

**AN EXPLORATION OF OLDER PERSONS' EXPERIENCES OF DROUGHT  
AS REVEALED IN INDIGENOUS KNOWLEDGE PRACTICES**

Shingairai Chigeza

M.A. Research Psychology

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Potchefstroom Campus

Supervisor: Prof V. Roos

Co-supervisor: Dr D. Van Niekerk

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This article is dedicated to my children Tinotenda and Tadiwanashe and to all elderly people, especially those in Africa.

## SUMMARY

### **AN EXPLORATION OF OLDER PERSONS' EXPERIENCES OF DROUGHT AS REVEALED IN INDIGENOUS KNOWLEDGE PRACTICES**

**KEY WORDS:** Indigenous knowledge, drought, older persons, contextual embeddedness.

The majority of older persons struggle to survive drought challenges. Their financial position is very difficult and most of these older persons still depend on farming activities to sustain their livelihoods. This study explores older persons' experiences of drought and how they have been coping with the demanding challenges of drought, with specific focus on how indigenous knowledge (IK) became apparent in the way they responded to drought. No research has yet been done on how older people cope with drought in South Africa. IK is an important resource in dealing with the challenges associated with drought. It can be regarded as a way of regulating the survival of older persons' communities, because it is culturally and contextually embedded in the local tradition. IK also involves the knowledge and skills based on the experiences of individuals and of the community. A qualitative research design was the most appropriate for this study, because qualitative methods allow for the exploration of personal and communal meanings associated with a phenomenon, such as drought. A purposive sample consisting of 30 males and 45 females, who have been living in the area of study for 15 years or longer, was used in the study. The research was conducted in the Bophirima District in the Northwest Province. The Mmogo™ method, a culturally sensitive data gathering method which uses visual presentations to reflect the cultural meanings that are associated with the symbolic use of objects, was applied in the study. Participants were requested to create a visual presentation of their experiences of drought. Focus group discussions and observations were used to triangulate the data. Visual data was analysed on different levels and the textual data was analysed by means of thematic content analysis. The results indicated that the behaviour and IK practices displayed by older persons are

culturally and contextually embedded. This was revealed in the person-environment interactions, the coping skills and the mutual social support among the older persons in the community. The reciprocal interactions between the older persons and the environment are reflected in weather predictions and in the cultural and religious practices they displayed in the study. Collective experiences, empowerment and social support were contributory factors in coping with drought. The research suggests that IK is a valuable resource, which should be preserved as an important way of dealing with drought, and that it plays an essential part in providing older persons with opportunities to demonstrate their expertise and share their experiences. This contributes to their independence, promotes their self-confidence, and provides opportunities to take control of their future. IK can be a source of pride, and it can create a sense of ownership in all older persons. As the promotion of IK can also help to achieve long-term goals to cope with drought, further exploration of the use of IK is recommended. Further studies should concentrate more on older persons' reliance on IK in coping with drought, as displayed in different African countries. These different dynamics would provide insight into the use and importance of IK in dealing with drought.

## **OPSOMMING**

### **'N ONDERSOEK NA OUER PERSONE SE ERVARINGS VAN DROOGTE SOOS DIT BLYK UIT PRAKTYKE VAN INHEEMSE KENNIS**

**SLEUTELTERME:** Inheemse kennis, droogte, ouer persone, kontekstuele inworteling.

Die meeste ouer mense worstel om die uitdagings van droogtes te oorleef. Hulle finansiële posisie is benard en die meeste ouer mense is steeds afhanklik van boerdery-aktiwiteite om aan die lewe te bly. Hierdie studie ondersoek ouer mense se ervarings van droogte en hoe hulle cope met die uitdagings van droogte, met spesifieke fokus op hoe inheemse kennis (IK) manifesteer in die wyse waarop hulle reageer op droogte. Geen navorsing is nog gedoen oor hoe ouer mense met droogte cope in Suid-Afrika nie. IK is 'n belangrike hulpbron in die hantering van uitdagings wat gepaard gaan met droogte. Dit kan beskou word as 'n manier om die oorlewing van ouer mense se gemeenskappe te reguleer omdat dit kultrueel en kontekstueel gewortel is in die plaaslike tradisie. IK behels ook die kennis en vaardighede wat gegrond is op die ervarings van individue en die gemeenskap. 'n Kwalitatiewe navorsingsontwerp was die geskikste vir hierdie studie, omdat kwalitatiewe metodes dit moontlik maak om die persoonlike en gemeenskaplike betekenis te ondersoek wat gepaard gaan met 'n verskynsel, soos byvoorbeeld droogte. 'n Doelgerigte steekproef bestaande uit 30 mans en 45 vroue wat vir 15 jaar of langer in die studiegebied woonagtig is, is vir hierdie studie gebruik. Die navorsing is uitgevoer in die Bophirima-distrik van die Noordwesprovinsie. Die Mmogo™-metode, 'n kultureel sensitiewe data-insamelingsmetode wat visuele voorstellings gebruik wat die kulturele betekenis, wat geassosieer word met die simboliese gebruik van objekte, is in hierdie studie toegepas. Deelnemers is versoek om 'n visuele voorstelling van hulle ervarings van droogte te maak. Fokusgroepbesprekings en waarnemings is gebruik om die data te trianguleer. Visuele data is ontleed op verskillende vlakke en die tekstuele data is ontleed deur middel van tematiese inhoudsontleding. Die resultate toon aan dat die gedrag en IK-praktyke van ouer persone 'n kulturele en kontekstuele basis het. Dit het gemanifesteer in die mens-omgewinginteraksies, copingvaardighede

en die wedersydse sosiale ondersteuning van ouer persone aan mekaar in die gemeenskap. Die resiprokale interaksies tussen ouer persone en die omgewing manifesteer in weervoorspellings en in die kulturele en godsdienstige praktyke wat hulle in die studie getoon het. Kollektiewe ervarings, bemagtiging en sosiale ondersteuning was bydraende faktore om met droogte te cope. Hierdie navorsing bevind dat IK 'n waardevolle hulpbron is, wat behou moet word as 'n belangrike manier om droogte te hanteer, en dat dit noodsaaklik is om aan ouer mense die geleentheid te gee om hulle kundigheid te demonstreer en ervarings te deel. Dit bevorder hulle onafhanklikheid, selfvertroue en gee geleenthede waarin hulle beheer oor hulle eie toekoms kan neem. IK kan 'n bron van trots wees en dit kan 'n sin van eienaarskap skep vir alle ouer persone. Omdat die bevordering van IK ook kan help om langtermyn doelwitte te skep om met droogte te cope, word aanbeveel dat die gebruik van IK verder ondersoek word. Toekomstige studies behoort meer te konsentreer op ouer persone se ervarings met die gebruik van IK om met droogte te cope, soos dit in verskillende Afrika-lande aan die lig kom. Hierdie verskillende dinamiek sal insig lewer in die gebruik en belangrikheid van IK in die hantering van droogte.

## **PREFACE**

The candidate opted to propose an article, with the support of her supervisors.

Prof V. Roos

Dr D. van Niekerk

**CONSENT  
PERMISSION TO SUBMIT THIS ARTICLE FOR EXAMINATION  
PURPOSES**

I, the supervisor, hereby declare that the input and effort of S. Chigeza, in writing this article, reflects research done by her on this topic. I hereby grant permission that she may submit this article for examination purposes in partial fulfilment of the requirements for the degree Magister Artium in Research Psychology.

Signed on this day .....at the North-West University.

.....  
Prof V. Roos  
Supervisor

.....  
Dr D. Van Niekerk  
Co-Supervisor

## INTENDED JOURNAL AND GUIDELINES FOR AUTHORS

This dissertation will be submitted to the *Journal of Community and Applied Social Psychology* to be considered for publication. Attached please find a copy of the guidelines for prospective authors as set out by the journal

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- A. A typical citation of an entire work consists of the author's name and the year of publication.**

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**AN EXPLORATION OF OLDER PERSONS' EXPERIENCES OF DROUGHT  
AS REVEALED IN INDIGENOUS KNOWLEDGE PRACTICES**

S. Chigeza

Deo Gloria M/H2

Weyerstr 4

Baillie Park

Potchefstroom

Postal code 2531

E-mail: [schigeza72@yahoo.com](mailto:schigeza72@yahoo.com)

Prof V. Roos

School for Psychosocial Behavioural Sciences

Psychology

North-West University

Potchefstroom Campus

Postal code 2520

E-mail: [Vera.Roos@nwu.ac.za](mailto:Vera.Roos@nwu.ac.za)

Dr D. van Niekerk

African Centre for Disaster Studies

North-West University

Potchefstroom Campus

Postal code 2530

E-mail: [dewald.vanniekerk@nwu.ac.za](mailto:dewald.vanniekerk@nwu.ac.za)

\*To whom correspondence should be addressed

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S. Chigeza, V. Roos and D. Van Niekerk  
School for Psychosocial Behavioural Sciences  
Psychology  
North-West University  
Potchefstroom  
South Africa

**MANUSCRIPT FOR EXAMINATION**

# **AN EXPLORATION OF OLDER PERSONS' EXPERIENCES OF DROUGHT AS REVEALED IN INDIGENOUS KNOWLEDGE PRACTICES**

## **ABSTRACT**

Indigenous knowledge (IK) is an important resource in dealing with the challenges associated with drought. IK is regarded as the knowledge and skills based on the experiences of individuals and communities. This study explored older persons' (this refers to people of 60 years and older) experiences of drought, with a specific focus on how IK revealed itself in their dealing with drought. A qualitative research design was the most appropriate for this study because qualitative methods allow for the exploration of personal and communal meanings associated with a phenomenon, such as drought. A purposive sample consisting of 30 males and 45 females who have been living in the area of study for 15 years or longer was used in the study. The Mmogo™- method, a culturally-sensitive data gathering method which used visual presentations, reflecting the cultural meanings that are associated with the symbolic use of objects, was applied in this study. Focus group discussions and observations were used to triangulate the data. Visual data was analysed on different levels and the textual data was analysed by using thematic content analysis. The results of the study indicated that the behaviour and IK practices displayed by older persons are culturally and contextually embedded. This was revealed in the person-environment interactions, coping skills and the social support among older persons in the community. The reciprocal interaction between the older persons and the environment is reflected in the weather predictions, and the cultural and religion practices they displayed in this study. From the research it is suggested that IK is a valuable resource, which should be preserved as an important way of dealing with challenges due to drought. Furthermore, it is essential to provide older persons with opportunities to show their expertise and experiences. This contributes to their independence, helps to promote their self- confidence, and enables them to be in control of their future. IK can be a source of pride, and it can create a sense of ownership in all older persons.

**KEY WORDS:** Indigenous knowledge, drought, older persons, contextual embeddedness

## INTRODUCTION

Many older persons struggle to survive in drought situations, which are becoming worse each year (Hudson, 2002). For purpose of this study older persons are regarded as individuals older than 60 years of age. In certain areas in South Africa, and within certain populations, older people are regarded as a vulnerable group which contributes to the increased disaster risks that drought brings about. Only some of them receive retirement pension, they find themselves in remote areas, and their family structures have changed dramatically due to the effects of drought, HIV/AIDS and urban migration (Ntshangase, Duncan & Roos, 2007). Older persons often do not have extended support systems because most of the younger people migrate to urban areas in search of job opportunities, thus leaving older persons to take care of themselves, and very often their grandchildren (Van Niekerk & Roos, 2007). The financial position of older people is also very limited because most of the elderly are still dependent on farming activities to sustain their livelihoods, and these are the first economic areas to feel the impact of drought. Also, many older persons in South Africa have not been able to prepare for their retirement, because of the discriminatory policies of apartheid.

Since ancient times, drought has had far-reaching effects on humankind, by causing the failure of crops, decreasing natural vegetation, and depleting water supplies (Gracia & Escudero, 1986). The majority of people lose their lives, shelter, livestock and properties when faced with a drought. Bimal (1998) believes that drought victims are often obliged to borrow money and food, or sell their land and other belongings, thereby aggravating their situation.

Comprehensive research has been conducted about how people cope despite severely challenging circumstances. Existing research on how older people cope with drought in South Africa is, however, non-existent. This research is contextualised against older people in the African contexts. Traditionally people have used various practices to deal with difficult situations, such as rituals in which they consult the (sangomas) or witchdoctors for any problems they encounter (Mbiti, 1969). The beliefs that they have learnt from their forefathers help them to deal with different challenges in life, and also in coping with drought. Dalton, Elias and Wandersman (2001) also state that human beings survive the constraints or challenges of the environment using the resources in that particular environment

This research is contextualised within the understanding that, “human activity does not develop in a social vacuum, but rather that it is rigorously situated within a socio-historical and cultural context of meanings and relationships”(Trickett, 1996: p. 213), also called a community. A community in this instance is defined as people sharing similar or common values, beliefs, practices and cultures (Duncan, Bowman, Naidoo, Pillay & Roos, 2007). Blocher (1987) describes communities as complex human systems that depend on collective and co-operative efforts to achieve their objectives.

According to Visser (2007a), behaviour in community contexts can be understood according to four principles from the socio-ecological theory. These are interdependence, succession, adaptation and resources. Interdependence implies that there are multiple components in a social context which is interrelated, and which reciprocally influence other parts. This means that, in the case of drought, people in the community tend to rely on each other. Succession refers a systematic process of change to adapt to new situations. In this concept, adaptation refers to the process by which people cope with available or changing resources in their environment. Adaptation creates consciousness and acceptance of diversity in human behaviour (Visser, 2007a). Communities survive the challenges of the environment using resources in a particular environment. According to Duner and Nordstrom (2005), resources in older persons are: the active management of their circumstances; the taking of initiative in striving to maintain independence and control; and their ability to manoeuvre between available resources. Other resources that are created, defined and used by the community include social support, religion and spirituality, beliefs and psychosocial competences (Dalton et al., 2001), and the use of indigenous knowledge.

Probst, Raub and Romhard (1999) view indigenous knowledge (IK) as an important resource in dealing with daily problems, and according to them, it can make a significant difference or change in people’s lives, society or community. IK can be regarded as a way of regulating the survival of communities, which is in this instance a community of older persons applying various indigenous practices to deal with drought. Sillitoe, Bicker and Pottier (2002) describe IK as community-based, embedded in, and conditioned by, local tradition. Kaniki and Mphalele (2002) describe IK as creative thoughts and actions within a particular community to keep abreast of the ever-changing agri-ecological and socio-economic environment.

According to Behera and Nath (2005), IK is the sum total of the knowledge and skills that people in particular geographical area possess, enabling them to derive the most from their environment, based on the experiences of individuals and of the community. Du Toit (2005) suggests that IK is related to local communities' interactions with their environment, and also their knowledge stories, beliefs, rites, and rituals all of which have developed in interactions with that environment over a period of time.

IK is transferred through the sharing of experiences, as it assists older persons to build relationships that provide friendship, esteem and tangible support (Behera & Nath, 2005). This means that, because older persons share beliefs, values and strengths relating to their experiences of drought, future generations are helped to value these beliefs and knowledge that people have. Duncan, Ratele, Hook, Mkhize, Kiguwa and Collins (2004) explain that elders earn status in the community by virtue of the richness of their knowledge and experience.

The above discussion suggests that IK is embedded in cultural practices within a community. It follows then from the discussion that IK is regarded as a way in which older persons share their knowledge and those practices which are manifested in their dealing with drought. However, very little is known about how older people in a mainly agricultural community apply their IK in dealing with drought. The aim of the research was to explore older people's experiences of drought, and how IK revealed itself in their dealing with drought.

## **METHODOLOGY**

A qualitative design was the most appropriate method for this study as it gives older persons an opportunity to describe their experiences of drought freely. Klunklin and Greenwood (2006) define qualitative research as a method of investigation, which allows for more meaningful interactions and provides opportunities to explore the participants' contextually, embedded experiences. This method studies older persons in their natural setting, and the researcher is concerned with the meaning they attach to their social world (Pope & Mays, 2000). The Mmogo™ method and focus group discussions used as a method of data collection were both useful to the study.

## **RESEARCH CONTEXT**

Drought is one of the natural hazards that have a direct impact on communities that affect older persons' lives. The effect of drought is evident in communities long after the natural phenomenon has passed. To find a suitable geographical location for the research to be conducted, the researcher considered an area which was profoundly affected by drought. The Bophirima District Municipality, in the Northwest Province of South Africa, was chosen as the research context.

The areas of Kagisano and Tosca fall under the Bophirima district where this research was conducted. Recent observation indicates that drought has begun to occur more frequently in this area. Thus drought patterns have become erratic and unpredictable (Hudson, 2002). Rainfall averages in the Northwest Province decrease towards a westerly direction in the province, thus, the Bophirima District Municipality receives less rainfall than areas further east in the province (Hudson, 2002). The research was limited to the Kagisano municipality which experienced acute and intense periods of drought from 2002-2005.

The two communities of older persons affected by drought that were visited include Tosca and Ganyesa. Tosca is situated in a remote area, and most of the older persons in this community work on commercial farms to earn their day to day living. Ganyesa is located in a semi-urban area and the majority of older persons in this community have their own plots to plough for agricultural purposes.

The major effects of drought are the loss of life and livestock. Most of the older persons have lost their livestock because of hunger. There is also low yield of crops due to continuous drought. There are very few older persons who receive retirement pensions, and the majority are surviving on children's grants, which their grandchildren receive from the South African government. The older people also do not have proper accommodation or transport to ferry them to their nearest clinic or town. Most of the younger people in these communities have migrated to urban areas in search of jobs, leaving behind the older persons to take care of themselves and their grandchildren.

## **PARTICIPANTS**

A purposive sample consisting of 30 males and 45 female above the age of 60years who have been living in Tosca and Ganyesa area for 15 years or longer, was used in this research, as well as a younger group of 12 participants (aged 22-35 years), who reflected on their experiences of drought or on how they observed older people experiencing drought. The majority of the participants were Setswana-speaking and quite a few were able to communicate in Afrikaans. Most of these older persons have the responsibility of looking after their grandchildren.

## **PROCEDURE**

Contact was established with the Bophirima District Municipality after an initial literature study of drought in South Africa. The NGO- manager, who was responsible for drought relief grants in the drought disasters of 2004 and 2005, served as a gatekeeper between the communities and the researcher. The gatekeeper and community leaders informed community members of the proposed research and arranged meetings, dates and venues. The participants were informed about the nature, goal and duration of the research, and gave written informed consent. To those who did not understand English, a translator explained in their own language the procedures set out on the informed consent form. Firstly, the researcher established rapport with the participants, followed by applying the data gathering methods. Data was recorded using audiotapes and photographs were taken to ensure accuracy.

## **DATA GATHERING**

### **Mmogo<sup>TM</sup>-method**

The Mmogo<sup>TM</sup>-method is a symbolic interaction method used to interpret the action of human behaviour (Roos & Klopper, 2008). The action consists of a great many different activities that are performed by individuals in life as they deal with the succession of situations confronting them (Blumer, 1969). According to Roos and Klopper (2008), the Mmogo<sup>TM</sup>-method is based on visual constructions of participants depicting their relationships with their community, society and the social-cultural context. Blumer (1969) believes that symbolic interactionism is grounded on root images. This explains that the practices or behaviour displayed by people are based on

the context and culture in which they occur. In support of this Benzies and Allen (2001) emphasise that culturally embedded symbolism emerges as a reflection of experiences and socially constructed meanings in a particular context. In this research the Mmogo<sup>TM</sup>-method assisted the researcher to engage actively with the participants being researched, and to view things from their point of view and study their perceptions and experience in their natural context.

The Mmogo<sup>TM</sup>-method involves the use of familiar cultural items such as brownish modelling clay, dried grass stalks, colourful beads or buttons needles and cloths. The cultural items were familiar to the older persons who participated in the research conducted, since it was observed that many of these items were part of the environment in which the research was conducted.

### **Procedure applied using the Mmogo<sup>TM</sup>-method**

The older persons were divided into groups of eight to ten allow them to interact with each other. After forming the various groups, the researcher asked the participants to make visual presentations using the materials following the open-ended request:

*Could you please make a visual presentation of your experiences of drought?*

After completion of the visual presentations by the participants, the researcher went round the group and asked about the relevance of each object made to the research question. Lastly the researcher and the whole group were engaged in detailed discussions about their presentations. The group spontaneously engaged in focus group discussions. All the data was captured using audiotapes, and visual presentations were photographed and analysed for further meanings.

### **FOCUS GROUP DISCUSSIONS**

Babbie (2007) describes focus groups as a socially orientated research method capturing real life data in a social environment. This data has high face validity, flexible and is low in cost. In this research focus group discussions were used to obtain more information after the Mmogo<sup>TM</sup>-method had been applied. The focus group discussions motivated the participants to give more information, because the participants were of the same age and shared the same experiences of drought. The

groups which participated in the Mmogo<sup>TM</sup>-method engaged in focus group discussions.

## **OBSERVATIONS**

Observations can lead to deeper understanding because they provide knowledge of the context in which events occur, and may enable the researcher to see things that older persons are not aware of, or that they are unwilling to discuss (Gay, Mills & Airasian, 2006). In this research observations were used in order to describe the settings of the two different communities Tosca and Ganyesa. All the participants were observed in this study. Their body language when expressing their feelings, emotions, and the way the older people relate to each other as a community, were observed. The researcher also observed the differences apparent in the models made by the older persons in Tosca and Ganyesa representing drought experiences using the Mmogo<sup>TM</sup>-method.

## **DATA ANALYSIS**

### Visual data

The visual data were analysed in the way suggested by Roos and Klopper (2008).

- Step 1: Ask participants about each object that was made to determine the literal meaning of each object.
- Step 2: Determine the relationships between the different objects in the visual presentations.
- Step 3: Apply the visual presentations to the specific research question that was asked to provide insight into the phenomenon being studied.
- Step 4: Explore the cultural meanings that are manifested in the symbolic use of objects.



**Photo 1:** Example of a visual presentation

The picture above is an example of the visual presentation. The visual presentation projects the relationship between the photo and what the older persons experienced in drought. The picture represents a house which was destroyed during drought. In front of the house is a child who is starving because of the hunger resulting from the drought. The relationship of the objects in the above visual presentation is that drought has caused many older persons to be homeless and to starve of hunger. For example houses are made of clay and due to drought, the houses collapsed leaving only the wooden structures remaining. The resources in this community are depleted, leaving people vulnerable and unable to take care of their loved ones.

### **Textual data**

Data was analysed through thematic content analysis. Thematic content analysis is a coherent way of organising the research data in relation to the specific research question (Burman, 1994). Several important topics were identified and put into themes, which were organised into main and sub-themes. These themes were defined, illustrated and integrated with quotes and representations.

## VERIFICATION AND TRUSTWORTHINESS

To ensure the trustworthiness of the research, various methods were applied and are discussed following Guba's model (Krefting, 1991) in the table below.

**Table 1:** Trustworthiness of the study

<b>Strategy</b>	<b>Criteria</b>	<b>Application</b>
<b>Credibility</b>	<p><b>Triangulation</b></p> <p>This refers to the use of a variety of data and theories in the same research to facilitate richer and potentially more valid interpretations (Tindall, 1994; Tuckett, 2005). Triangulation can show how multiple but different qualitative data might simultaneously be true, when separate pieces of information lead to the same conclusion.</p>	<p>In this research different methods of collecting data were used, for example focus group discussions, observations, the Mmogo™-method and literature.</p>
	<p><b>Prolonged field experience and exposure to the field of study.</b></p>	<p>This research took a week in the field of study thereby allowing the participants to explore their experiences on drought fully. This also encouraged the establishment of rapport between the researcher and the participants. Furthermore, the researcher engaged with the data over a two-year period.</p>
	<p><b>Structural coherence</b></p> <p>This is a process of ensuring data integration is done in a logical and holistic report (Krefting, 1991).</p>	<p>Throughout the research process, the researcher maintained a psychological mind of ensuring the integration of data into a logical holistic report. A literature control was conducted to account for contradicting experiences of the same phenomenon.</p>

	<p><b>Member checking</b></p> <p>To ensure credibility, the research has taken into account all the complexities in the study being conducted, and several participants in the study addressed problems that are not easily explained (Shenton, 2004).</p>	<p>The data was analysed by various researchers and consensus was obtained.</p>
<b>Transferability</b>	<p><b>Dense description</b></p> <p>This refers to information including the research contexts and different perspectives from the participants. (Shenton, 2004; Tuckett, 2005). A rich description of the data contributes to scientific knowledge and gives an in-depth understanding of the data. The description of the data is supported by relevant quotations, and literature is used in this research.</p>	<p>The inductive approach of symbolic presentations to explain the older persons' experiences on drought added the dense description of data.</p> <p>The photographs of visual presentations ensured to a better understanding and expression of specific cultural rituals, which would have potentially not been accessible. The researcher also kept personal logs and field notes for future references. Participants' actual words were provided to support the findings of the data.</p>
	<p><b>Nominated sample</b></p>	<p>In this research purposive sampling was used. 30 males and 45 females above the age of 60 years, and who had experienced drought for 15 years or longer were chosen as participants.</p>
<b>Dependability</b>	<p><b>Audit trail</b></p> <p>This is a process that allows an external auditor to examine the procedure of data collection, analysis and interpretation.</p>	<p>The researcher kept a journal log book to record the field notes. This was done to record every event of the research process.</p>

<b>Confirmability</b>	<b>Reflexivity</b> To be able to reflect on the personal and institutional attributes that impact on people who engage with other people, one must be aware of the complex cluster of personal attributes (Mkhize, 2004).	Field notes were made during the process of collecting data. These notes assisted the researcher to keep track of the influence, assumptions or biases relating to the research study being conducted.
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### **ETHICAL ASPECTS**

This research was part of a larger project, “An exploration of enabling contexts (05K14),” for which ethical approval was obtained from the Ethics Committee of the North-West University, Potchefstroom Campus. Permission to conduct the study was obtained from the local municipalities of Molopo and Kagisano which fall under the Bopirima District Municipality. The traditional leaders and the individual participants were informed of the proposed study. Informed consent was obtained from the participants in writing; participants were also assured that their information would be strictly confidential. Participants in the research were asked to participate voluntarily and were able to withdraw from the study at any point if they chose to (Welfer, 2002).

### **FINDINGS OF THE STUDY**

This studies forms part of a larger research project, and a complete report can be accessed at <http://acds.co.za/images/jamba/revisedhtavera21June07.pdf>, but, for the purpose of this research, older persons experiences of drought with a specific focus on indigenous knowledge are recorded. In the following discussion the themes that emerged from the data are discussed and triangulated with appropriate literature. The table below shows the main themes and sub-themes relating to how the older persons apply their indigenous knowledge in their experiences of drought.

**Table 2:** Identified themes and sub- themes

<b>MAIN THEMES</b>	<b>SUB-THEMES</b>
<b>Person-environment interactions</b>	<ul style="list-style-type: none"><li>• Weather predictions</li><li>• Stockpiling and animal grazing</li><li>• Vegetation and water conservation</li><li>• Medicinal products</li></ul>
<b>Coping</b>	<ul style="list-style-type: none"><li>• Religion and cultural beliefs</li></ul>
<b>Community support</b>	<ul style="list-style-type: none"><li>• Entrepreneurial enterprises</li><li>• Support in transport</li><li>• Sharing food and resources</li></ul>

In the next section the identified themes will be discussed and supported by verbatim quotes. The findings were triangulated with literature appropriate to the study.

### **Person-environment interactions**

From the sociological perspective, individuals and the environment complement each other. This explains the reciprocal interactions between the settings that surround them (Duffy & Wong, 1996). The reciprocal interactions are revealed through the weather predictions and agricultural practices and the different patterns of engagement displayed by older persons. Traditional agricultural practices are regarded as indigenous knowledge and perspectives based on locally developed practices related to the use of resources (Berkes, Colding & Folke, 2000). Traditional agricultural practices are not universal; one has to belong to a particular community in order to assimilate the traditional agricultural practices followed in that community. These agricultural practices include land tillage, rotation of grazing cattle, use of pesticides, vegetation and water conservation, and medicinal products. Below are some of the examples of the person-environment interactions due to drought.

### **Weather Predictions**

The importance of climate in the daily lives of the older persons is shown in the wealth of IK based on predicting weather and climate. Through IK information about climate and weather can be gathered, predicted and interpreted in relation to locally

bound observations, experiences shared, animals, stars, wind patterns and social events. In this study the older persons applied their knowledge of changing seasons, the lunar cycle and the stars in order to determine seasonal patterns. The shape and the location of the moon were mentioned as an early warning sign of drought. They further explained that they consulted different weather patterns in order to determine the possibility of drought. One of the participants referred to a constellation called “*the seven stars*” as an example of drought warning. Besides weather patterns, the older persons also indicated that they consulted their natural environment and animal behaviour in order to determine possible weather patterns. Some examples of this appear below.

*If the wind blows from the south, we know that we will be receiving rain because the rain comes from the south, but if the wind is blowing from the west, then it will be a drought year.*

*If the moon is upside down, we know that we will have a drought year.*

*The old people (ancestors) told us how to look at the different clouds and stars in order to determine whether we will be facing drought.*

*We have to look at the stars and if they are not going the way they should be, then we know it will be a wrong year.*

*We look at our animals and if they mate, then we know it will be a good year.*

*There is a specific bird called the water bird. If we see this bird in a specific area then we know we will receive rain.*

The above weather predictions were done mainly for agricultural purposes. The weather predictions helped the older people to know whether they would receive rainfall or not for that particular year. It also assisted them to know the type of crop to be planted, for example whether to plant drought-tolerant crops only, or any other kind of crop.

### **Stockpiling and animal grazing**

Stockpiling was the method used by older persons to reduce the spread of diseases to other livestock by killing the affected animals. They also used a variety of methods to preserve food. IK is the wisdom held and shared by people in their community and is disseminated from generation to generation (Magoro & Masoga, 2005). This is evident in the use of stockpiling. As the community continued to lose two to three

animals every year due to diseases caused by drought, they introduced stockpiling and food preservation. The older persons used drying as a method of food preservation; they dried vegetables, fruits, and meat and thus stockpiled for future consumption.

*We learnt from our fathers that we need to stockpile for future eventualities like drought.*

The bartering of foodstuffs for livestock also occurs. If the conditions of drought were unbearable they would reduce the size of their herds by getting rid of the older and sick animals first. These animals were used for exchange purposes.

According to Behera and Nath (2005) IK is the sumtotal of the knowledge and skills that people in particular geographical area possess, enabling them to get the best out of their environment, based on the experience of individuals or the community. Due to continuous drought, the older persons started to experience overgrazing so they employed another strategy of rotating grazing camps to mitigate the effects of drought. The traditional leaders of the communal area affected by drought would go and request permission from neighbouring tribes that had not been hard hit by drought for their livestock to graze on those other pastures. The affected tribes would continually move their herds around in order to limit overgrazing on the already limited grazing pastures. Neighbouring tribes would agree to the request because that they might need future assistance as well. The older persons also used the traditional pesticides, as they could not afford to buy modern pesticides so they burnt fields to kill worms and larvae that could infect livestock. This knowledge and skills in turn assisted them in improving the fertility of their soil.

### **Vegetation and water conservation**

Vegetation is the sum of vegetable life or plants in general, and water conservation is a way of preserving water. Vegetation and water conservation both help in the restoration of the natural environment. Older persons displayed a variety of methods to protect their crops and storing of water to preserve their natural environment, for example they believed that cutting down a mukala tree is a taboo. This reduction in cutting down trees contributes significantly towards ensuring the long-term sustainability of resources, and limiting environmental degradation, which translates into conservation of vegetation. For conserving water the older persons eradicated

alien bushes and plants. They believed that by destroying unfamiliar bushes and plants they would conserve water.

Older persons moulded different kitchen utensils for cooking and storing water. Big clay pots were used to store the water received during rainfall, or for fetching water. Kaniki and Mphalele (2002) describe IK as creative thoughts and actions within a particular community in an eco-system generated to keep abreast of the ever-changing agri-ecological and socio-economic environment.



**Photo 2: Clay pots**

The picture shows the kitchen utensils used for cooking and storing water.

### **Medicinal products**

IK can be knowledge of medicines, the environment, traditional recipes or anything that is important to the community (Magoro & Masoga, 2005). Due to financial problems, the older persons decided to prepare medicine and food for themselves using traditional recipes. They harvested natural plants materials for medicinal purposes; examples are “*duiwelskou*” and *wildsilk* to ensure survival of their livestock. To prepare the feed for these livestock they used natural resources for example, “*Vaalbos, Trassiebos, Motopi seeds, and Turksvy*” grounded and mixed with salt and bone meal. This strengthens the animals that in turn provide food for people.

### **Coping**

Traditional and religious practices play an essential part in the background of many African people. Mbiti (1969) describes traditional religious practices as beliefs, ceremonies and rituals, which are held or observed, by families and communities.

These traditions have been handed down from forebears, and each generation integrates these, after modifying them to suit historical situations and needs (Mbiti, 1969). This explains why traditional religions vary according to the society or community, as each has its own traditional religion system. In this research older persons have displayed various cultural and religious beliefs which psychologically helped them to cope with drought.

### **Religion and cultural beliefs**

Religious and cultural beliefs have played a significant role in everyday activities of older persons. Du Toit (2005) describes IK as related to local communities' interactions with their environment and knowledge, stories, beliefs, rituals developed in interaction with that environment over a period of time. This is revealed in the religious and cultural beliefs that the older people shared as a community in trying to cope with drought. Older persons who were Christians prayed for the rain. Religion assisted the older people to experience feelings of comfort and strength. Duffy and Wong (2000) also believe that sharing experiences, history and beliefs helps people to experience emotional connections. The beliefs, religion, experiences and the rituals they performed in order for them to receive rainfall helped the older persons to establish an emotional connection among themselves. One older person said:

*Everything is in the hands of God, and we continue to pray for rain.*

It was also interesting to note that there is a mix between traditional Christian beliefs and ancestral beliefs

*The captain (tribal leader) will call all the different churches together and we pray for help from God.*

*The captain called the Barutis (elders) so that we can talk and see how we can make a plan. We have to slaughter a black cow and pray, because the captain also calls the traditional healers to throw the dolosse (bones) to tell us what is wrong.*

*I have to look at my old legs. In the past when the rainy season was approaching, my legs used to swell. This is happening less often and this year I have no problems with my legs, which indicates that the rain is staying away.*

The community also shared traditional beliefs about rain: for example that it would rain if all priests in the village were to pray together in the early morning.

*If young children walk with buckets of water and throw the water in the air while shouting pula (rain), sometimes that very day we receive rainfall.*

They said that this knowledge helped them to know the exact season for planting the crops. Community members are not allowed to cut a certain tree called (mukala). There is a belief that cutting down such kind of trees causes drought.

Another cultural belief is related to the initiation of boys and girls into manhood and womanhood respectively. This is a traditional way of educating their children about the beliefs of their community, self-respect and respect for others (particularly older persons). During this initiation school learners are made aware of the environment. However there is a belief attached to the change of season in attending the school of initiation. The older persons believe that this change also causes drought, as their ancestors are not pleased.

*Traditionally these boys and girls are supposed to go for the school of initiation in June and July winter season but they now go in summer, October and November.*

### **Community support**

Duncan et al., (2004) describe a sense of community as that which exists if people mutually recognise the obligation to be responsive to one another's needs. This means that there is collective relationship, rather than an individualistic relationship between members of the community. In a traditional society every member of the community is part of the family, irrespective of the actual genetic relationship. This sense of belonging carries with it a dynamism, or dance of harmony, because everyone who belongs is continuously moving, adjusting to the rhythm of life within the community (Ogbonnaya, 1994). This spirit of "we-ness" and sense of belonging in the community motivated the older persons to work together as a community (Duffy & Wong, 1996). They supported each other, shared their knowledge, resources and food collectively. These aspects are reflected in the sub-themes below.

### **Entrepreneurial enterprises**

Entrepreneurial enterprises are small businesses which were formed by the older women of the communities after facing many challenges due to persistent drought. According to the World Bank (1998), IK helps people with common experience and challenges unite and share their knowledge, skills, and the process inevitably

mobilises enthusiasm and ideas. The older persons started rearing chickens to sell. They sold both eggs and chickens to nearby shops as well as to the villagers of the same community. They grew vegetables for food consumption and sell. The elderly women were also engaged in stockvels (saving schemes) and burial societies. For example, one of the participants said:

*Because of continuous drought we have formed women's club where we share ideas on how we can sustain our families, then we thought of starting these small projects. We also thought of saving our money through money lending and lending money to each other. The burial society is also helping us a lot as you all know that death comes without warning.*

### **Support in transport**

To alleviate the problem of transport, the older persons made use of the horses, donkeys and cattle that survived in the drought. They also used scotch carts to transport them to nearby services. The donkey carts are the common mode of transport because of transport problem in the community. These scotch carts are made in such a way that they are comfortable to travel in even over long distance. The scotch-carts have number plates just like any registered vehicle. This means that IK is dynamic and is constantly being adapted to the changing environment of each community and will remain current as long as people use it (Behera & Nath, 2005).



**Photo 3: Mode of transport**

The picture above shows how the new technology has been applied to invent new scotch-carts as a mode of transport.

*Valuable information that can be useful to the community sometimes reaches us late, and there are no ambulances to transport us to the hospital, so these scotch carts are very helpful.*

**Sharing food and resources**

IK appears to unite people in the community in terms of sharing which is often collective rather than individualistic (Higgs & Van Niekerk, 2002). This is evident in the sharing of food and resources. The older persons shared quite a number of things, which assisted them to cope with the impact of drought. They shared their knowledge of growing drought resistant crops, which was one of the collective experiences, which contributed to their survival, as they all depended on farming. Sometimes the older people would exchange labour for food as a way of helping one another. On the

other hand some of the older persons would just help one another without expecting anything in return. For example, one of the participants owned a horse that he used to fetch resources for himself and others from places that were too far to travel on foot. He also used his horse to transport members of the community to nearby clinics if they were sick.

*If you had something you would help another person, because tomorrow it might be you.*

They even shared the food they had.

*If your neighbour asks for mealies (corn/maize), we share, even if tomorrow you do not have enough food for your family.*

The older persons in this community show that they truly care for one another and they use their talents to benefit the collective not just self.

## **DISCUSSION OF FINDINGS**

This research explored older persons' experiences of drought as revealed in IK practices. This research contributes to the understanding that human behaviour is embedded in the socio-cultural context in which it occurs (Dalton et al., 2001; Roos & Klopper, 2008). This implies that the behaviour and practices displayed by older persons in dealing with drought, in this research, are based on their culture and context.

This is reflected in the way that older persons described IK practices to survive the challenges of drought. The challenges of drought motivated the older persons to believe that they could gain the best out of the environment through the use of IK and resources available in their community. The experiences of drought brought a change in the lives of the older persons, as they were able to adapt and utilise with the available resources in their environment. IK is necessary to cope with daily problems, and it can make a significant difference or change to the individual, community and society (Probst et al., 1999). Kleine (1991) describes successful copers as people who use life challenges as an opportunity for personal growth, and take responsibility of finding solutions to their problems. In this study older persons shared resources including social support, religion and cultural beliefs, as well as psychosocial competencies. These resources were successfully utilised as the older persons shared similar or common values, beliefs and cultural practices as a community. Duner and

Nordstrom (2005) believe that older persons who actively manage their circumstances take the initiative in striving to maintain independence and control; they understand their needs and always manoeuvre between available resources.

Social support from others often assists individuals in finding a number of coping skills to reduce stressful events (Duff & Wong, 1996). In this research social support is one of the factors which contributed in assisting the older persons to cope with drought. According to Dalton et al., (2001) social, emotional, cognitive and behavioural processes that occur within interpersonal relationships promote adaptive coping. This was displayed in the way they revealed IK through their traditional agricultural practices. There is also a great deal of interdependence among older people which helps them to conserve resources to solve problems and enhance development to benefit the community as a whole. This finding is supported by Trickett, Kelly and Vincent (1985). Older persons relied on each other to survive the hardships of drought. Blocher (1987) describes communities as complex human systems that depend on collective and co-operative efforts to achieve their objectives. In the findings this is reflected in the way that they exchanged labour for food and also in their method of rotating grazing lands.

Collectivism is another factor which helps older persons to deal with drought. This is revealed in the way they shared knowledge on farming drought-tolerant crops, engaging in stockvels, and the burial societies which they formed as a community, which illustrated the strong relationships between older persons in this community. Collectivism values a person's belongingness and participation in his or social or cultural milieu (Peltzer & Ebigo, 1989). Working together as a community assisted the older persons to achieve their goals of dealing with drought. "I am because we are, and since we are, therefore I am" (Mbiti, 1969: p. 214). This explains that to gain knowledge and be successful in life, one has to participate in a dynamic process involving interaction between part and whole (Duncan et al., 2004). Collective learning transmitted inherited knowledge that led the older persons to be innovative and creative in dealing with drought (Kok, 2005).

An empowered person is an individual who believes that he or she has the ability to perform a certain task and this belief is accompanied by competent behaviour (Ashcroft, cited in Visser, 2007b). Zimmerman (1995) also states that empowerment helps people to gain control over their own lives, and links proactive behaviours to

social policy and social change. By using IK, older persons want to challenge the assumption that outsiders have the right to impose, and to promote an appreciation of IK. In this research most of the older persons shared the same sentiments that:

*The government and municipalities do not include us in decision-making, or even value our expertise and skills. We are regarded as helpless people who can only wait for the 'aid' to survive the hardships of drought.*

The above statement reveals that the older persons are not happy with the way society stereotypes them. Through the use of IK, they want to prove that they can find ways of surviving the hardships of drought instead of waiting for 'aid'.

From the findings of the study, the traditional beliefs appear to be of great importance to older persons. In support of this Trickett (1996) states that human activity does not develop in a social vacuum, but is rather rigorously situated within a socio-historical and cultural context of meanings and relationships. This is reflected in the way older persons predict the weather and send their children to the school of initiation, where the latter are taught to respect elders and value their traditions. Visser (2007) believes that Africaness emphasises a relational way of being, where relationships with others are not only recognized, but valued. This is because people in an African context are motivated by what they believe, and what they believe springs from what they do and experience (Roos & Klopper, 2008).

Through this study the older persons conveyed a message that IK can be a source of pride and ownership to local beneficiaries in development efforts. They wish to instil IK in younger generations. The older persons feel that a vast amount of IK is being lost through lack of transfer to youth. An African proverb by Grenier (1998) states that, when a knowledgeable old person dies, the whole library disappears. This means that, if the older persons die without imparting this IK to the younger generation, important information is lost. Hoppers (2002) also believes that IK represents both national heritage and national resources that should be protected, promoted, developed and put at the service of the present and succeeding generations. Older persons earn status in the community by virtue of their richness of knowledge and experiences (Duncan et al., 2004).

## **LIMITATIONS AND RECOMMENDATIONS**

A wider variety of approaches could have given the researcher an opportunity to gain more knowledge on IK practices, therefore, following an ethnographic approach is recommended for future studies. This is important as IK is the key element to the social capital of the poor, and the main asset to invest in the struggle for survival to produce food and shelter (World Bank, 1999). It is recommended that the government should assist in building IK centres where local people in the community can come together and share this knowledge from time to time. Promoting IK can help to achieve long-term goals in coping with drought. World Bank (1998) also states that IK practices could help to integrate global technologies to solve the problems facing local communities in the developing countries.

The inclusion of other provinces in South Africa, as well as other African countries, could broaden the scope of the study. Further studies should concentrate more on older persons' experiences when using IK to cope with drought as displayed by different African countries. This would provide insight into different dynamics on the use and importance of IK as way of reducing the impact of drought.

## **CONCLUSION**

It is important to understand that IK is based on the innumerable experiences that people undergo in their course of their lives. This allows them to control their future, and strive towards achieving improvements in their circumstances. Therefore giving older persons the opportunity to display their expertise and experience of IK helps them to be independent, and to be in control of their lives. The use of IK can be a source of pride to all older persons: they will know that they are able to find solutions to their problems, and it will increase confidence and self-esteem in them. IK creates a sense of ownership that may have an enduring impact on relations between older persons.

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