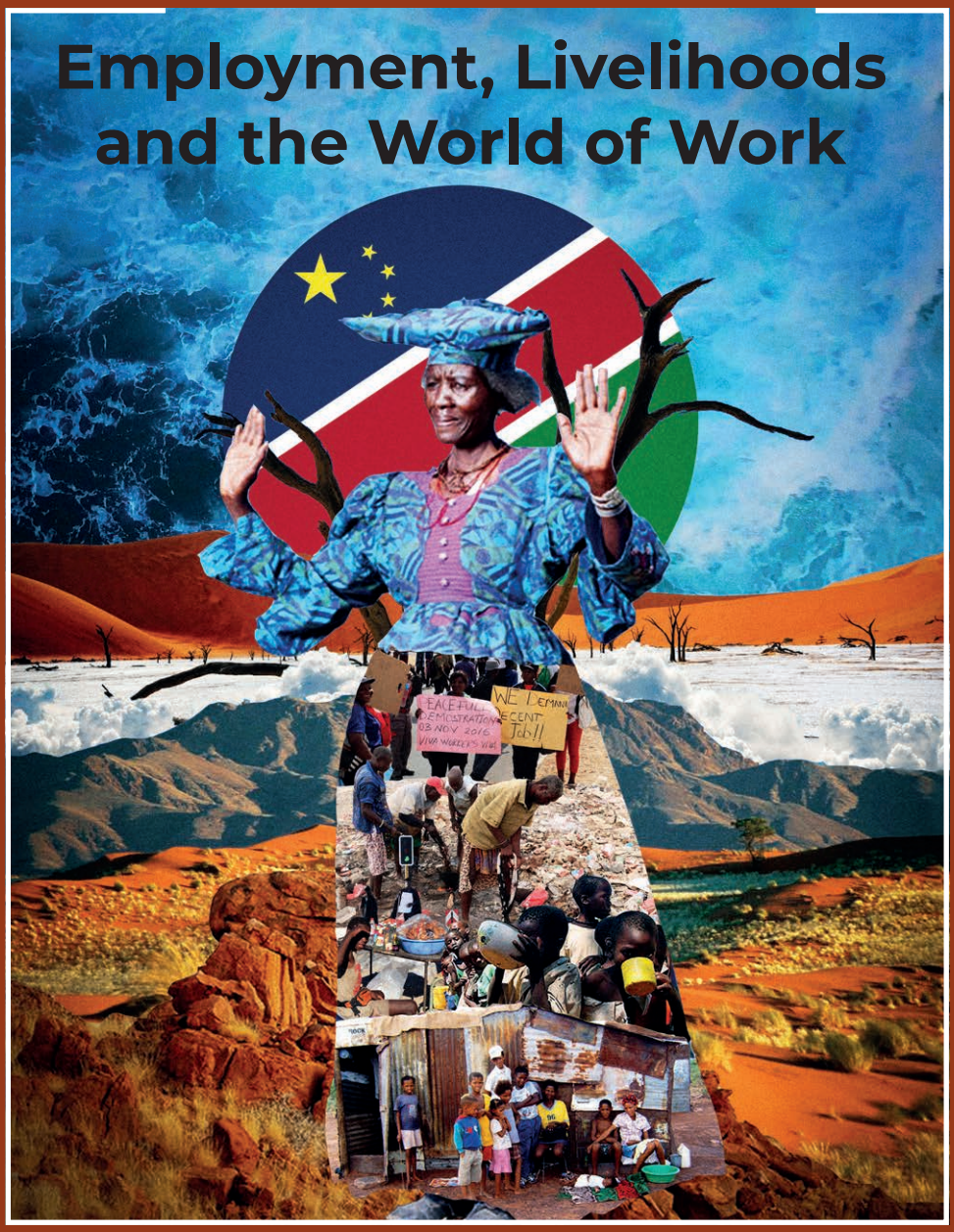

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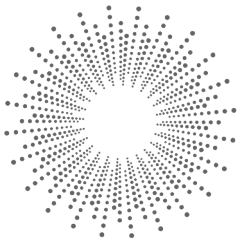

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Trapped in Poverty and Informality: The Effects of Climate Change-Induced Migration on Women in Urban Settlements in Windhoek

Bruno Venditto, Christian Nekare and Ndumba J. Kamwanyah

Abstract:

Increasingly, scholarship suggests that climate change amplifies gender inequalities, therefore affecting men and women differently. Although there is an understanding that Namibia's changing climate patterns pose a threat to people's livelihoods, no study has been carried out on how climate change-driven migration, gender inequality and urban poverty intersect.

Considering rural Namibia's extremely high vulnerability to climate change, this study explores the lived experience of climate change-induced migration of women in Windhoek's informal settlements. A hybrid methodological approach was used in the review and analysis of existing literature on climate change, migration and urbanisation. The literature review was supplemented with face-to-face semi-structured interviews carried out with women participants with a migratory background residing in the informal settlements in Windhoek. A second set of interviews with rural women participants residing in the northern regions, where the impact of climate

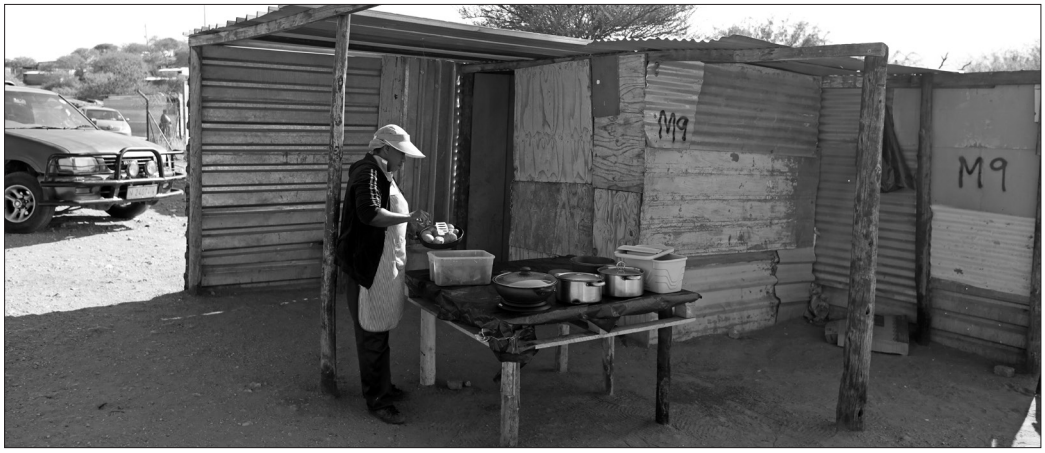


Photo: Valentino Nyambali

change is visible, was also carried out. In this way, we were able to investigate (through the participants' narratives) the vulnerability to climate change and the presence (or absence) of direct correlation with movements to the urban areas.

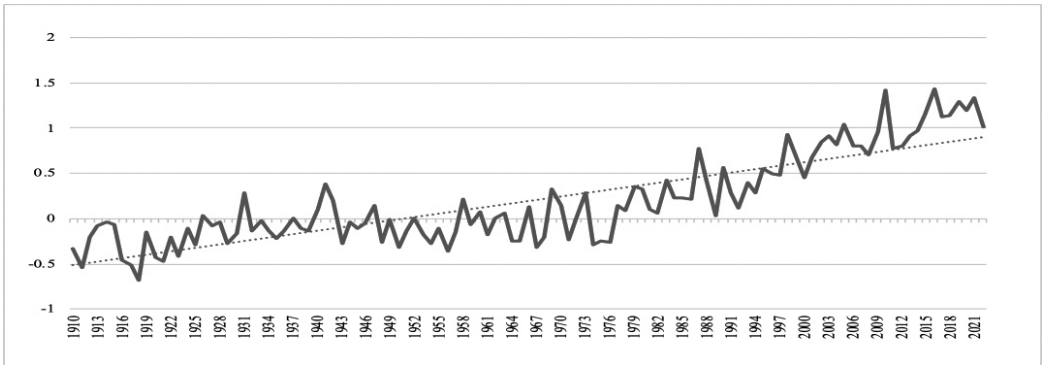
The findings indicate that climate change is diminishing viable opportunities for women in rural areas, therefore negatively affecting their agency and ability to provide and care for themselves and their families, and forcing them to migrate to urban areas in search of better opportunities. In urban areas, they are further exposed to other vulnerabilities due to the lack of formal and permanent employment; poor remuneration for those formally or informally employed; unavailability of insurance coverage in the event of destruction to their property by fire or flood; and the lack of electricity, water and sanitation services. The study recommends that rural areas, with appropriate structural intervention, could be transformed into hubs of climate-smart economic growth to prevent rural-to-urban migration. On the other hand, more efficient urban management is an urgent priority. There is a profound need for a proactive approach (at local and national levels) to meeting the needs of people moving to the urban areas so as to curb and regulate the proliferation of informal settlements in Windhoek, as well as in other urban settlements.

Key terms: climate change; urban migration; poverty; informality; Namibia

Introduction

A commonly held belief is that global warming occurs naturally, and at a slow pace (Venditto, 2021). On the contrary, however, anthropogenic actions are warming the earth faster than has been observed throughout history (NASA, n.d.; National Research Council, 2020; Hausfather, 2017). The global mean temperature in 2022 was about 0.86°C above the 20th century average of 13.9°C, making the year 2022 one of the warmest years since the earliest records on global warming in 1880 (National Centers for Environmental Information [NCEI], 2022; Trisos, 2022). While concentrations of major greenhouse gases – carbon dioxide (CO2), methane (CH4) and nitrous oxide (N2O) – continued to increase throughout the recorded period, the 10 warmest years have all occurred since 2010. The year 2022 also marked the 46th consecutive year with temperatures above average in Africa (Figure 1) (NCEI, 2022). Although the least prolific contributor to global warming, compared with many other geographical areas, the African continent is extremely exposed to climate variability, including heatwaves that have become more frequent and long-lasting (Trisos et al., 2022).

Figure 1 *African Yearly Variation in Temperature (1910–2021)*



Source: Authors' elaboration from NCEI (2022)

Increasing temperatures are threatening people's livelihoods, leading to the worsening of the existing conditions in most parts of Africa.[19] The outcomes of such natural disasters are more vulnerabilities, especially for women and girls, in the form of health insecurity, food and water insecurity, and population displacement due to migration.

Focusing on southern Africa, the World Meteorological Organization report revealed that in 2020, the region recorded precipitation below the long-term 1981–2010 average (World Meteorological Organization, 2021). With average rainfall in Africa predicted to further decrease and evapotranspiration to rise, the vulnerability of rainfed agriculture resources in the region is going to increase (Mercandalli & Losch, 2017), further increasing stress on communities and households due to exhausted fonts of livelihood. A large part of the population lives below the poverty line[20] while depending on agriculture-based activities that are weather-sensitive, such as rainfed agriculture, livestock herding and fishing. In this way, climate change serves as a threat multiplier that exacerbates existing conditions of poverty and vulnerabilities on the continent (World Food Programme, 2021).

Moving away from climate-sensitive areas can be an effective strategy of adaptation and agential power. Contrary to popular belief, however, people rarely move beyond national borders when deciding to migrate. Instead, they tend to move to cities within the country or national borders

19 In 2020, southern Africa recorded precipitation below the long-term 1981–2010 average (World Meteorological Organization, 2021).

20 Calculated at US$ 1.90 a day in terms of 2011 purchasing power parity.

(Boas et al., 2019). This is confirmed by the World Bank's *Climate Risk Country Profile: Namibia* (World Bank, 2021), which suggests that climate change is a powerful driver for internal migration. Still, migration is a complex phenomenon that is caused by a multiplicity of overlapping dynamics, including, as stressed by Kaczan and Orgill-Meyer (2020), the availability of the financial resources required to migrate, leading to more studies in recent years questioning the effects and intensity of climate change on human migration and its automatic correlation with temporary rural to urban migration (Mueller, 2020; Grace, 2018; Awil et al., n.d.). Therefore, the simple fact that changes are happening in the climate patterns does not automatically prove that there is a biunivocal correlation between the two events (Ober & Sakdapolrak 2015; Hoffmann et al., 2021; De Sherbinin et al., 2022). If anything, it's difficulty to attribute migration to one driving force. Doing so fails to consider the full spectrum of reasons why people decide to migrate from one area to another (Wodon et al. 2014; Venditto, 2018a). What is clear, though, is the reality that the worsening of the natural environment – accompanied by poor governance, poverty and social tension – can reinforce the existing migratory patterns in any country (Caruso & Venditto, 2011; Venditto, 2018b). This is particularly true for the African continent where climate change is experienced alongside weak governances and deteriorating socio-economic conditions (Mpandeli et al., 2020). As a result, Africa's rural population is expected to relocate to urban areas in search of a better quality of life, further affecting the natural urban population growth on the continent (Henderson et al., 2014; Serdeczny et al., 2017).

A growing body of evidence also links environmental/climate change to women being extremely and adversely impacted in comparison with men and other vulnerable groups (Patience et al., 2020; Md et al., 2022; Chindarkar, 2012). However as noted by Furlong et al. (2022, p. 2), this condition is not based "on the inherent female nature or women's intrinsic vulnerability" but is determined by the resources available, and the legal and cultural norms which ultimately hamper women's agential powers. Having acknowledged this nexus, let's also point out the gap in this discourse, namely that there is a tendency to conceptualise women as a homogenous overpowered group. On the contrary, given the right environment, women can be, and are agents of change. They already know what's good for them, their communities and their societies. They are more than capable of expressing their agential powers, as stated by Demetriades and Esplen (2008, p. 2): "Abstracting women

from their social realities eclipses the relational nature of gendered power and the interdependency of women and men, and paints a distorted picture of women's vulnerabilities, choices and possibilities."

Our approach in this study is to avoid presenting women as people without agency/power, stuck in the vulnerabilities and repercussions of climate change while allowing their men, as presumed breadwinners, to migrate to urban areas in search of work. In the context of our analysis, new trends indicate that an increasing number of women, like men, move away from rural areas, for a number of different reasons (United Nations Department of Economic and Social Affairs, 2020; Caruso & Venditto, 2020), environmental degradation being one of them. However, the very agency/power that propels them to move in search of better livelihoods (Venditto, 2019) becomes an illusion once they arrive in their new urban environment. As a result, the socially and structurally constructed socioeconomic constraints determining women's vulnerabilities in rural areas appear again in the urban environment, trapping them in the same negative situation. These vulnerabilities are intersected in nature, including walking long distances in search of water or firewood, gender discrimination, health and safety inequalities, sexual violence, human trafficking, psychological violence, exploitation and increasing workloads (World Food Programme, 2021; Soliman et al., 2022).

Most of the new rural migrants end up settling in the most degraded informal settlement areas, land that is often unsuitable for development and habitation, such as steep slopes subject to landslides, flood-plains, and environmentally contaminated areas, such as landfills (Davis, 2006). In informal settlements, houses are constructed with sub-standard materials and are located in close proximity to each other, without electricity, access to clean water, or sanitation (Gómez et al., 2008). In such environments, women are particularly vulnerable to falling in the same vicious cycles of gender roles similar to those in the rural areas. On the other hand, as noted in *Gender inequality and urban informality* (Climate & Development Network, 2014), female-headed households in urban centres are often worse off because women cannot benefit from the remittances they would have received had they remained in the rural areas, and they usually end up having lower incomes than male-headed households. Additionally, women in urban areas are more likely to be supporting those left behind in the villages with remittances.

Shifting our attention to the Namibian context, we are conscious of the challenge to establish the linkage of

how climate change, especially climate-linked migration, affects the daily lives of Namibians, in particular women. In Namibia, however, the impacts of climate change are expected to worsen due to increased hot and cold extremes, changing seasonal rainfall, frequent heatwaves, and longer dry spells. Crop yields are also decreasing and livestock losses have become more common, while food insecurity and food prices have increased, and waterborne diseases have become almost normal (United States Agency for International Development [USAID], 2020; Food and Agriculture Organization, 2023). The environment is the primary source of social welfare and social functioning for most of Namibia's 2.6 million population (United Nations Department of Economic and Social Affairs Population Division, 2022; Namibia Statistics Agency [NSA], 2014b). Additionally, Namibians who live in rural areas largely depend on rainfed agricultural and water resources for their livelihoods; we therefore hypothesise that, all other economic conditions remaining the same, the more severe the climate change, as described above, the worse the impacts will be on those in rural Namibia. This is a situation that is likely to accelerate Namibia's urbanisation process, as the changing climate patterns could drive more and more people from rural peripheries to towns in search of employment and better living conditions.

The current level of urbanisation in Namibia is 54.4%, up from 28% in 1991; by 2041, with the population projected to increase to 3.4 million, it is projected that 2.3 million people (67.6%) will be residing in urban centres, compared to 1.1 million in the rural areas (NSA, 2014b). Broadly speaking, Namibia's rural-urban migration has had some relatively positive effects on intergenerational poverty reduction, especially for the population in rural areas (Venditto et al., 2022). Many migrants in urban centres of Namibia still maintain a strong foothold – culturally, socially, economically – in rural areas, and contribute to the development of these areas through both social and financial remittances (Venditto, 2019). Due to the complex nature of migration in Namibia, data about the number and nature of migrants in the country are sparse, as is information about the impact of climate change. Although wide sectoral responses to climate change are gaining momentum in the country, climate-linked migration is still severely under-recognised and understudied. Statistical projections, however, reveal that human mobility in the country is likely to intensify further, resulting in many future urban migrants settling in dense, informal spaces that are poorly serviced, vulnerable and inadequately demarcated, and posing a serious threat to urban governance and the general livelihoods of residents.

This paper aims to revisit and draw lessons from existing findings on the nexus of climate change, migration and urbanisation, and apply them to the Namibian case as additional scholarship which can be used in understanding how climate change shapes the livelihoods of women migrants in the urban environment.

Human mobility in Namibia

The major movement of people within Namibia over the last one-an-a quarter centuries commenced under German rule, being initiated by the forced migrant labour regime instituted in 1907 and fully utilised by the South African administration from 1915 to1971. As a result, thousands of native workers, mainly from the northern areas of the country, were displaced and uprooted from their families and their birth places to the coastal towns in the south, the central areas, and the capital, Windhoek (Hishongwa, 1992). This was forced migration aimed at addressing the productive needs of the colonial economy rather than the specific needs or preferences of the migrants (Venditto, 2019). When this contract labour system was abolished, the movement of black residents inside the country was still limited and monitored by the colonial administration. Even when many racist laws were dismantled in the period prior to independence, the presence of military and security forces through intimidations and harassment made it difficult for freedom of movement. Only with the end of colonialism in 1990, people were free to move and to reside anywhere in the country. Such internal movements were often associated with the need to improve the socioeconomic status of the individuals involved. Despite some progress in reducing poverty, reflected in the major socioeconomic indicators[21] (Phiri & Odhiambo, 2015), the results have been mixed and uneven across Namibia's 14 regions. Inequality still persists, while job creation continues to stagnate and unemployment remains high, particularly among those living in rural areas.[22]

Before specifically examining human mobility statistics, we must note that in Namibia the main source of data collection concerning internal and, to a more limited extent, international migration is the National Census, which is conducted every 10 years. Lack of funds and the COVID-19 epidemic led to the postponement of the 2020 Census, and, as a result, the most recent comprehensive set of primary data on migration still emanate from the 2011 Census, with secondary elaboration from the 2015/2016 Namibia Household Income Expenditure Survey and the 2016 Namibia Inter-Censual Demographic Survey. While acknowledging that

21 In 2009, the World Bank up-ranked Namibia to the upper middle-income group.

22 33.4% in 2018 (NSA, 2019).

Namibia's statistics on migration are incomplete, outdated or nonexistent, we should observe that the Migration Report (Oliver, 2016) indicates that 707 000 residents migrated between 2010 and 2011 to constituencies other than those of their births, while at the same time 41 000 residents migrated to different regions. This implies that human mobility from rural to urban areas in 2011 could have varied between two and 34% (NSA, 2013).

Crosschecking these figures with other available data, we observe that the *1991 Namibia Population and Housing Census* indicated that 28% of the population resided in urban centres. This proportion increased to 33% in 2001, and again by a rate of 49.7% in the latest national census carried out in 2011 (NSA, 2013).

Such increases cannot be explained only by the natural urban growth rate, considering that the total fertility rate declined over the same period from 4.1 to 3.9 (NSA, 2014a). In fact, in the absence of the 2020 census data, using NSA population projections we can note that the urban population further increased by a staggering 54.4% between 2011 and 2022,[23] (Table 1), even though the fertility rate had declined by 18% (to 3.22 births per woman in 2022) over the same period (MacroTrends, n.d.).

Table 1 *Population Variation 2011–2022*

	Rural	Urban	Total
2011	1 215 914	900 163	2 116 077
2022	1 206 368	1 389 669	2 596 037
Growth	-0.8%	54.4%	22.7%

Source: World Bank (2023); NSA (2014b)

Given the limited capacity of the economy to absorb additional workers, urbanisation brings with it several constraints on urban planning and on the new urbanites. Newcomers/migrants typically settle in areas that are poorly serviced (sometimes without any facilities) with weak forms of urban governance (Scharrenbroich & Shuunyuni, 2022). More frequently, they settle in places located near open drains or in low-lying areas where land is more affordable but extremely exposed to natural disasters. In addition, those settling there often have problematic relationships with local government, in part because they live in informal settlements and are typically engaged in semiformal or informal activities. Ultimately, due to low socioeconomic status, informal residents end up having scarce resources, with limited access to affordable housing and basic services, and insufficient access to basic amenities. Many migrants are self-employed or employed in informal

23 In 2019, the urban population surpassed the rural one. Currently the Namibia Statistic Agency (NSA) estimates that the urban population represents 54.4% of the total population and it is projected to increase sharply in the future, to 61% and 72% by 2030 and 2050, respectively (Namibia Statistic Agency, 2014b; Mulama, 2015).

activities or precarious jobs with low wages and without social protection (International Labour Organization, 2014). As a result, the urban informal settlements are spaces of vulnerability, where social, environmental and health fragilities intertwine with structural factors, rendering the lives of the residents difficult. In Namibia, more than 40% of the total population and approximately 80% of the urban population live in shacks and/or rented rooms in informal urban settlements (Scharrenbroich & Shuunyuni, 2023). This is evident in the capital, Windhoek, which currently hosts approximately 35% of the country's urban population (World Population Review, n.d.) with an average of 50% of its population living in informal settlements (Steffen, 2022).

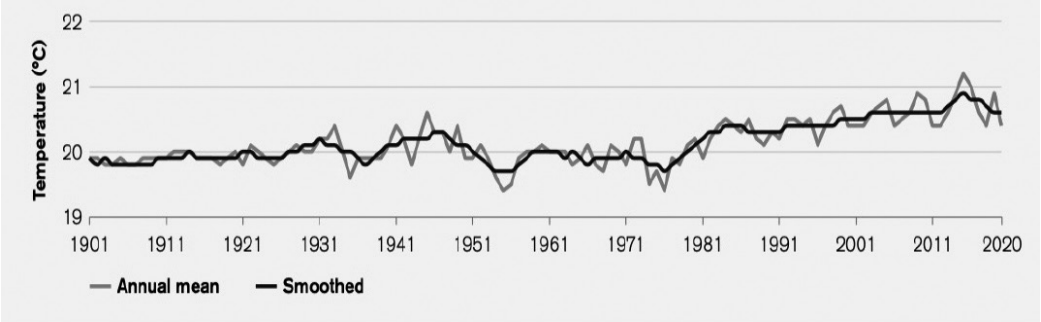
Climate Change in Namibia

Namibia's complex climatic biomes makes it challenging to record and communicate climate trends. The country is, however, faced with the same vulnerabilities as the rest of the African continent, exacerbated by the continent's development challenges due to poverty; limited institutional capacity; lack of access to capital, markets, infrastructure and technology; and low levels of resilience to natural and human-made disasters.

Located between the Kalahari and the Namib deserts, Namibia ranks second in aridity after the Sahara; and only 8% of the land area is sub-humid. The remaining 92% is defined as hyper-arid (22%); very-arid or arid (33%); or semi-arid (37%) (van Rensburg & Tortajada, 2021; Shikangalah, 2020). Due to shortages in surface water, the country relies heavily on groundwater reserves which are subject to low recharge rates from rainfall and periodic ephemeral floods. As indicated by the Namwater Hydrological Services, "... of the rainfall received, 83% is evaporated, 14% is lost through transpiration, 2% is run off in the rivers and 1% seeps underground" (Namwater, n.d.); the country can thus be described as water stressed, as water has always been a scarce resource.

There is clear evidence that the country's temperatures have followed the global trend with warmer temperatures in the latter half of the 20th century, generally 1.0–1.2°C warmer than at the beginning of the century (Dirkx et al., 2008). As indicated in the 2021 World Bank's *Climate Risk Country Profile: Namibia* (World Bank, 2021), increases in temperatures have been observed, with a significant surge in the frequency of days with maximum temperatures above 25°C, and above 35°C, since 1960.

Figure 2 *Namibia Yearly Variation in Temperature (1901–2020)*



Source: (World Bank, 2021)

On the other hand, there are no obvious trends in the amount of rain that falls, but there is rather the tendency for a shorter rainfall season, with a longer dry season (World Bank, 2021).

The University of Notre Dame's ND-GAIN Country Index,[24] which provides an immediate snapshot of a country's vulnerability to climate change and its readiness to improve its resilience, ascribes a score of 45.8 to Namibia, ranking it at 109 out of 192 countries in 2021 (Notre Dame Global Adaptation Initiative, 2023). Flooding and drought have, however, recently stricken the country, with droughts occurring from 1980–1984, 1992–1993, 2012–2013, and in 2019 – one of the toughest droughts in the last ninety years (Menestrey Schwieger, 2023; Shikangalah, 2020). The productive sectors were particularly hard hit, and their output declined sharply; the government declared a state of emergency that lasted until March 2020.

Household members in the villages from the affected areas were able to temporarily cope with the effects of these droughts, thanks to remittances from those who had moved to the urban centres either during the drought or beforehand (Menestrey Schwieger, 2023). While this indirectly confirms that mobility is one of the coping strategies for distress conditions, it is also important to assess the effects of such induced migration on the life of the migrants in the urban areas.

24 The ND-GAIN Country Index summarises a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience. It aims to help governments, businesses and communities better prioritise investments for a more efficient response to the immediate global challenges ahead. The ND-GAIN Index range is from 1 to 100, with lower scores indicating high vulnerability to climate change, and higher scores indicating that a country is better able to face climate change (Notre Dame Global Adaptation Initiative, 2023).

Methodology

This work employs a hybrid methodological approach, combining critical analysis and existing literature on climate change, migration and urbanisation. In-depth interviews were carried out with two sets of participants to assess the effects of climate change-induced migration on women in urban settlements in Windhoek.

A qualitative research approach has been chosen for this study since it is best suited if one aims to comprehend the meaning and dynamics of social or individual human problems (Creswell & Creswell, 2018), as well as to recognise factors that may be tested and describe situations which would not have been accurately interpreted using quantitative study (Kothari, 2010). The participants' narratives were crosschecked with the literature findings to assess and explore similarities/dissimilarities that emerged in the existing body of evidence, which allowed us to generate new information and concrete interpretations of the observed phenomena.

Overall, 21 participants were identified; some were purposively selected through contacts the researchers had with people who had moved to Windhoek to yield cases that were information rich. The remaining participants were recruited among their acquaintances via a snowballing technique in which initial participants identify and refer other possible participants via chain referrals (Palinkas et al., 2013; Crossman, 2020).

Table 2 provides the synoptic characteristics of participants in the northern regions, while Table 3 provides those of the participants in Windhoek.

The first set of participants (Table 2) consists of 13 women with a migratory background selected from urban informal settlements[25] (Figure 3) in the capital, Windhoek.

Their narratives have provided a rich set of information to understand the women's vulnerabilities and the challenges experienced in the new urban environment.

The second set of participants (Table 3) was made up of eight rural women residing in the northern regions, in the areas where the impact of climate change is relatively more significant in consequence of the importance of household agricultural activities and the flood-susceptibility of crops (Omusati, Kavango East, Kavango West, and Ohangwena regions).[26]

25 Participants were from Samora Machel, Moses ǁGaroëb and Tobias Hainyeko constituencies.

26 The participants resided in the following constituencies: Mashare and Ndiyona in Kavango East, Kapako in Kavango West region, Eengela and Ohangwena in Ohangwena Region and Oshikuku, and Elim and Etayi in Omusati Region.

Figure 3 *Participants' informal settlement location*

1= Omugulugwombashe, 2= Kilimanjaro, 3= One Nation, 4= Okahandja Park, 5= Okuryangava, 6= Ombili, 7= Babylon, 8= Greenwell Matango, 9= Goreangab

Source: Own elaboration from Google Maps

In this case participants' narratives have allowed us to investigate their vulnerability to climate change and the existence, or the absence, of direct correlation with movements to urban areas.

Separate questionnaires were prepared for the two sets of participants, and a thematic analysis was carried out to interpret the participants' narratives, without a predetermined coding scheme (Nowell et al., 2017). In-depth face-to-face interviews were conducted using an interview guide with open-ended questions in line with the study objectives. The interview guide was developed by the research team based on existing literature on the nexus of climate change and migration. The recorded information was transcribed verbatim in Microsoft Word; where

necessary, the transcripts were translated into English. All interviews were audio recorded with participants' consent and backed by field notes. Transcripts were read and reread to familiarise researchers with the data, and codes were developed; themes and subthemes were formulated and backed with participants' quotes. An inductive approach was applied in which the theory is generated after data have been collected, and are analysed accordingly (Abbott & McKinney, 2013).

All participants were selected based on their availability, willingness to participate, and ability to communicate; consent was obtained to record the interviews, which were conducted in the language common to the participants and translated into English by the authors. Sampling saturation was followed to determine the sample size (Guest et al., 2020); face to face interviews with rural women were conducted between the 15th of February and 20th of March 2023, while those with the migrant women in Windhoek, in April 2023, in locations convenient to the participants.

Findings

This section is articulated into two sub-sections. Firstly, the characteristics of the two sets of participants are described, followed by the findings that emerged from the narratives of the rural women who migrated to Windhoek, and those of the participants identified in the rural areas in the northern regions. In this way, it was possible to assess both the experience of migrant women living in the urban areas and the prominence of climate change as a factor in rural women's decisions to migrate (or not to migrate) to an urban area.

Participants' characteristics

A large proportion of the participants had arrived in Windhoek in the last five years, although a few had moved to town more than 20 years previously. This gave us the opportunity to assess the similarities and dissimilarities emerging from the participants' experiences covering such a large timespan.

The average age of the participants in Windhoek area was 35.8 years; only three participants had completed Grade 12, while the rest had either failed at Grade 10 level or had dropped out of school before completion. Interestingly, but not surprisingly, there appears to be a direct correlation between the level of education and the type of economic activities the participants were engaged in, with the majority working as small traders in the informal sector, while those with a higher level of education were employed in the formal sector.

Table 2 *Synoptic Characteristics of Participants Living in Windhoek*

	Age	Education level	Region of origin	Arrival in WHK	Location in WHK	Adults in the household		Activity	
						M	F	Form.	Info.
1b	41	G10 (fail)	Kunene	2018	Kilimanjaro	6	1		1
2b	31	G10	Ohangwena	2017	Ombili	2	2	1	
3b	27	G10 (fail)	Kavango W.	2018	One nation	1	2		1
4b	28	G9	Kavango W.	2018	Babylon	5	2	unemployed	
5b	25	G10	Kavango W.	2018	Ongulumbashe	1	1	1	
6b	35	G12	Kavango W.	2018	Okahandja Park	3	4	1	
7b	43	G12	Omusati	1999	Okuryangava	0	4		1
8b	48	G3	Kavango W.	2006	One nation	4	3		1
9b	46	G4	Kavango W.	2002	One nation	4	6		1
10b	38	G9	Kavango E.	2015	Ongulumbashe	5	3		1
11b	30	G12	Oshikoto	1996	Goreangab	1	1	1	
12b	40	G8	Ohangwena	2015	Greenwell Matongo	3	0	1	
13b	34	G10	Oshana	2018	Okahandja Park	2	4	1	
Avr./ Total	35.8					2.8	2.5	6	6

The number of adults living in the participants' households was relatively large, with an average of 5.4 adults, and little difference between the sexes.

The majority of the participants were located in newly informal settlements (Fig. 3) grown in the last ten years from older and more established settlements. Those who arrived more than 20 years ago lived in those areas that have more services and facilities. Most of the participants resided in places lacking electricity and proper sanitation facilities. They cooked on gas or charcoal; access to water was via a central communal tap

The women's average age in the second set of participants was 65 years, with the oldest being 88 and the youngest 37. This average partly reflects the ageing of the population in rural areas, whereas younger people who are fit to work have relocated to urban areas, leaving their young children in the care of the their elderly parents. This observation is in line with the Namibian Inter-censal Demographic Report 2016, which states that "…

urban areas have a larger proportion of working-age population (15-59 years) and a much smaller proportion of the elderly people. The pyramid for the rural areas shows the opposite" (NSA, 2017, p. 48).

Table 3 *Synoptic Characteristics of Participants in Rural Areas*

				Household members	Utilities		Productive activities	
	Age	**Education level**	**Region of origin**		**Power**	**Water**	**Field**	**Livestock**
1a	82	G3	Omusati	10	No	Since 2011	Yes (no crop rotation)	Yes (3 alive after drought)
2a	81	G6	Omusati	8	No (small solar panel)	Yes recently	Yes (no crop rotation)	No (all dead after drought)
3a	37	G10	Ohangwena	7	Yes	Yes	No (not enough rain)	Yes (few after drought
4a	88	None	Ohangwena	7	Yes	Since early 90s	Yes	Yes (moved to Angola)
5a	70	G1	Kavango East	11	No	No	Yes	No (all dead after drought)
6a	65	None	Kavango East	4	No	No	Yes (crop rotation)	No (all dead after drought)
7a	55	G10	Kavango West	1	No	No (from the river)	No (depends on the rain)	No
8a	43	G10	Kavango West	16	No	No (from the river)	Yes	Yes

The majority of the participants did not have a high level of education. However, they did understand the climate change concept in their own way, associating it with the fact that harvests were not as large as they had been in the past because of lower rainfall, and droughts lasting longer, with these factors eventually negatively affecting their well-being.

The urban women's narratives

Four main interpretative lines emerged from the narratives of the migrant women in Windhoek which helped to identify the themes in terms of which the investigated phenomena were conceptualised and explained: i) climate change; ii) lack of economic opportunities; iii) struggling in some ways; and iv) family and institutional support.

Climate change

What clearly emerged from the participants' narratives is the association of climate change with weather variations.

> *"In Oshiwambo we don't have a word of what you asking or explaining [climate change]." (P 11b)*

Lack of rain, drought, and plants or animals dying are initially described as the direct and prime motives driving them out of the village to the urban area. In this there are no differences between the responses of the women interviewed in the rural areas. They identify a worsening of the weather causing a deterioration of living conditions over the years as a reason for moving.

> *"… the land in the village is very small and when it does not rain the water is very far to fetch, the plants die and there is nothing for the animals, so there is not enough food for us there, this is what is forcing me to come here and that is why I come and send money home." (P 2b)*

This description is mirrored by the observations of participants 3b and 8b:

> *"… the quantity of mahangu has been reduced, that is why people are looking for jobs in town, or domestic jobs, rather than stay there [in the rural homestead] with the kids." (P 3b)*

> *"I come from a place with a lake, the water is now less and it smells and the drought these years have worsened and so people at home in the village will expect more help from me." (P 8b)*

Participant 6b's narrative presents the same pattern of events:

> *"…before we had many goats in the household, now because of the drought we have to buy food for them otherwise they die, in time, the production of mahangu has diminished because there is lack of rain. I had to come to support those left in the village, my mother and the small children, to buy food, and uniforms." (P 6b)*

Lack of economic opportunities

When further probed, however, the respondents highlighted the structural challenges of deprivation in rural areas which are ultimately exacerbated by climate change. Participant 13b and 11b shifted attention to the lack of job opportunities in the rural areas:

> *"I left because I needed to come and get work that will give me some money to take care of my children and my relatives' homes. … Works are in towns. No work in the village and a lot of people are just drinking at* kambashu *[self-constructed zinc-and-wood house] because [there is] nothing to do." (P 13b).*

We have had good and bad weather for centuries… I left because there were no works to do there." (P 11b)

A similar situation is described by participant 1b (migrated from Opuwo (Erongo Region) and arrived in Windhoek in 2018):

"…there is not job, no electricity in the village, we are suffering and I need to provide food [and] uniforms for the children there." (P 1b)

Such feelings are echoed by other participants, in particular a woman from Sauyema (Kavango East), who also arrived in Windhoek in 2018:

"I dropped out of school because my parents could not pay and I had to find a job to help at home …_I was staying at home, there was nothing to do there… but if there had been an opportunity, I would have not moved." (P 4b).

Participants 4b and 7b offer still other perspectives on the problem of the low productivity of the land:

"… people are no more cultivating because the land is near to the city and people go to live there." (P 4b)

On the other hand, she also states:

"… people are getting selfish … those who receive government support do not share with the others, for example those who received pipes for watering their [vegetable] gardens ask people to go and work for them but do not pay, so people are still with no money and job and have to move away." (P 4b).

The availability of water is a recurring motivation for migration:

"I would like to go back to the north but the water is very scarce; that is why the government should help with boreholes so we can cultivate." (P 7b)

Participants 13b and 11b, who moved to Windhoek in 2018 and 1996, respectively, give an additional motivation for migration, a further indication of the complexity of the migratory phenomenon:

"I have four children but no husband. I first moved to Oshakati but I could not find work, so I moved here to stay with my uncle while looking for work in 2018. I was first selling kapana *[small pieces of meat cooked on a barbecue and sold on the street] to make some money to send back home for my children and my mother who is taking care of them. Later, I worked in a shebeen [informal liquor shop] but the pay was not good. Luckily, late last year I found this work. It does not pay that well but I can't complain. I am happy that I am getting something for my kids and family back at home." (P 13b)*

Participant 11b also indicated that climate change was not a motivating factor:

> *"My parents moved because they were employed at the Ministry of Safety and Security in 1994, the job was the main reason why they moved to Windhoek. … Every holiday or whenever my parents had leave, they were going back to the village to cultivate, during the years I did not witness any significant change in what was produced." (P 11b)*

Struggling in some ways

The theme of struggling in some ways emerges as a common perspective among the participants to indicate the daily hardships experienced since they arrived in Windhoek. Struggles and suffering were experienced by both those engaged in informal trading activities and those in formal or semi-formal employment. Natural hazards emerged as a major form of distresses experienced in the urban area:

> *"Every time it rains hard the* kambashu *is flooded." (P 8b)*

> *"This place last year was destroyed by strong wind, and when it rains it gets flooded." (P 5b)*

> *"My* kambashu *was destroyed by the fire." (P 1b)*

> *"I live in an area which is constantly under the risk of floods." (P7b)*

Although living in a proper brick house with electricity and running water, participant 11b stated that:

> *"I had many friends that throughout the years had their shacks burned out and flooded." (P 11b)*

Security issues and, as indicate in section *Family and institutional support* below, the lack of institutional support, was also a reason for concern:

> *"… the place is not a secure place, almost every January we are visited by* botsotsos *[thieves/criminals]." (P 2b)*

As result the participants agreed that struggling in the urban area is similar to their struggling in the rural villages:

> *"Here sometimes we do not have enough food for ourself and we have to pay the rent." (P 5b).*

> *"Where we live there is no electricity, and water is accessed through the municipality tap, I cook on charcoal." (P 2b)*

All but one of the participants indicated that the expectations they had before moving to Windhoek have not been met.

> *"I came here with the big expectation to get something good because my boyfriend was working, but I did not, I do not have my own business and I am working for someone else." (P 5b)*

> *"I wanted to be a nurse, I started to work as an assistant in a pharmacy, but you stay with people who take advantage of you, I lost the job and that is when I started to sell things in the market." (P 7b)*

However, despite struggling and in most cases not fulfilling their expectations, none of the participants expressed a willingness to return to their places of origin:

> *"We are going to eat what is there [in the village]? I can go and visit when I have enough money, but not to live." (P 3b)*

> *"Yes, we came to struggle in Windhoek, but it is better than to struggle in the village because there is nothing to do there and we will suffer more." (P 1b)*

> *"Even if it is difficult to live here, we are not going back. I do not want to depend on my parents at home. Staying here it is difficult but sitting at home and looking at my parents with nothing is even worse, here we are struggling but we manage to bring food at the table." (P 5b)*

Family and institutional support

The level and type of support provided by both the participants' families in the rural areas and national and local institutions in urban areas was the fourth theme that emerged from the women's narratives.

As expected, in most cases the decision to move to urban areas was endorsed by the family members, and most of the participants could count on the direct or indirect assistance of relatives or networks of friends during the initial period of their stay in the urban area:

> *"First when I went to Oshakati my mother gave me money to travel. She gets money from the pension. But I did not have a family in Oshakati. I stayed with people from my village. It was difficult but what can we do, we grew up together so we had to help each other. Later my uncle sent me money to come to Windhoek in Okahandja Park [a settlement to the north of Windhoek]. My uncle helped but not enough because he is a* kapana *boy." (P 13b)*

> *"Initially I lived with my sister, then I moved out and built my own kambashu, but it burned down, and I moved to my brother's erf, where I build a new* kambashu." *(P 1b)*

"I stayed with my aunty who had a kambashu, then she died and the place was sold, so I moved out, but I do not have a place where to build mine so I am renting now." (P 2b)

"I first stayed with a family friend, now I am renting." (P 10b)

"I was called by my brother and I am staying with him now." (P 3b)

"My sister was here first, so when I come, she already had her kambashu house. She took me in. It's a kambashu with no electricity, toilet or water, but at least I had my sister and she knows the area. She helped me to look for jobs and gave me some money to use for the taxi." (P 12b)

Diverging from what one would have expected based on similar studies (Frayne, 2004; Pendleton et al., 2014), all participants indicated that they do not currently receive any form of assistance from the family in the rural aeras:

"I used to get some food from the village but since drought has increased, I am not receiving anything now." (P 6b)

"I do not receive any support; my mother's land is small and very little is produced now." (P 10b)

Most of the participants confirmed that their relationships with institutions are complex and often hostile.

"[There is] no electricity in our kambashu because the municipality said we live in an area where electricity is not appropriate to put. When I asked to explain how so, she said it's an omuramba [down-steep/ drainage channel] area where rain water goes through." (P 13b)

"The municipality does not want us to stay there and I am always afraid that they will remove us. We moved three times so far. But now at Greenwell it is better because we rent the place from the legal owner." (P 12b)

The majority of participants indicated that to get their own plot on which to build one or two rooms is the biggest challenge they face, and that it keeps them in poverty, as they receive little or no assistance from the municipality to address this problem.

Similarly, very few participants indicated that they are receiving children support or other grants. This applied even to those who had registered their children with the municipality and Ministry of Home Affairs, Immigration, Safety and Security.

"… the municipality does not do anything to help us, I have also registered my children for grant support, but I have never received any assistance from the government." (P 7b)

"I went to the land committee [local councillor] and I explained what I wanted and they sent me to the municipality but no one could help me … Government people should come and see how we live, our life is very difficult." (P 1b)

"I went to ask at to the municipality about how to get some land but did not get any answer. I also registered my children at the local council to get the grants, I registered since 2018, but did not get any support, they told me to go and enquire at the Ministry, there they said that the [registered] children are a lot and that I have to wait. … I want to register for Harambee,[27] but because I work, they said that I cannot get anything, but still my pay is very little." (P 2b)

"I did not register my children because I am working. The councillor said I am not entitled to receive any form of assistance." (P 6b)

It is evident from the participants' discourse that the lack of institutional support contributed to the hardships experienced in the urban environment.

Rural women's narratives

The main interpretative theme that emerged from the narratives of the rural women participants revolves around climate variation versus services available, which echoes the theme that emerged from the women who had migrated to urban centres. This theme helped us to better understand the underlying motives behind the drive to migrate, and indirectly, the extent of correlation with climate change.

Climate variation versus services available

Although most of the participants did not directly refer to climate change, all had their way of understanding the concept and acknowledged that variations in meteorological events (rain, wind, high temperatures, etc.) are having an impact on their livelihoods through crops and agricultural production, and are therefore impacting central pillars of food security.

"In the past five years, our harvest has been negative, our denser forest is disappearing, temperatures are higher than before. Strong winds have become common in the area, … our brick house got destroyed, including the shop of our neighbour … we were fortunate that no one was harmed." (P 5a)

Participant 6a expressed the same idea:

"The wind pattern has also changed; vegetation has become highly disturbed, leading to more disease among animals. We found ourselves in hard times now." (P 6a)

27 The Harambee Prosperity Plan is a targeted Action Plan to accelerate development in clearly defined priority areas, which lay the basis for attaining prosperity in Namibia (Russmann, 2021).

Participants also recognised that rain patterns have changed, and although as indicated by the World Bank (2021), in quantitative terms, the long-term rain patterns in Namibia do not show an overall reduction of the amount of rain; however, there have been changes in the timing and length of the rainfall season, and in the face of a scarcity of productive assets and a lack of public services such as water and electricity provision, the changes ultimately do have an impact on crop yields.

> *"Many things have changed, flood is not experienced anymore as in the past, our animals have died because of drought." (P 1a)*

This sentiment was echoed by other participants:

> *"Years back there was enough water, but as for now it doesn't rain as much." (P 2a)*

> *"The soil has gotten old too and rainfall is limited." (P 6a)*

However, studying the rural participants' narratives makes it clear that, as in the case of those who did move to Windhoek, poor harvests resulting from variable rainfall or climate change are not the only type of hardship that they endure:

> *"We cook with firewood which is collected far in the forest, there is no current water and we fetch it from the river." (P 7a)*

> *"We walk about five kilometres to fetch the wood to cook and the water we take from the river." (P 8a)*

> *"I use firewood for cooking, only now we got water but before I used water from the oshanas [ephemeral pans]." (P 2a)*

> *"There's no electricity in the village, I cook with firewood, water only arrived in 2011, before I got water from the wells." (P 1a)*

Discussion

The findings from interviews with urban and rural women are in keeping with critical climate migration narratives (Randal, 2013). These narratives point to the fact that preexisting negative infrastructural and employment conditions, together with a lack of assistance from the government, accelerated land vulnerability, thereby exacerbating the effects of climate change and causing rural people to migrate to urban areas. This suggest that climate change is a relevant, but additional threat to rural livelihoods and is therefore a co-factor leading to migration to urban areas. In the description of these events, the participants' narratives were very similar to those observed by Afifi et al. (2012, p 47) when interviewing Somali farmers in an Ugandan refugee camp: a combination of factors, including "a

lack of support from the government", "drought" and "war", caused them to move.

On the other hand, the findings corroborate what has been emphasised in the literature on migration, that the most immediate migration driver is the need to improve the wellbeing of the family and/or individuals, over and above economic motives. We posit that when climate change negatively increases vulnerability in natural resources, further threatening individual livelihoods, with support from an absentee government not forthcoming, the choice made is to move to greener pastures in urban areas where employment opportunities and better economic conditions are believed to exist.

A salient characteristic of the living condition of the women participants in the urban environment is the level of precarity in which they live after moving to Windhoek, as if they are trapped in poverty and informality. With little or no information on their rights, in the event of an external event such as the destruction of the dwelling where they are living or the ending of financial support from a spouse/partner, all that the person has accumulated since arriving in the city is jeopardised. For the migrant, this is like going back to square one. It confirms similar studies indicating that urban migrants are very vulnerable since they do not have any form of insurance against natural or man-made disasters or any other hazard (Pauvert et al., 2017).

Looking specifically at the socioeconomic challenges that affect the livelihoods of the women living in informal settlements in Windhoek, as also observed by Pendleton et al. (2014) a decade ago, hunger remains one of the main challenges they face. In the case of our migrant women's sample, this is exacerbated by the lack of formal, full-time employment, as well as the poor remuneration received by those who are formally employed. This observation highlights the fact that the idea that food insecurity is mostly a rural condition is actually incorrect. Currently, food insecurity in the urban informal areas is generally associated with social challenges, for example the lack of facilities such as electricity and water supply and sanitation, as echoed in the findings of Zulch et al. (2023) in informal settlements in South Africa.

On the other hand, what also emerged was that the participating women (in both rural and urban contexts) seek self-reliance. Most indicated that they were engaged in subsistence and income-generating activities such as selling *kapana*, *oshikundu* and *marovhu*/*omalodu* (traditional home brewed drinks), or wood to generate extra income for their

families. Closely related to the women's self-reliance is their resilience. Their narratives strongly suggest that they are not just sitting at home and waiting for handouts from local authorities or the government, or for support from their husbands/partners or male relatives, although they do complain about the lack of official assistance. Instead, they go out seeking jobs in both the informal and the formal economy. They contribute to the household income, in most cases are the breadwinners and family heads, and support children and relatives back in the rural areas from which they migrated. All these point to their agency/power to progress beyond difficult circumstances. As narrated by participants:

> *"... I joined a women's cooperative and I started to sell vegetables in the market." (P 10b)*

> *"[In the village] I used to sell oshikundu to make more money so that we could buy food." (P 12b)*

> *"... there were no jobs [in Windhoek] so I started my own activity." (P 1b)*

> *"I lost the job and that is when I started to sell things in the market." (P 7b)*

> *"So I was first selling kapana to make some money … later I worked in a shebeen." (P 3b)*

Consideration should be given to the question: How can local government in both rural and urban settings enhance women's resilience by capitalising on their energy, creativity and ingenuity through policy, programmes, service delivery and the creation of other opportunities?

Finally, the importance of networks of families, relatives and community members was identified as a critical factor that empowered most of the interviewees, providing the much-needed support in the new urban setting. The members of the family (uncles/aunts, sisters/brothers, parents, partners/spouses) and even acquaintances whom they knew from when they were living in the rural areas helped them to settle in and, in some cases, supported them financially, emotionally, psychologically and by any other available means until they were on their feet and able to find a job (informal or formal), or commence with income-generating activities. This also calls for a robust response from local government to strengthen social networks as a service delivery mechanism to the urban newcomers. It could also be offered as a national priority in rural areas to enable families and communities to be strong sources of support, in line with the notion of "*ubuntu*", and to support the perception of the wellbeing of community from the perspective of "we-ness". In short,

the community is strong when no one is left out and forced to suffer or struggle on her/his own.

Conclusion

The size of the sample does not allow us to draw unequivocal conclusions regarding a change in the direct or unique correlation between migration and the many social forces that are influencing women living in poverty in both settings (rural and urban) of our study. Climate change is certainly one factor that is exacerbating the vulnerabilities of the research participants in our study. With more severe weather patterns (such as prolonged drought) in rural areas, crop and food production are impacted, forcing more rural people to abandon their rural lives and migrate to urban towns in search of alternative opportunities. What is clear from this study is the revelation that climate change-driven patterns are limiting (if not destroying) the self-reliance, resilience and persistence of women in rural areas. However, the findings also suggest that when women arrive in their new urban environments, policies that are biased against the self-reliance, resilience and persistence of those newcomers, or the lack of policies that support them, further hinder women's livelihoods. The demolition of shacks, ineffective service delivery, the lack of reliable public transport, the lack of crime prevention, and poor child care facilities, amongst others, all further render the new urban residents vulnerable.

The study recommends that both local and national government address the factors leading to these women – in both rural and urban settings – being trapped in the vicious cycle of poverty. This could be realised by creating reliable avenues for urban residents to transfer money through remittances back to the rural areas from which they migrated; by enhancing agricultural productivity in rural and urban settings; by providing access to clean water and sanitation in both rural and urban settings; and by facilitating the smooth transition from cooking on fire to solar-based technologies. Building social infrastructure such as child care facilities, parks, and playgrounds, as well as training and retraining of unemployed and underemployed women in the sectors where they are most likely to be employed, are all measures that could address the identified vulnerabilities. Finally, in view of the participants' narratives regarding the difficulties they experience in accessing social grants, a revision of the grant delivery mechanism should be considered. In this regard, implementing social protection measures (such as the proposed Universal Basic Income Grant[28] and

28 The proposal for a Basic Income Grant in Namibia was made in 2002 by the Namibian Tax Consortium (NAMTAX), a government appointed commission. The debate about a Basic Income Grant in Namibia is based on the proposal made in 2005 of a monthly cash

unemployment grants) could be part of a proactive institutional approach to managing people's vulnerabilities and indirectly addressing the impacts of climate change in both rural and urban areas.

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