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Thenjiwe Meyiwa, Thandokazi Maseti, Sizani Ngubane, Tebello Letsekha &
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Women in selected rural municipalities: Resilience and agency against vulnerabilities to climate change

Thenjiwe Meyiwa, Thandokazi Maseti, Sizani Ngubane, Tebello Letsekha and Carina Rozani

abstract

The role of rural women in eradicating poverty and ending hunger has been recognised by both scholars and practitioners. There is an acknowledgement that women serve a critical role in the agricultural labour force, subsistence farming, and rural development in sub-Saharan Africa, yet their central role in food security has been largely ignored, particularly in policy (Govender, 2012). Although much of the labour of rural women is not nationally defined as economically active employment these women still spend long hours in undervalued productive and reproductive work to ensure the well-being of their households. Linked to this role is the challenge of dealing with rapidly changing climatic conditions. Women assume primary responsibility in fetching water and wood for meal preparation, and in tilling the ground. They are among the most vulnerable groups to climate change as a result of their precarious environmental livelihoods. Using data from a workshop with rural women to discuss climate change and qualitative interviews with rural women in selected rural communities in the Eastern Cape and KwaZulu-Natal we explore the meaning of climate change. We report on the way climate change is understood, its effects on rural livelihoods and some responses to climate change problems experienced by the women in the communities. The women in the rural communities highlight that there are also social problems that have arisen from water scarcity. As a result of the household division of labour, rural girls confront particular challenges as they need to search further from home for water and are exposed to the risk of gender violence.

keywords

rural women, resilience, vulnerabilities, policy lessons, gender and climate change

"When rivers close by our homes dry up; women and in particular young girls are susceptible to sexual abuse. Circumstances compel them to wake up as early as 3 am in search for water, a situation that exposes them to rape and unwanted abduction" (Chair of a rural-based women empowerment organisation, Sisonke Municipality, January, 2014).

Introduction

"There is nothing like returning to a place that remains unchanged to find the ways in which you yourself have altered" – Nelson Mandela (*A Long Walk to Freedom*, 1995:57).

Nelson Mandela's idealised image of a timeless, unchanging African landscape is a reflection

against which we consider the rural women's responses to the changes wrought by climate change. Sadly, in a time of climate change the reassuring sense of familiarity and predictability of life no longer holds true for many rural women and girls who are living in environments that are changing, sometimes dramatically, owing to circumstances they cannot alter; changes that are imposed on them by circumstances that are beyond their control. From a gender perspective, there is limited documentation (eg Crick and Vincent, 2010; Reid and Vogel, 2006) that we are aware of that covers the experiences of South African rural women in relation to the manner in which they manage matters related to climate change.

This *Profile* collates our findings and observations from a series of studies conducted between 2012 and 2014 in rural geographical areas.¹ As authors, we also draw from our own lived experiences - as individuals who have lived, worked and engaged with various facets of rural life; a life that is often beset with difficulties, and yet also marked by stories of resilience and success. The research involved consulting with other women, and research on current theory and practices on the barriers and actions to agency by rural women in responding to and management of climate change. We also incorporate our own first-hand experience and knowledge with a view to drawing lessons from the research and their experiences in order to inform policies on climate change. We, the authors, comprise two women who work closely with rural women on a daily basis as rural development practitioners and three researchers who are urban-based with strong personal connections to rural areas, having lived in rural areas and who continue to work there. The researchers' subject fields include psychology, sociology of education, indigenous knowledge systems, and gender studies. The common thread among us is that we all work with rural communities and use gender analysis in our research interpretation.

Extreme weather conditions

In the last six to eight years², the world has experienced a series of weather induced natural disasters, including amongst others, Hurricane Katrina (2005) in the United States of America (USA), Hurricane Rita (2005) in the Gulf of Mexico and Typhoon Haiyan (2013) in the Philippines. Large areas and populations have been affected by the disasters. There is

overwhelming evidence that high carbon levels and greenhouse gasses have led to global warming, a rise in sea levels and to ocean waters becoming warmer (Boetto and McKinnon, 2013; Gamble *et al*, 2008). Despite the scientific evidence of the crisis facing the environment and the world's people, there are many who deny or refute the evidence of the need for universal concern about climate change (Doss *et al*, 2014), at the same time diverting attention away from its gender dimensions. While Africa, and South Africa in particular, has experienced relatively few climate change disasters, with floods and prolonged droughts and other impacts occurring on a smaller scale, climate changes are being felt and are having an effect on the environment. The human cost of climate change, as well as the resultant ripple effect, is mostly registered with populations who are located in geographically vulnerable areas (such as coastal cities, town and villages) (Verma, 2014). Within populations, however, it is now unquestioned that rural women and children are the most likely to suffer the worst impacts of climate induced changes on the environment and extreme weather events (Verma, 2014). They are at extreme risk as a result of dependence on the environment as they subsist off the land and rely on natural resources for daily survival (Berman *et al*, 2012). They are consequently exposed to the dangers of water scarcity, declining crop yields and greater hunger and poverty: their existing problems are magnified by degradation of the natural resource base. Few rural women are equipped to deal with climate change and many are not informed about the causes of the changes in weather they observe.

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The National Climate Change Response Policy of South Africa acknowledges the significance of taking into cognisance indigenous knowledge and local context for adaptation strategies towards climate change (Department of Environmental Affairs - DEA, 2011b). Much climate change policy, research and discourse has tended to narrow climate change's major effects down to the economic costs or gaps in scientific knowledge related to the expertise needed to monitor and

mitigate climate change (Pielke, 1998; Okaba, 2011). Although the gender gaps in acquisition of skills have traditionally favoured men and boys, the increasing concern with the far-reaching effects of climate change on women and girls needs to shift this focus so that women and girls are capacitated and also learn the skills needed for developing climate change resilience. In this *Profile* we demonstrate how women and girls, relative to men and boys in South Africa's rural areas, are differentially impacted by climate change. Understanding these differences should be of interest to development practitioners, researchers, and policy-makers alike so that policy formulations incorporate gendered vulnerability to climate change. Women and girls who are already disadvantaged face additional setbacks in meeting development goals and fulfilling their traditional roles. Furthermore, the reliance on the environment as a sustainable and dependable resource may become increasingly tenuous without the external support and resources needed to adapt to climate change.

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Context and gendered vulnerabilities to climate change

It is imperative to address concrete climate change problems, paying particular attention to rurality and cross-cutting issues such as gender, socio-cultural context, vulnerabilities, risks and opportunities and barriers to change and solutions.

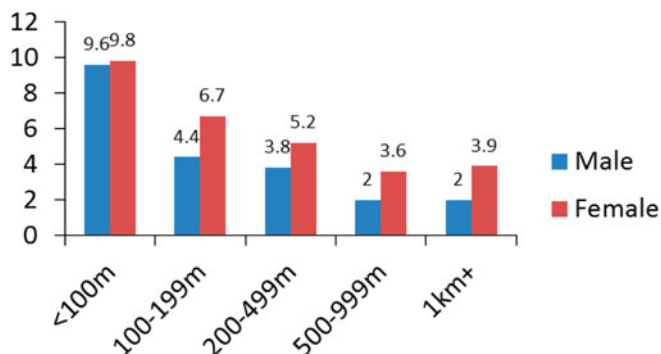
Onyango (2011) maintains that developing countries are not well protected from the uncertainty of climate change, and climate change will make existing development challenges worse, further undermining the capacity of already vulnerable people to cope. They further explain that climate vulnerabilities are location and context specific. We argue that appropriate information is needed before we can identify appropriate solutions to implement for rural conditions.

Vulnerability to climate change is determined by the physical impacts of climate change on the availability of resources that people depend on and the ability of people to continue to access scarce resources (Gupta *et al*, 2010). Vulnerability can be understood

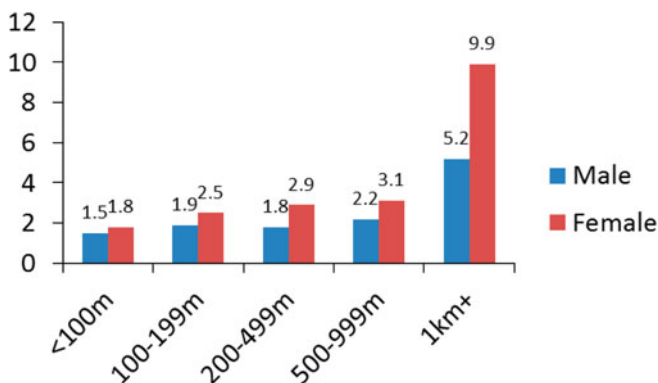
as a social construct which is influenced by institutional, economic and biophysical features (Handmer *et al*, 1999). While vulnerability is not synonymous with poverty, poverty and marginalisation are frequently drivers of vulnerability. Likewise vulnerability to climate change is likely to exacerbate existing vulnerabilities and create new vulnerabilities (McGray *et al*, 2012), as was found with rural women in the research.

Research on climate change makes use of scenarios to illustrate how various communities will respond to atmospheric change and describes the possibilities that may exist for anthropogenic climate change (Berman *et al*, 2012; Doss *et al.*, 2014). From this research it is demonstrated that the impacts and consequences of climate change vary according to geographic location, for instance cooler areas are likely to suffer from livestock losses at the onset of warmer temperatures. Some effects are, however, universal, for example, dry land crops in all regions will be damaged by any warming (Klein and Donald, 1999; Verma, 2014). While there is acknowledgement that human societies in general are highly adaptable, it is crucial that there is willingness of political and local authorities to provide resources to support adaptation as constant adaptive behaviour is a characteristic of social and political activity (Klein and Donald, 1999). Geographic location also has important bearing on the level of vulnerability and response strategies, for instance, responses to climate change in urban areas will differ to response strategies in rural areas that are often under-resourced and lack access to information.

The detrimental effects of climate change also vary according to gender. In many cases, women are more vulnerable to the negative effects of climate change because of their lower social status in their communities as well as their dependence on natural resources for their livelihood that may be threatened by climate change. Many impoverished women, particularly those in the rural areas we have worked or lived in, are farmers who depend on the natural environment for subsistence and income generation. It is a societal expectation that women and girls carry the burden of responsibility of securing water for cooking and other household chores (See *Graphs 1 and 2*) and water scarcity has particular impacts on rural households. Relative to boys and men, they travel long distances to fetch water and energy resources like wood and dung.



Graph 1: Water collection by sex measuring the distance travelled (in%)
Source: StatsSA, 2012²



Graph 2: Wood or dung collection by sex measuring distance travelled (in%)
Source: StatsSA, 2012³

Gender differentiated access to infrastructure, resources, information and political / traditional structures mediate the ways in which women in rural areas are able to respond to the impacts of climate change.

The statistics confirm the United Nations (UN) Women Watch’s (2009) assertion that more girls than boys are likely to drop out of school due to, among other reasons, being required to perform the household tasks of securing food, water and energy needed for survival. This situation is likely to be aggravated by the water scarcity resulting from changing rainfall patterns and droughts.

Methodology and contextual background

The perceptions and experiences of selected Eastern Cape (EC) and KwaZulu-Natal (KZN)

rural women were recorded between October 2013 and February 2014. Seeking to interrogate and respond to the questions related to rural women’s understanding of climate change and how they manage the resultant effects, we use both primary and secondary data derived from individual interviews and a workshop that was attended by 23 women. The workshop was organised by the Rural Women’s Movement (RWM), a non-governmental organisation (NGO) based in Richmond, a rural town north of Durban. This was done under the stewardship of Sizani Ngubane, the president of RWM and founder of the Greener Pastures Farm, a farming project that trains and supports rural women on practical sustainable farming methods. Within the project rural women of the Sisonke Municipality have had meetings and held workshops to discuss, among other

matters, the indifference and denial by authorities in so far as climate change is concerned. At the workshop on the effects of climate change in January 2014, women listed the challenges they faced as well as strategies for mitigating the effects of climate change drawing from their indigenous knowledge and resources. They listed the threats they identified and the unfolding impact of climate and environmental change. The workshop was mostly attended by participants who are part of the Sisonke Rural Women's Programme, a programme based in KZN with the objective of developing rural women's leadership and entrepreneurial skills. Data was also drawn from semi-structured individual interviews of 30–45 minutes with nine women who reside and work in three rural municipalities: the EC's Intsika Yethu Municipality,⁴ and two KZN municipalities, Harry Gwala District Municipality and Kwa-Sani Municipality.⁵ Participants for individual interviews were selected on the basis of their availability and involvement in earlier discussions on climate change.

All communication and interviews were conducted in either isiXhosa or isiZulu and translated into English. Analyses of the empirical data by the authors was informed by self-study research and forms of knowing the self (Samaras, 2011; Pithouse-Morgan and Van Laren, 2012), including our reflections on rural life.

Rural areas in the EC and KZN are characterised by a lack of infrastructure such as electricity and inadequate sanitation (Meyiwa, 2014). Rural areas are threatened by climate change risks such as environmental degradation, deforestation and soil erosion, floods, droughts, and an increase in temperature leading to crop failure (Okaba, 2011). The reported risks have gendered implications for women who comprise 59% of the population in rural areas (Bornman *et al*, 2013). As in many rural communities, the majority of the women were solely dependent on local natural resources and grow agricultural produce to generate an income.

The EC and KZN provinces share a number of socio-cultural similarities. Both are largely rural and the main languages spoken in these communities are isiZulu and isiXhosa, respectively. These languages are mutually intelligible, belonging to the same group of Nguni languages. The traditional way of life, family structure, moral attitudes, and gender mores

are strikingly similar (Meyiwa, 2014) in the rural communities studied, Cofimvaba and Bholokolela of the EC (Intsika Yethu Municipality) and Emakholweni of KZN (Kwa-Sani Municipality). The participants described themselves as living in extremely poor neighbourhoods where high levels of unemployment are the norm and where migration contributes to social dislocation (Casale and Desmond, 2007; Farmer *et al*, 1996). They said that the lack of infrastructure and severe land degradation from soil erosion exacerbated this status quo (see Figure 1).

The discussions held with the selected rural women in the two provinces were informed by the following questions:

1. What is the rural women's understanding of climate change?
2. Which elements of climate change do they find the most difficult to deal with?
3. How do women deal with the effects and impact of climate change?
4. Based on their experiences, what are the women's recommendations to authorities in dealing with climate change?

The analysis presented attempts to accurately describe the women's direct experiences and opinions as relayed to the authors. We do not purport to be the voice of all rural women of both provinces. For the purposes of this *Profile* 'rural woman' refers to women across the age and educational spectrum who reside in rural areas. Although many are unemployed or participate in informal employment, they manage to provide for their families. As with many rural women they are primarily responsible for caring for the elderly and the young. In addition, they are responsible for household food security, for gathering firewood and water, and many earn an income from their agricultural activities. Most respondents who participated in the study considered their fellow women as 'sources of information' and 'pillars of strength' – who ensure that life in their communities is lived in the best possible way, despite the challenges they face, including those related to the negative impacts of climate change. Thus, it was apparent that the women are the custodians of a number of life skills.

In the context of climate change, they experience a series of problems all of which can combine to make life intolerably difficult.



Figure 1. Land eroded by heavy rains in Cofimvaba. The degraded land can no longer be cultivated.
Source: Meyiwa *et al*

Rurality often means living from hand-to-mouth, and minimal resources with which to expand livelihoods. It is not uncommon to invest every last penny on seeds for crop planting and chicken farming.

Findings

It was found that three climate change elements were of most concern for rural women in the study: water scarcity, food security and flooding. The relationship of these elements to agriculture, land degradation and health was highlighted. In this section women's experiences and understanding of climate change in relation to health are outlined. Further, the ripple effects of climate change on households are elucidated.

Climate change effects on health: Weather and climate play a significant role in health, and climate change will add to women's care burden as they are responsible for the care of the sick (Gamble *et al*, 2008). One of the participants, a retired nurse and president of a NGO, aligned her understanding of climate change and change in weather with health problems.

"Changes in climate affect the average weather conditions that we are accustomed to. Warmer temperatures lead to hotter days and more frequent and longer heat waves. Since we have started to experience this kind of change there has been an increase in the number of heat-related illnesses such as heat stroke and dehydration due to excessive sweating. These illnesses have also been the most

common causes of weather-related deaths" (interview Cofimvaba, January, 2014),

Her observation suggests that health-related threats are an important area of vigilance for women, particularly women whose work in the fields exposes them to heat stress. Handmer *et al* (1999) and Gupta *et al* (2010) project that warmer temperatures from climate change will increase the frequency of days with unhealthy levels of ground-level ozone, a harmful air pollutant which could contribute to the health problems of rural populations. Exposure to direct physical temperature stresses are likely to put children, older adults and outdoor workers at risk (DEA, 2011b). In the rural areas we have worked in older female adults tend to do most of the outdoor labour, putting them at particular risk.

Water scarcity, droughts and hotter temperatures: A respondent from Emakholweni, a rural village in northern KZN in the foothills of the Drakensberg mountains, relayed how members of her community worked tirelessly for four days on a project of channelling water from a nearby river following droughts in 2013. They used stones and wood to build a deep spring. She said:

"We are now better prepared for future droughts as the spring will secure water supply for our farming even if we get a repeat of 2013" (interview in Emakholweni, April, 2014),

This is an indication of an understanding of the ripple effects brought about by a change in climate, but more importantly

acknowledgement of a need for the community's agency. The negative effect of climate change was reported to have led to water scarcity, which in turn curtailed agricultural activities. Without water they could not farm.

In the EC's Cofimvaba, the major water source the Kei River has a decreased run-off which has affected smaller rivers. With water scarcity, development is constrained. River water sources are expected to be increasingly erratic with increasing changes in the climate (Crick and Vincent, 2010). One of the Cofimvaba respondents contrasted the weather of earlier years with the past two years. She noted that there have been higher temperatures, more sporadic rainfall patterns and more frequent droughts experienced. In the arid and semi-arid areas of Cofimvaba the existing water shortage is now severe. Droughts are also the most common reported change in Bholokodlela. The drought has had a negative impact on the women's ability to work the land, such as tree and crop cultivation, or improvements in grazing for the benefit of livestock. The sources of water relied on prior to the drought, dams and rivers, have dried up. The residents depend on communal taps which sometimes yield only a trickle of running water. Women are now forced to go in search of water in other villages, in some cases migrating and moving to villages that are adjacent to rivers.

Agriculture and food security: Agriculture supports traditional livelihoods and ensures the food security of families. The studied communities practice two forms of agriculture: the first comprises subsistence farming by households to supplement their income and food requirements and the second, small-scale commercial farming to generate income. The traditional production of crops and keeping of livestock meets household requirements for food, fibre, fuel, plants-based medicine and other essential consumables. There is a dependence on indigenous plants and gathering of wild plants in traditional livelihoods and it was reported that some plants are no longer found. Specifically, it was reported that it is proving to be more difficult to provide nutritious meals due to the significant decrease in the wild spinach plant called *imbuya*. Reflecting on late rains that led to maize corn not growing as well as anticipated, a mother of four school-going children said:

"Unexpected changes for our gardens negatively affect food production and leave us wondering if we will have enough food for our families" (comment by a woman of the Sisonke Rural Women's Empowerment Programme at Climate Change Adaptation workshop, January 2014).

Anticipated higher temperatures and rainfall changes have far-reaching implications for agriculture, farm profitability, land use patterns, household and community food security and development in general (Gamble *et al*, 2008; DEA, 2011a). The three communities have limited means to invest in agricultural aid and technology such as fertilisers, machinery and pest controls. A woman of the Bholokodlela village who is a member of a women's farming collective who grows produce for income generation noted that they had seen the produce from the land shrink in the previous year (2013).

Climate change and *ukuthwala* (bride abduction)

Also itemised by the women as an area of concern was that climate change has increased the potential exposure of girls and young women to the danger of gender violence in regions where there is water scarcity as a result of negative patriarchal customary practice, specifically *ukuthwala* (bride abduction). Vulnerability to abductions is identified as one of the ripple effects of climate change – as a consequence of the unequal gender division of labour in households and drought-induced water scarcity. The policing of *ukuthwala* is needed as climate change induced water shortages have worsened girl's vulnerability. Water collection is no longer seen as safe. Girls as young as 12 years old have been victims of *ukuthwala* with some reported to have contracted HIV.⁶

Female vulnerability is heightened due to the societal perception that certain household chores are gender specific. The girl child is expected to help with the household labour and maintenance. A link has also been made between poverty and *ukuthwala*, where families submit to this practice as a means of benefiting financially. Studies (Maluleke, 2012; Nkosi, 2009; van der Watt and Ovens, 2012) reveal that the criminal element of *ukuthwala* is heightened in poverty stricken families where girls are traded to older men

willing to pay *lobola* (bride price). The lack of safety at remote water collection points and the deepening poverty that results from climate change among other community stresses create conditions for the illegal abductions to continue unchecked. Concern about the safety of the environment has grown in recent years as girls walk longer distances in the search for water.⁷

Water scarcity and gender violence are seen as deepening existing problems, especially for fragile households which comprise children and the elderly. For example, it was reported that a family went without food for several days following the abduction of a teenage girl who had gone to fetch water from a river located some distance from her home. She had been responsible for taking care of her grandmother and younger siblings. After her abduction the family could not collect their social grants. The teenage girl had been responsible for organising the collection of the grants. A 54-year-old woman who works for a rural-based NGO drew attention to the story of the young girl being preyed upon while searching for water and its relationship to the crisis of widespread gender-based violence in South Africa. She raised the need for inculcating into young boys sets of values that contribute to achieving rural societies that are gender sensitive and that engender socially concerned responses to environmental change.

Women's responses and reactions: Agency and survival strategies

Rural women's potential role and contribution in sustainable development as agricultural producers is noted in the South African policy on climate change (DEA, 2011b).⁸ Yet, rural women's role in climate change and sustainable development have yet to get attention from government (Bornman *et al*, 2013).

Probing possible solutions to the climate change challenges that they faced, the women said they urge decision and policy-makers to take heed and build on the elements that drive individual and collective change in rural social practices. Adverse conditions created by climate change have led to women organising and learning skills to practice collective farming (see figure 2) in the Cofimvaba Nciba community of the EC. Their collective response to climate change is an example of the way in which women can scale up change processes that yield successful and sustainable community-based transformative action. Women from Harry Gwala District Municipality recalled how they had to come together to find solutions during the two years in which negative climate changes were felt the hardest, 2011 and 2013. Extreme weather conditions were experienced, such as flooding and heavy rains – conditions which made it difficult for villagers to work in the fields, both during winter and summer, resulting in minimal or no cultivation. One recalled:



Figure 2. A collective maize plantation in Nciba, Cofimvaba, cultivated by women who were trained in permaculture. Skills gained in maintaining a small garden were used in the plantation.

Source: Meyiwa *et al*

"We sat around and twiddled our fingers, not knowing how to provide for our families. The seasons were messed up during these two years – what was expected in terms of weather conditions never happened" (interview Richmond, January, 2014).

They were compelled to learn and teach each other ways of adapting; and they began to identify and plant seeds that are least sensitive to extreme weather conditions. They related that all the knowledge they had accumulated over many years - of when and how to grow and plant vegetables - was challenged by the recent unpredictable weather conditions. The rains came later than expected which meant late planting. As crops were damaged from extreme heat conditions, food security was threatened:

"Extreme weather changes...destabilises us – as all that we had invested goes down the drain. We lose a lot of money that has been hard-earned" (participant at Climate Change Adaptation workshop, Pietermaritzburg, January 2014)

Resourceful and resilient rural women contribute to uplifting their families and communities out of poverty through both paid and unpaid labour – with entrepreneurship, trade, on-farm labour, and through being the caretakers of children and the elderly. One woman, a single mother, proudly boasted that in spite of the difficulties of collective farming and adapting to changes in the weather, she had paid for her daughter's university education from the income she earns from farm produce:

"Ndinga funda nga nje mrandi yaku thirhoqo ukuba fundisa abama bantwana" (Although I did not receive formal schooling, I will never cease educating my children) (interview Cofimvaba, January 2014).

The women reported having to negotiate disparities in agricultural rates / prices. The disparities present a further challenge for women in translating their agriculture-based work into economic empowerment (Hill, 2011). Women complained that buyers (supermarkets) of their produce often pay them less relative to their male counterparts, and take longer to pay. The gendered nature of the economy, limited access to resources, and the family maintenance responsibilities, exacerbate the inequalities experienced by women in rural areas and impedes their ability to actively contribute

to climate change mitigation (Boetto and McKinnon, 2013).

Women are not merely victims of climate change; they also serve as active agents of change equipped with knowledge useful in climate change mitigation, disaster reduction and adaptation strategies (Pielke, 1998; Boetto and McKinnon, 2013). With the skills that women have in resource management they should be enabled to identify and undertake measures necessary for adaptation and mitigation responses. Despite the skills and knowledge women have acquired, they are not able to make such contributions because they are under-represented in decision-making on climate change. However, in the three villages, we have found that women often find it easy to organise themselves through *manyanos*,⁹ collaborative gardens and other commercial projects earmarked for raising tertiary education fees for their children. They share information on the ways to sustain their families during the times brought about by changed weather conditions.

Some of the women complained about broken lines of communication between themselves and the state. A group of Cofimvaba women who were working on beadwork which they sell to raise the proceeds needed for buying seeds for planting spoke in unison:

"Imibutho yopolitiko ibonakala gqitha xa kusondel' ivoti (Political parties become visible when voting approaches)" (interview Bholokodlela, October, 2013).

As a collective, at local level, women have proven to be resilient – drawing on, as well as engaging in indigenous practices and thereby exercising their customs to withstand the effects of environmental change. They share information on strategies that they have used to farm heat and drought-resilient vegetables, as well the importance of choosing certain kinds of crops. Cabbage, tomatoes and beans were cited as the best kinds of crops. Also cited was the practice of using moist cow dung and vegetable peels to increase the soil's organic content and moisture.

What women recommend

The *Profile* has noted the health effects of climate change experienced by women and girls who work on the land and who also have to walk further and further in the search for

water. The danger of abduction and rape to which girls are exposed as a result of growing water scarcity has also been highlighted as a problem. The women reported that heavier rains have contributed to worsening land degradation through erosion of the soil. Drought, water scarcity and higher temperatures have played havoc with their farming practices. Water scarcity has led some families to migrate to villages that are closer to more reliable sources of water. There was concern about not understanding the effects of climate change on the broader scale and they sought to identify solutions to deal with the changing weather patterns and to prevent food insecurity.

In two separate individual interviews with women from Bholokodlela, a village in Cofimvaba, EC, the women raised concerns about their lack of information about programmes seeking to empower and develop their capacity for climate change. Programmes targeting women and young girls are held in urban areas in the EC, such as East London and Queenstown, making it difficult for women in rural areas to attend and become informed. They see the involvement of rural women in climate change programmes as a priority.

We found that women from the rural municipalities of the eastern seaboard were engaging with the way in which problems related to climate and environmental changes could be approached. There was a call for finding ways of presenting a gender-sensitive agenda foregrounding the authorities' responsibilities to the poor, to the vulnerable, and to rural women and girls – and achieving skills and expertise in managing the effects of climate change. Further, there is a need to understand how climate change policy processes relate to the question of changing environments in rural contexts, particularly in relation to women. The question was posed around the pathways existing for influencing policy agendas and decision-making processes. Women see it as crucial to have accessible information on managing climate change, yet it was not clear how and where such information is located and may be accessed. In turn, given their shared experiences, they were eager to contribute towards developing and strengthening any existing knowledge base for environmental change. They enquired how the integration of women-produced, local, and indigenous knowledge could be used to accomplish effective solutions to climate and other processes of environmental change in rural communities more broadly.

Conclusion

Climate and environmental change confront rural communities with unprecedented challenges – but equally with opportunities. The effects are unavoidable and, although they impact on people everywhere, the poor and those in rural spaces are most severely affected. As climate and environmental changes are largely linked to human activities, no solution will emerge that is not based on some changes in human behaviour, attitude and lifestyles – of both the rural communities and the authorities. This *Profile* has demonstrated that it is crucial to have a strong focus on rural women, the worst affected who also provide for their families' needs. They are the custodians of families – as farmers, household managers, carers of children and the sick and elderly. For any solution to be sustainable it should address critical issues of gender inequality, poverty, and rurality. There are some fundamental human rights questions that have to be asked if attempts to address the climate challenges of changing rural environments are to lead to more effective, sustainable and equitable solutions. These include questions on:

- i) current and unfolding consequences of changing rural environments;
- ii) conditions and attitudes for change in negative traditional practices;
- iii) responsibilities and accountability; and
- iv) policy-making and decision-making.

These questions comprise the transformative cornerstones to begin engaging with a process of climate and gender justice among rural women that advances gender equity. They establish the central importance of social values and of accessible information on environmental changes. It becomes critical to ask what the government and established climate change structures can and must bring to the framing and development of concrete solutions. These questions could serve as a guide for understanding changing rural environments - as gendered social processes and spaces, embedded in social systems.

Notes

1. The research was conducted under the auspices of a research organisation and funded by the South African National Research Foundation and the Department of Science and Technology.

2. A larger proportion of females compared to males are more likely to be involved in water collection. As the distance increases, the likelihood of female responsibility for water collection increases. In rural EC and KZN it is black African households that mostly rely on off-site water sources. However, at national level lack of access to piped water inside household or on site decreased from 41.3% in 2001 to 28.4% in 2011 (StatsSA, 2012).
3. Relative to males, similar to water collection, women and girls are more likely to collect wood and dung. At national level the percentage of households using wood or dung as their main energy source for cooking decreased from 27.1% in 2001 to 16.9% in 2011. The percentage of black African households using wood and dung for fuel is highest, at 33.4% in 2001, decreasing to 20.8% in 2011 (StatsSA, 2012).
4. In particular the focus was on the rural villages of Cofimvaba and Bhlokodlela.
5. This municipality previously included Sisonke District Municipality and uThukela District.
6. Unpublished reports by Law Reform Commission (2014) and Commission for Gender Equality (2009).
7. A report by the Commission on Gender Equality (2009) found that 89 girls from Bergville and Loskop were afraid of becoming victims of the practice.
8. The policy under adaptation, agriculture and forestry notes that under-resourced small-scale and subsistence farmers are particularly vulnerable to the impacts of climate change. "Climate-resilient sectoral plans have the potential to directly address the plight of those most impacted by climate change – the rural poor" (DEA, 2011b:18).
9. *Manyano* is a generic term for women's church movement but it has been used to also refer to places where water or firewood is gathered. These places are regarded as 'safe forums' at which women 'let out' and initiate projects.

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THENJIWE MEYIWA is a research director in the Education and Skills Development unit of the Human Sciences Research Council (HSRC), South Africa, and an honorary professor at the Durban University of Technology, South Africa. Prior to joining the HSRC she was a Research Professor at Walter Sisulu University, a rural university in the Eastern Cape. She did her basic education schooling in eMahlongwa, a rural village south of Durban. Her areas of research interest include feminist theory, cultural constructions of gender, self-study, indigenous knowledges and the impact of HIV and AIDS on parenting. She is currently leading three rural-based research projects. Email: thenjiwemeyiwa@yahoo.com



THANDOKAZI MASETI was born and bred in a rural village in Engcobo in the Eastern Cape. She is a lecturer at the Department of Family Medicine, Witwatersrand University. She is a junior researcher in the Education and Skills Development unit at the Human Sciences Research Council (HSRC). She has a Master's degree in Research Psychology. Thando's research interest include: gender and development, African sexualities, culture and traditions of patriarchy and she is also currently researching and writing within the field of gender-based violence. These interests draw from work she has done in her Master's thesis on attitudes and beliefs toward lesbianism. Thando is registered as an Intern Research Psychologist with the Health Professions Council of South Africa (HPCSA). Email: thandokazim22@gmail.com



SIZANI NGUBANE founded the Rural Women's Movement (RWM) in KwaZulu-Natal in 1998, and under her leadership it has grown to a membership of approximately 50 000. Sizani has inspired thousands of rural women to become part of the Movement with a vision to assist women to improve their rural livelihood. Her stance has always been apolitical although she has pushed to have more women elected to decision-making bodies including local and national government. Part of the work she does is to train the rural women for such responsibilities. Members of the RWM are all reliant on land which offers a means of alleviating poverty, generating income and paying for education. Sizani is the eldest of five children from a very poor family that was deserted by their migrant-worker father. They frequently went to bed hungry and she left school at 15 to pay for the schooling of her three brothers and sister. That was when she vowed that she would be part of the "solution" when she grew up to bring about gender equality. Email: ruralwomensmovement@gmail.com



TEBELLO LETSEKHA hails from Mzimkhulu, a rural area between the Eastern Cape and KwaZulu-Natal provinces. She is a researcher in the Education and Skills Development (ESD) unit at the Human Sciences Research Council (HSRC). She holds a MA degree in Industrial and Economic Sociology from Rhodes University. Her Master's research, *Portrait of a Scholar: Ruth First the Teacher and Academic*, focused on the sociological works of South African scholar-activist Ruth First. She is a PhD candidate at Rhodes University. Her areas of research interest include curriculum development and transformation, educational policy and life history research. Email: tebello@gmail.com



CARINA NOMFUZO (DUNA) ROZANI comes from Lower Xhongorha, Baziya village in the outskirts of Mthatha. She is a librarian with a MA degree from Walter Sisulu University (WSU). She also holds a postgraduate diploma in education from the University of Port Elizabeth and BEd Hons from Rhodes University. She is currently involved in a study related to patterns of successful ageing among centenarians in the Joe Gqabi District Municipality, Eastern Cape, South Africa. She is a member of eZiko Writers Institute (eZWI), a team researching about issues of Indigenous Knowledge (IK-uLwazi IweMveli). Email: carinarozani@gmail.com