UTILISING PARTICIPATORY REFLECTION AND ACTION TO FACILITATE RABIES CONTROL IN A RURAL COMMUNITY

by

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DECLARATION

I, Ilsemarie (Quixi) Sonntag, student number u02360667, hereby declare that this dissertation titled **UTILISING PARTICIPATORY REFLECTION AND ACTION TO FACILITATE RABIES CONTROL IN A RURAL COMMUNITY** and submitted in accordance with the requirements for the M.Ed. (Learning support, Guidance and Counselling) degree at the University of Pretoria, is my own original work and has not previously been submitted to any other institution of higher learning. All sources cited or quoted in this dissertation are indicated and acknowledged, and captured in a comprehensive list of references.

Signature: 

Date: 9 September 2018

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TO WHOM IT MAY CONCERN

I, the undersigned, hereby declare that the master's dissertation titled **UTILISING PARTICIPATORY REFLECTION AND ACTION TO FACILITATE RABIES CONTROL IN A RURAL COMMUNITY** by **Ilsemarie (Quixi) Sonntag** has been edited for grammar errors. It remains the responsibility of the candidate to effect the recommended changes.

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ABSTRACT

The purpose of this study was to investigate the utilisation of participatory reflection and action (PRA) to facilitate rabies control in a rural community in South Africa. PRA is a collaborative engagement methodological approach that aims to enable communities to take ownership of and responsibility for addressing challenges by identifying and mobilising existing and available assets and resources within a community. As such, the study aimed to enable eight community members (the participants) to plan and implement a rabies awareness and action programme in the specific community.

I purposefully selected the eight participants who contributed to seven PRA sessions over a period of 11 months. I utilised an instrumental case study design for this qualitative study which was guided by PRA principles, and informed by empowerment theory. For data generation and documentation, I relied on PRA-based activities and discussions, informal conversations, audio-visual recordings of group discussions, photographs, field notes and a research journal. Data were analysed utilising thematic inductive analysis.

Findings indicate that rabies awareness was initially not a priority for the participants, due to more pressing socio-economic issues and limited existing knowledge of human and animal diseases and rabies in particular. In addition, participants were initially hesitant to contribute due to power dynamics, group dynamics and language barriers. Cultural beliefs and superstitions presented additional barriers to learning about rabies. Over time, however, participants' self-confidence grew and rabies control was brought to the fore. Participants were subsequently able to identify and mobilise personal and community strengths and assets, resulting in the execution of a community rabies awareness project. Towards the end of the study, participants felt empowered, particularly with regard to speaking English, and sharing their views. Their attitudes towards dogs changed from one of indifference towards having empathy. Participants were also successful in disseminating the message of rabies control within their community. As such, findings of this study indicate that trust and confidence built through repeated

participatory engagements can result in changed perceptions and actions. PRA therefore offers a feasible methodology for recognising and mobilising strengths and capacities in communities, in order to provide guidance and support in resource-poor communities – also within the field of veterinary community engagement.

KEY WORDS

- Attitudes to dogs
- Asset-based approach
- Dogs
- Empowerment
- One Health
- Participatory reflection and action (PRA)
- Rabies control
- Rabies education
- Rural community
- Strengths-focused approach
- Veterinary community engagement

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LIST OF ABBREVIATIONS

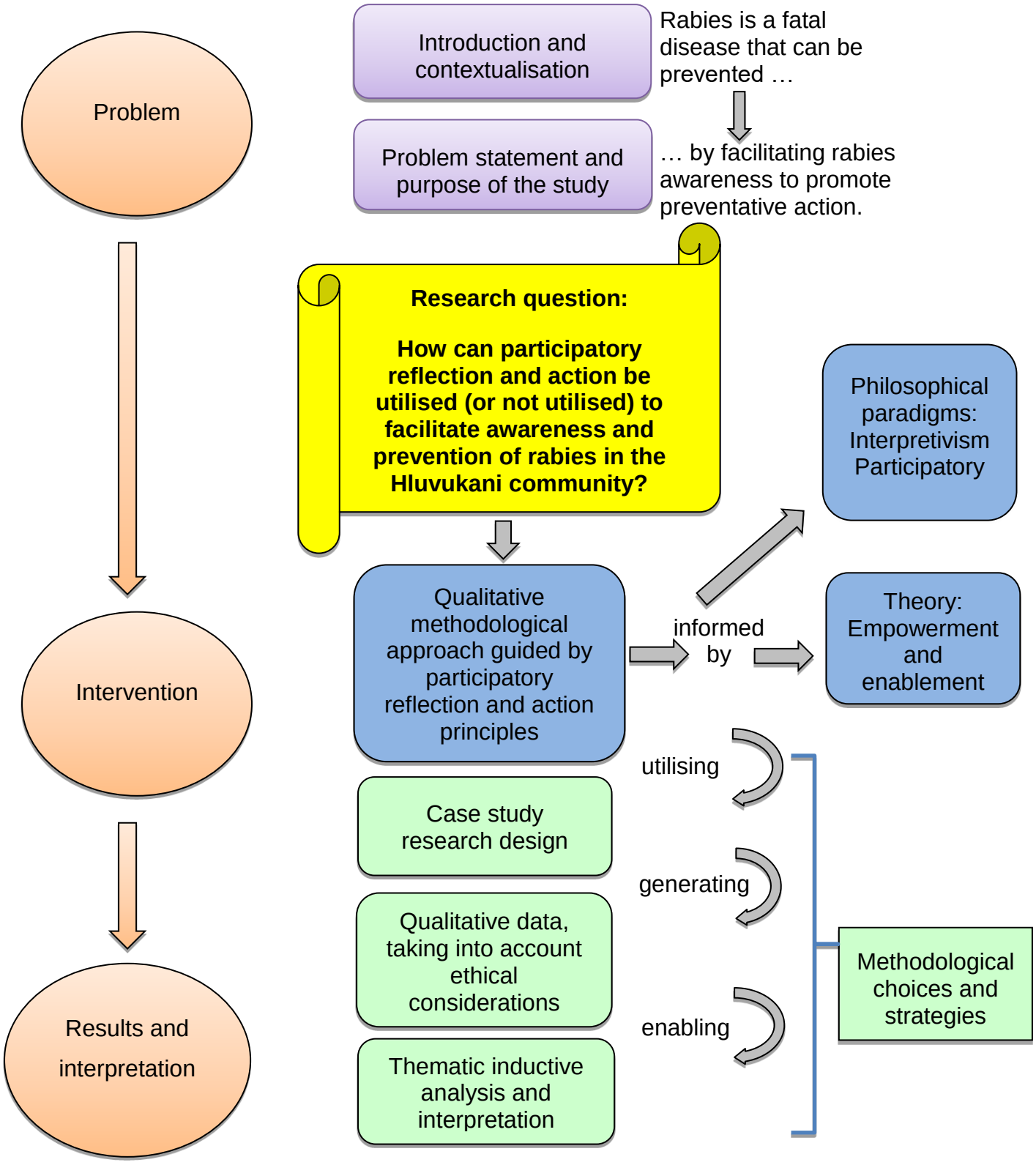
ABCD	Asset-based community development
AHTs	Animal health technicians
ASL	Academic service-learning
CAHW	Community animal health worker
CCE	Curricular community engagement
CCS	Compulsory community service
CDF	Community Development Forum
CDI	Community-driven interventions
CVC	Community Veterinary Clinics
DAFF	Department of Agriculture, Forestry and Fisheries
DBP	Dog bite prevention
FAO	Food and Agriculture Organisation
FVS	Faculty of Veterinary Science
GARC	Global Alliance for Rabies Control
H:D	Humans to dogs
HHWRS	Hans Hoheisen Wildlife Research Centre
HRF	Hluvukani Rabies Fighters
KAP	Knowledge, attitudes and practices
MCP	Mnisi Community Project
NICD	National Institute for Communicable Diseases
NTDs	Neglected tropical diseases
OIE	Organisation/Office International des Epizooties
PEP	Post-exposure prophylaxis
PAR	Participatory action research

PRA	Participatory reflection and action
PrEP	Pre-exposure prophylaxis
RABV	Rabies virus
REC	Rabies Educator Certificate
RIG	Rabies immunoglobulin
RRA	Rapid rural appraisal
SAVA	South African Veterinary Association
STAR	Supportive Teacher, Assets and Resilience
VPL	Veterinary Professional Life
WHO	World Health Organisation

CHAPTER 1

INTRODUCTION AND BACKGROUND TO THE STUDY

OVERVIEW OF THE CHAPTER



1.1 INTRODUCTION AND RATIONALE FOR UNDERTAKING THE STUDY

Rabies is regarded as a neglected tropical disease (NTD) that affects thousands of poor people in rural communities all over the world (World Health Organisation [WHO], n.d.). Five times more people annually die of rabies than the total number of fatalities in the 2014/15 Ebola-virus outbreak in Africa (WHO, 2016). The majority of victims are children in Africa and Asia (Knobel et al., 2005; Davlin & VonVille, 2012). While scientists are still developing a vaccine for Ebola, the best control measures for rabies have been well-known and widely available for years. In spite of everything being in favour of stopping rabies in its tracks, no efforts to do so have yet succeeded.

As such, rabies is a fatal viral zoonotic[1] disease that is currently endemic in South Africa and the rest of Africa (Bishop et al., 2010; Knobel et al., 2005). Even though rabies can infect any mammal, domestic dogs are by far the most common source of infection to humans (Bishop et al., 2010; Knobel et al., 2005). The WHO estimates that 60 000 people annually die of rabies worldwide (Wilde, Lumlertdacha, Meslin, Ghai & Hemachudha, 2016). In South Africa, 417 rabies outbreaks involving animals were reported in 2016 and of these, 52 were in the Mpumalanga province (Mathonsi, 2017). Over the last 15 years, 171 confirmed cases of human rabies have been reported (National Institute for Communicable Diseases, 2015) in South Africa. Reported and laboratory confirmed cases of human rabies are, however, likely to underestimate the true incidence of the disease, with an estimated 3% of all cases being reported by central health authorities in Africa (Knobel et al., 2005).

Dog bites are the most common route of infection for human beings. The virus is transmitted *via* a dog's saliva to a human's blood and from there the virus travels along nerves to the brain (Wilde et al., 2016). Dogs on the other hand, may get rabies from the bite of another dog or wildlife, such as jackal or mongoose. Dogs may show a variety of signs, including anorexia, fever, sudden aggressive behaviour, hypersalivation (drooling), changes in phonation (pitch of barking), and paresis or

[1] A zoonotic diseases or zoonosis is a disease that can be transmitted to humans from animals (Concise Oxford English Dictionary, 2008).

paralysis (Hanlon, 2013). Death due to rabies usually occurs within a week of the symptoms appearing in both humans and animals, and is particularly excruciating (Wilde et al., 2016).

Although there is no effective cure for rabies, and it is virtually 100% fatal, it is also 100% preventable. The best way to prevent rabies in human beings is to vaccinate dogs against rabies (Cleaveland, Kaare, Knobel & Laurensson, 2006; Knobel et al., 2013; Lembo et al., 2010; Morters et al., 2013). In this regard, the WHO recommends a 70% vaccination coverage to maintain adequate protection in a dog population. Routine vaccination of human beings is not regarded as cost-effective (Lembo et al., 2010; Knobel et al., 2013; WHO, 1992), resulting in a focus on people who work in high-risk environments, e.g. veterinarians and game rangers.

Timely post-exposure prophylaxis (PEP) for patients who have been bitten by a rabid animal is also highly successful in preventing the disease (Knobel et al., 2013; Wilde et al., 2016). This strategy involves three steps, namely immediate thorough cleaning of the bite wound, which can already significantly decrease the risk of contracting the disease (Dean, Baer & Thompson, 1963); administration of rabies immunoglobulin (RIG) into the bite wound to stimulate the body's own immune system (Shantavasinkul & Wilde, 2011) and vaccination against rabies. Unfortunately, PEP requires several visits to a clinic and is often difficult in remote areas (Wilde et al., 2016; Shantavasinkul & Wilde, 2011). As a result, the direct and indirect costs of rabies worldwide amount to significant economic loss, as well as psychological trauma experienced by those affected and their families (Knobel et al., 2005; Cleaveland et al., 2006; Weyer, 2015). The total annual cost of rabies prophylaxis in humans in South Africa alone is conservatively estimated at approximately R70 million (The National Rabies Advisory Group, 2014).

1.1.1 Contextual background

In the Mpumalanga province of South Africa, where this study was undertaken, 380 animal cases of rabies, of which the vast majority were in dogs, were reported in the period 2008 to 2016. Two human cases were reported (Directorate of Animal Health, 2017). Hluvukani is a village with mainly Shangaan-speaking inhabitants within the Mnisi Tribal Authority in Mpumalanga, close to the border of the Kruger National Park (Van Rooyen, 2016). Mkhize (2010), in describing the origins and occurrence of dog

rabies in Mpumalanga, states that before 2008, rabies was confined to the south-eastern part of Mpumalanga, in the areas adjacent to Swaziland and Mozambique. It had originally spread to Mpumalanga in the 1950s, from Namibia, *via* Botswana and what is currently known as the Limpopo province, but since the late 1980s, no rabies cases have been reported in the Bushbuckridge area. In 2008 it re-emerged in the Mnisi/Bushbuckridge area where it had previously been under control. To date, no human cases of rabies have been reported in Hluvukani in spite of several dogs having been tested positive (Knobel et al., 2017).

However, as a result of dogs testing positive for rabies in Hluvukani, it appears as if it is just a matter of time before humans may become infected (Weyer, 2015). It is therefore essential that the local community understand the need for rabies prophylaxis and take action to prevent rabies. It is against this background that I set out to explore the possibility of implementing a participatory reflection and action (PRA) intervention with the aim of facilitating community awareness of rabies and how it can be prevented, with the implied potential of the community taking positive action in this field.

The study formed part of the Mnisi Community Project (MCP) of the Faculty of Veterinary Science (FVS), University of Pretoria, which involves collaboration among various stakeholders and incorporates the Hluvukani Animal Clinic (operated by the FVS and provincial state veterinary services) and the Hans Hoheisen Wildlife Research Centre (HHWRS).

1.1.2 Personal interest in the topic

For me as a veterinarian and educator learning how veterinary science can benefit humans has been a lifelong quest. I am avidly interested in human-animal interaction where animal behaviour, animal welfare, veterinary community engagement, and teaching and learning overlap. As veterinarian, I have experienced that the more support and buy-in I have from an animal's caregiver, the better I am able to serve the patient's best interest, with the aim of improving the quality of life for both. This requires the ability not only to be a competent clinician, but also to communicate effectively with a client. To this end, I subscribe to the principle of relationship-centred care (Gray & Moffett, 2010) where a balance of power exists between a veterinarian and client, allowing the client to participate actively and equally in

decision-making about the veterinary care of the patient. As a veterinarian in South Africa, I am aware of the fact that a large proportion of South Africans have no or limited access to veterinary services. Therefore it is imperative that veterinarians learn how to share veterinary messages in a compassionate, respectful and effective way in different veterinary contexts, including community-based situations.

In my role as educator I need to understand the contexts in which my students will be expected to work as professional graduates, to prepare them adequately for this reality. Veterinarians do not merely require the practical skill of communicating veterinary science, in particular primary animal health care to animal caregivers; they also need to understand the impact of indigenous or local knowledge and cultural background on how people view animals and animal health. In keeping with my assertion that a veterinarian-client relationship is based on mutuality, I support a participatory approach to veterinary community engagement in a country such as South Africa.

As both an educator and a veterinarian, the topic I have chosen is at the intersection of veterinary science and education. With regards to education, I am interested not only in the training of veterinary professionals, but also in how learning occurs at the community level among people whom veterinarians and other professionals interact with. As a result, my current study is situated in the field of education.

Implementing PRA and a strengths-focused approach when conducting research has proved to be effective in various disciplines, typically resulting in the empowerment of people in various settings, such as health services and agriculture. For example, a PRA-based study in India (Deka, Syiem, Saikia & Surong, 2017) aimed to increase the detection of childhood blindness, which is often preventable and treatable. The intervention resulted not only in improved detection and rehabilitation of visually impaired children, but also in additional positive health effects, such as increased immunisation of children, improved nutrition and more effective birth control. The research team attribute these changes to the empowering effect of following a participatory approach. A further example of the potentially positive effects of PRA is presented by Lara, Crispin and Tellez (2017) who conclude that PRA enabled the participants in their study in a rural Mexican community to recognise and mobilise their existing knowledge to participate actively and

autonomously in decision-making about the management of their resources and land.

Similarly, a participatory intervention with small-scale farmers in Zambia (Kopainsky, Hagera, Herrera & Nyanga, 2017) aimed at improving food security brought about the development of shared knowledge among farmers on farming practices. As a result of the PRA-process, the farmers were able to integrate their existing practical knowledge with abstract concepts of farming systems, resulting in their thinking more holistically about farming practice and achieving better results. Further evidence of the potential of PRA to elicit positive change in communities is provided by a study conducted in the Eastern Cape province in South Africa (Binns, Hill & Nel, 1997), where PRA methodology led to the development of large scale vegetable farming, which in turn resulted in social and economic improvement of the community.

Based on these examples, I contend that PRA may provide an effective way of foregrounding animal health issues and empowering communities to take ownership of the challenges they face. Participatory intervention may elucidate the impact of animal health on human well-being, thereby promoting a holistic view of health and well-being, and enabling people to improve the quality of life actively for themselves and their animals. In this manner, PRA may provide a vehicle to provide support and community-based guidance.

The value of community participation in the delivery of veterinary services is well described in other parts of Africa. Andy Catley was one of the first veterinarians to utilise participatory methods in addressing animal health issues in, among other countries, Kenya, Tanzania, Uganda, Sudan and Ethiopia. Several studies by Catley and his co-authors (Catley, 1999; Catley & Leyland, 2001; Catley, Osman, Mawien, Jones & Leyland, 2002; Catley et al., 2004; Catley, Alders & Wood, 2012) describe the innovative use of a variety of participatory methods in veterinary science. These studies resulted in veterinarians gaining a better understanding of how local people view animal health, enabling veterinarians and participants to jointly develop practical and sustainable ways of diagnosing, treating and preventing disease in livestock.

The community animal health worker (CAHW) model (Catley & Leyland, 2001) was developed as a result, and has since been applied successfully in various settings. In this model, local individuals are identified by the community and then trained by veterinarians to enable them to assist local livestock owners with advice on animal health as well as drugs and vaccines. Medicines are typically provided in collaboration with a local state or private veterinarian. The impact of such community-based participatory programmes has in many cases been highly significant, with some of the community-based projects being more successful and sustainable than traditionally managed government-initiated projects. In another context, Jost, Mariner, Roeder, Sawitri and Macgregor-Skinner (2007) report on the contribution of participatory epidemiology and participatory disease surveillance in East Africa and Central Asia to the global eradication of rinderpest[2] in 2011.

Despite ample evidence on the use of participatory methods in addressing veterinary challenges elsewhere in Africa, I could find only two references to a participatory veterinary approach used in South Africa, namely Getchell et al. (2002) and Vatta et al. (2011). Getchell et al. (2002) utilised participatory rural appraisal to enhance a community's way of dealing with animal health needs in the North West province. Community members, however, found it difficult to formulate potential solutions to the problems they faced, and not much action emanated from the process. This may be ascribed to animal health technicians[3] (AHTs) rather than community members themselves steering the process, or to the fact that a deficit-based approach was followed for this particular study as opposed to an asset-driven methodology (Morgan & Ziglio, 2007), which I adopted for the purpose of the current study.

Secondly, Vatta et al. (2011) combined the training of goat farmers with participatory methodology while doing research in KwaZulu-Natal. Different levels of community involvement were applied in three settings, indicating that higher levels of community participation resulted in better knowledge and skills among farmers. Although the

[2] A fatal and highly contagious viral disease affecting cattle and some species of wildlife. More than 5,2 million animals died in an epidemic in the late 1890s in South Africa. It was declared eradicated in 2011.
[3] Animal health technicians are veterinary para-professionals who are employed by the state to assist state veterinarians with disease surveillance and other tasks.

study makes reference to participatory methods, the focus was on the transfer of knowledge rather than facilitation of participatory tools.

As such, the experience of a participatory, strengths-focused approach, from the perspective of participants in veterinary community settings, has not yet been described in South Africa. While many studies provide insight into participatory methodology and application in the veterinary field, existing studies focus mostly on animal health outcomes. The perspectives and experiences of community participants, and how they may have been guided, supported and empowered in the process, has not yet been emphasised. As my study focuses on the experience of participants in a veterinary intervention, it may contribute to the body of knowledge on veterinary science community engagement and community-based guidance and support in South Africa.

1.2 PROBLEM STATEMENT

Despite the fact that rabies vaccination of dogs and cats is a legal requirement in South Africa, it is not effectively enforced (Weyer, 2015). Even though the Hluvukani Animal Clinic offers free rabies vaccinations, not enough dogs are presented at the clinic to maintain the 70% required coverage (Conan et al., 2015a). Since 2008, regular state-sponsored vaccination campaigns have been launched with increasing frequency, to about two campaigns per month in the Bushbuckridge area in 2016 (Van Rooyen, 2016). These campaigns require of the state veterinarian team to be present at a central point in a village, as well as to undertake house-to-house visits inviting dog owners to bring their dogs for vaccination.

Thys et al. (2013) set out to determine, among other things, the barriers to rabies vaccination of dogs in Mnisi. According to the preliminary results of this study, misconceptions about various aspects of rabies seemingly exist in the Mnisi community. Some of the inaccurate perceptions in this community are captured by the following beliefs and myths:

- Rabies is similar to kwashiorkor (here *kwashiorkor* does not refer to the human condition but to a Shangaan term for a canine disease implying the shedding of the coat).

- When someone is bitten by a dog, a criminal case has to be opened before the human clinic can assist.
- Dogs get rabies from eating the bones of tinned fish.
- Sharing dogs' drinking water or dishes that dogs have licked can transmit rabies.
- Vaccination can cure dogs from rabies after they have bitten someone.
- Vaccination is a plan of game lodges to kill hunting dogs.
- Vaccination will make a dog weaker and less aggressive, with a lower appetite.
- If dogs are taught not to bite they will not spread rabies and therefore the risk of spreading rabies will be less.

As a result of these misbeliefs and due to the need for the Hluvukani area to implement preventative measures, an educational pamphlet by the Department of Agriculture, Forestry and Fisheries on rabies prevention (included in Appendix A), has been distributed in the area since 2008 during rabies vaccination campaigns. The effectiveness of this educational resource has, however, not yet been assessed. To my knowledge no other rabies instructional material has been developed for or by the community. Veterinarians, veterinary students and AHTs have addressed learners in the local schools as well as other community members about rabies prevention. Yet, without determining the outcome of these efforts, it is difficult to know what the effect has been on creating rabies awareness and promoting preventative action.

In support of addressing the existing problem, my research has focused on correcting inaccurate perceptions and discussing accurate information on rabies with the community as part of a participatory intervention, to explore the potential use of such an approach for community guidance on rabies control. The awareness and action-focused intervention utilised evidence-based principles and practices, relying on the theory of PRA as approach to community engagement. As such, the focus fell on action learning and transformational learning, effective communication − resulting in understanding and action through appropriate message framing − and a strengths-based approach to community development when aiming to address challenges. The said existing educational material on rabies, available to the community, and other internet-sourced material, was analysed as part of this process.

Prior to commencing with my study, I assumed that a PRA-based intervention in the Hluvukani community in Bushbuckridge could result in rabies awareness and action by the community, with them utilising existing, local and newly acquired knowledge and skills to prevent rabies, organised by the community for the community. The exact outcomes and format of the PRA-intervention were unknown to me at the onset of the study, as these had to be developed in a participatory manner in collaboration with the participants.

1.3 PURPOSE OF THE STUDY

The aim of this study was to determine the potential use of PRA in facilitating awareness of the risks and prevention of rabies in the human and animal population in a rural community in Mpumalanga province, South Africa. As such, I attempted to determine the effectiveness of PRA in facilitating guidance and development in a rural community. The unit of analysis was the Hluvukani community, represented by a group of community members. I specifically selected Hluvukani due to the presence of an animal clinic, a state veterinarian's office and a human clinic, all in relative proximity of one another.

An effective outcome would imply that the community would be empowered to take collective responsibility for rabies control in the area through not simply a process of knowledge transfer (informational learning) but also by effecting behavioural change (transformational learning) (Baumgartner, 2001; Gravett, 2005). As my study involved only a small group of people within a specific community, the broader aim focused on evaluating the process and its outcomes to determine the potential use of PRA-based interventions in broader contexts, within the field of veterinary science.

As such, my primary purpose was to facilitate an intervention that could result in a rabies-aware and rabies-active community, empowered to take responsibility for preventing rabies in the community. For this purpose I conceptualised a rabies-aware community as a community that has knowledge of rabies and its "One Health"[4]

[4]One Health is defined by Asokan, Kasimanickam and Asokan (2013, p. 1) as "a collaborative effort of multiple disciplines working locally, nationally and globally to attain optimal health for people, animals and the environment".

aspect, as well as rabies control measures, and is motivated to achieve rabies control. On the next level, a rabies-active community will develop skills, resources and structures to implement rabies control. Finally, such a community will regularly evaluate and improve existing activities as needed.

1.4 RESEARCH QUESTIONS

Against the background of my discussion in the previous sections, I formulated the following guiding primary research question: *How can participatory reflection and action be utilised (or not utilised) to facilitate awareness and prevention of rabies in the Hluvukani community?*

The following secondary research questions apply:

- How are animals, and in particular dogs, viewed in the community?
- How are animal health and rabies control perceived in the community?
- What are the strengths of the community and how can these be utilised to promote animal health?
- Which challenges were experienced when utilising PRA to facilitate rabies control in the community?
- How did PRA change the participants' perceptions and actions with regard to rabies control?

1.5 WORKING ASSUMPTIONS

In conducting this study, I assumed the following:

- I assumed that the participants had an interest in promoting human and animal health, in particular preventing rabies.
- I assumed that the participants and community possessed strengths that could be directed towards animal health issues in the interest of the community.
- I assumed that the participants would be willing to share their knowledge and experiences about themselves and the community.
- I assumed that a PRA approach had the potential to facilitate learning and increased awareness and action on rabies prevention in the community.

1.6 CONCEPT CLARIFICATION

In this section I clarify the key concepts of the study.

1.6.1 Participatory reflection and action (PRA)

PRA involves a methodological approach to community engagement and research, and emphasises the active participation of community participants. This approach requires reversal of roles in the sense that the researcher becomes the learner and the participants or research subjects are recognised as the experts (Chambers, 1992; Ferreira & Ebersöhn, 2012). The concept is described in more detail in Section 1.7.2 below and in Chapter 3.

1.6.2 Rabies

Rabies is a fatal viral disease that affects the nervous system of mammals. It can be transmitted among species and the most common source of infection of humans, is dog bites (Bishop et al., 2010; Knobel et al., 2005). More detail follows in Chapter 2.

1.6.3 Rabies control

Rabies control refers to the methods that can prevent signs of rabies from developing in people and animals, and includes preventive vaccination, wound treatment in the event of a bite of a suspected rabid animal as well as the prevention of dog bites (Conan et al., 2015a; Knobel, 2005). The concept is described in more detail in Chapter 2.

1.6.4 Rural community

Rurality can be conceptualised in various ways (Ebersöhn & Ferreira, 2012; Ebersöhn, Loots, Eloff & Ferreira, 2015; Hlalele, 2012), taking into account, among others, geographical, demographical, functional, political, economic and social characteristics. In the context of this study, rural refers to an area that is not urban or close to a city, and that has limited resources available. Hluvukani is a settlement in Bushbuckridge Local Municipality, Mpumalanga province, South Africa, with a population of 9 631, according to the 2011 national census (Frith, n.d.). The settlement is characterised as a village in a tribal area, comprising mainly residential land where families live in houses on separate stands and do not primarily rely on agriculture for survival (Conan et al., 2015a).

1.7 SELECTED PARADIGM, METHODOLOGICAL APPROACH AND THEORETICAL FRAMEWORK

Research occurs within certain paradigms which are established and agreed upon by communities of researchers over time (Sefotho, 2015). The philosophical assumptions that underlie these paradigms assist the researcher in formulating the research problem and planning a study to ensure alignment between ontology, epistemology, axiology and methodology (Creswell, 2013). Theoretical assumptions come into play when the researcher uses existing theories to assist in answering the research questions (Sefotho, 2015). In this section, I introduce the philosophical, methodological and theoretical stances I took in undertaking this research. I discuss these choices in more detail in Chapter 3.

1.7.1 Philosophical assumptions

My study involved the facilitation of an intervention that I observed, analysed, interpreted and report on. As I formed part of the activity and phenomenon under study, I fulfilled the multiple roles of interventionist, participant, analyst, interpreter and reporter. As such, my role was not one of an independent, neutral observer, as in the positivist or post-positivist paradigms (Creswell, 2013; Schurink & Crafford, 2012).

My involvement in the research process therefore implied the possibility of subjective views and interpretations while I was learning from the research participants. Therefore, ontologically − how reality is viewed − I remained aware of different realities as perceived by the different participants. Epistemologically − how knowledge can be created, acquired and communicated) (Sefotho, 2015; Schurink & Crafford, 2012) − my study aimed to produce new knowledge by obtaining subjective evidence from participants and by immersing myself in the research process or as stated by Creswell (2013, p. 21) “attempting to lessen the distance between [myself] and that being researched”. At an axiological level where power, values and bias play a role (Creswell 2013; Schurink & Crafford, 2012), I acknowledge that I brought my own values and biases to the process. As a white, upper middle class female, graduate and privileged South African, my perspectives differ from those of the participants.

The paradigmatic approach I selected thus heavily relied on the active engagement of participants while taking into account the flexibility, or unpredictable nature of the research process (Creswell, 2013; Denzin & Lincoln, 2011; Schurink & Crafford, 2012). More specifically, within the qualitative framework, I situated my study within both the interpretivist and participatory (also referred to as “cooperative inquiry”) paradigms (Creswell, 2013, Denzin et al., 2011; Heron & Reason, 1997). Epistemologically, I thus assumed that knowledge is created during interaction between the researcher and participants (interpretivism) (Phoenix et al., 2013), yet also through experiential knowing and purposive action, thereby implying a participatory component (Heron & Reason, 1997).

At an ontological level, as interpretivist, for the purpose of this study (Phoenix et al., 2013; Lincoln, Lynham & Guba, 2011) I thus viewed reality as multiple, subjective and dependent on the mind and body. As personal perspectives represent people’s realities, different truths exist for different people, with knowledge being socially and contextually constructed (Silverman, 2014). In this study, I furthermore adopted the participatory view that reality is subjective-objective in that a given cosmos exists, in which, and with which, the mind actively engages (participates) (Heron & Reason, 1997; Lincoln et al., 2011).

The qualitative methodological approach I selected aligns with the interpretivist view of including my role of researcher as learner in an attempt to find an “insider” perspective (Schurink & Crafford, 2012), made more explicit in the participatory principle of “researcher as subject”. To this end, the focus of a qualitative participatory paradigm centred on collaboration and reflection (Heron & Reason, 1997), resonates well with the selected meta-theory of this study.

In terms of axiology, interpretivism views knowledge as valuable for social emancipation, particularly as a reflective process (Lincoln, Lynham & Guba, 2011). According to participatory research, such value can be observed in the practical knowledge of humans flourishing, thereby enabling balance between hierarchy, cooperation and autonomy – “deciding for others, with others and for oneself” (Heron & Reason, 1997, p. 287). Based on the paradigmatic choices I made, I regarded potential emancipation in the form of empowerment of the participants and gaining

practical knowledge in terms of animal health as valuable possible outcomes of my study when embarking on this research.

1.7.2 Methodological approach

I followed a qualitative approach, guided by PRA-principles. To this end, I adapted the intervention described by Ferreira and Ebersöhn (2012) for a project they undertook in a resource-constrained school-community in South Africa, to serve the context of this study, yet utilising the basic outline and phases of the described intervention. I similarly focused on qualitative data generation.

In applying a qualitative approach, I aimed to understand the phenomenon through the perspectives of the participants. This meant that as a qualitative, participatory researcher, I was directly involved in the phenomenon under study, enabling me to construct a new understanding of the case, utilising a variety of data sources that represent multiple realities (Creswell, 2014; Silverman, 2014; Stake, 1995).

The most salient features of PRA research include the participatory nature of the approach, the reversal of roles of traditional research (the researcher becomes the learner and the participants the experts), and the process of critical self-reflection by the facilitator, or in this case, me as researcher (Chambers, 1992). The three pillars that define PRA, as described by Chambers (1992) that I relied on, implied that I continually focused on appropriate behaviour and an ethical attitude by me as facilitator (unlearn, listen, respect, facilitate, embrace error), that I selected suitable methods (mapping, modelling, diagrams, scoring, ranking, presenting, etc., focusing on the so-called handing over the stick to the participants), and that I encouraged the sharing of information by participants and facilitators (information is visible and public, owned by the participants). In the intervention in Hluvukani, I thus had to consider various perspectives as the participants came from diverse backgrounds.

1.7.3 Theoretical assumptions

The theoretical framework I selected to guide me in this study is empowerment and enablement theory. Perkins and Zimmerman (1995, p. 570) define empowerment as “an intentional ongoing process centred in the local community, involving mutual respect, critical reflection, sharing and group participation, through which people lacking an equal share of valued resources, gain greater access to and control over

those resources". The main aspects of empowerment are control over one's life, democratic participation in community life, and a critical understanding of one's environment (Perkins & Zimmerman, 1995). Enablement, more specifically, refers to assisting people with obtaining agency through participation and mutual transformation of both the researcher and the participant (Janse van Rensburg, 2014).

The concept of power lies at the core of empowerment. Traditionally, power is understood as influence over others, regardless of their wishes (Page & Czuba, 1999), and is thus unchangeable, unchanging and inherent in people or positions. Empowerment can only occur if power changes. Therefore, if power is viewed as existing within relationships among things and people, it can undergo change. This relational view of power implies that empowerment can be regarded as a process of change and as a meaningful construct (Page & Czuba, 1999). Power, however, does not have to exist at someone else's expense – it can also be characterised by sharing and collaboration.

Closely related to this argument, Page and Czuba (1999) regard empowerment as a social process that occurs at different levels, such as individual, group and community levels. Others (Perkins & Zimmerman, 1995) view empowerment as both a process and the outcome of a process. To this end, an empowering process at community level may imply the process of accessing government resources, while at individual level, it may mean participation in community organisations. Empowerment outcomes can furthermore include resource mobilisation skills for individuals and accessing resources at community level (Perkins & Zimmerman, 1999). According to Brodsky and Cattaneo (2013), empowerment follows a strengths-based approach in recognising and promoting local capacity building.

Empowerment theory aligns well with participatory research. In this regard, Chambers (1992, p. 56) states that "PRA empowers" but that the value of empowerment depends on who is being empowered, and how the new power is being used. This view emphasises the importance of equity in participatory research processes and the need to identify those who do not have power – the weaker – and ensure that they are empowered.

In applying these views to the current study, I remained aware of the fact that the people in Hluvukani do not have access to many resources and may not have fully realised the potential of their own resources at the onset of this study. PRA therefore allowed for the possibility of their identifying and better utilising existing resources, enabling them to make better decisions that could affect their daily lives. As such, empowerment seemed to be a possible outcome at the start of this study, based on the paradigmatic choices I made.

1.8 OVERVIEW OF METHODOLOGICAL CHOICES AND STRATEGIES

In this section, I describe my selected case study research design, and the selection of the case and participants. I also provide an overview of the research process and data generation, documentation and analysis strategies I employed.

1.8.1 Research design

As strategy of inquiry I utilised a case study design (Fouché & Schurink, 2012), including some elements of empowerment evaluation (Mouton, 2008). The nature of my research question lent itself to an in-depth investigation into the real-life experience of a unique group of people, within a specific context. Yin (2014) emphasises the importance of a case study being investigated in the context of the real world, where the selected phenomenon and context merge to a certain extent.

Case study research thus involves the exploration of a system that is bounded by time and context – in the case of this study, of a group of people and their activities over several months. To this end, I obtained and analysed multiple context-rich sources of information in depth (Fouché & Schurink, 2012). According to Stake (1995), the most important aspect of case study research relates to the understanding of a particular case. As such, generalisation is not the primary purpose and should not be regarded as a limitation (Fouché & Schurink, 2012). As my research was both explanatory (asking the question *How?*) with some descriptive elements (*What*?), it may, however, allow for transferability to selected similar contexts.

Empowerment evaluation (Fetterman, 1994) entails the use of evaluation concepts and techniques to foster self-determination. It emphasises improvement and aims to "help others help themselves", by setting their own goals and strategies in a

collaborative and participatory environment (Fetterman, 1994, p. 305). It also aims to understand and improve a situation from participants' own perspectives (Fetterman, 2002), and can easily be incorporated into PRA.

My study investigated the use of a PRA-intervention with a group of participants who were selected based on their ability to speak and understand English, and their interest in participating in a project involving animal health. This entailed purposive sampling (Flick, 2014; Silverman, 2014) in that the participants were deliberately chosen for the purpose of the study (Liamputtong, 2013).

Photographs 1.1 to 1.4 provide some background on the research context and selected case. I selected the Hluvukani site due to it being part of the Mnisi Community Programme and the presence of the Hluvukani Animal Clinic, where the university students regularly interact with community members (Photograph 1.2), state veterinarian offices and human clinic (a modern facility as depicted in Photograph 1.1). Although the community is resource-constrained, many residents live in well-constructed brick houses (Photograph 1.3). Farm animals are kept in a communal system with limited or no fencing to separate animals of different owners (Photograph 1.4). Based on two visits to the human clinic in 2013 and 2016, I had access to the case and thereby relied on convenience sampling in selecting the specific site as a case (Creswell, 2013). I also established that the human clinic had already been providing post-exposure prophylaxis for dog bite cases prior to my study, implying that a certain level of awareness of rabies could be expected, upon which the PRA-intervention could build.

Photograph 1.1: The human clinic in Hluvukani

Photograph 1.2: A veterinary student presenting to a group of local school children on the patio of the Hluvukani Animal Clinic

Photograph 1.3: The home of one of the participants

Photograph 1.4: Cattle grazing on communal land

In Chapter 4 I elaborate on the case study design I utilised, and on the case and participant selection.

1.8.2 Overview of the data generation and documentation process

In 2016 and 2017 I undertook eight field visits of two to three days each (see Figure 1.1 for a summary of the research process) to Hluvukani for the current study. Each of the visits, with the exception of the second and sixth visit consisted of three sessions of approximately 2½ hours each, in the mornings. Lunch was provided to participants during all sessions, which took the form of PRA-based workshops, relying on a variety of participatory activities, such as community mapping, group discussions, transect walks and the compilation of matrices. Throughout, I collaborated with an environmental monitor (EM) [5] who assisted me with interpretation and logistical arrangements. To generate data through PRA-based workshops and activities, I relied on participant observation, informal conversations, visual and audio-visual strategies, field notes and a reflective journal for data generation and documentation.

[5] Environmental monitors are local inhabitants employed by the Mnisi Community Programme to assist researchers with field work and act as go-betweens for the researcher and the community.

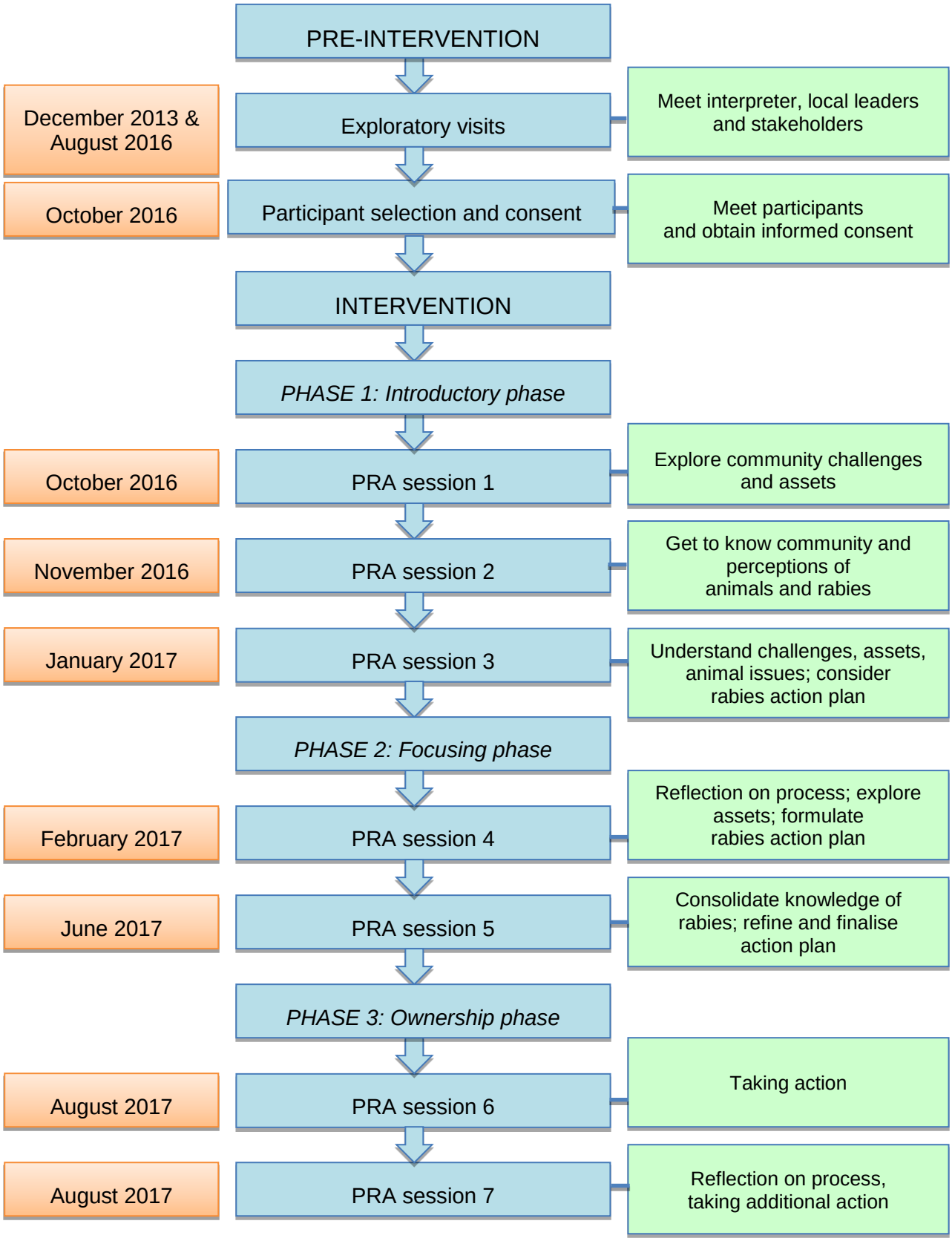


Figure 1.1: Overview of the research process

1.8.3 Data analysis and interpretation

Analysis involves the breaking up of data in smaller pieces, and then synthesising these pieces and making sense of them during interpretation (Mouton, 2008). Qualitative data analysis implies an ongoing reflective process, asking analytic questions (Schurink, Fouche & De Vos, 2012) and continuously referring back to the raw data in iterative cycles of analysis (Creswell, 2014).

I analysed the data on an ongoing basis during the research process, utilising a thematic inductive approach. The aim of inductive analysis is to make sense of data by breaking it down into small units or codes, and then organising it into patterns, categories and themes, working from the specific to the general (Creswell, 2014). Thematic inductive analysis is well suited to case study research (Flick, 2014) as it allows for the organising of data into a sense-making format. Both Flick (2014) and Creswell (2014) provide guidance and suggest similar steps to follow for this type of data analysis, which I incorporated. More detail on the data analysis I completed follows in Chapter 4.

1.9 ETHICAL CONSIDERATIONS

Ethical research involving human participants is based on mutual trust, acceptance and cooperation. The principles of voluntary participation, anonymity, confidentiality, trust and protection from harm are central (Strydom, 2012a).

I obtained informed consent from all participants prior to commencing with my study, after informing them about the purpose of the study and its intended process. Participation was voluntary and participants were able to withdraw from the research at any time. Ethical clearance for the project was obtained from the Ethics Committee of the Faculty of Education, University of Pretoria prior to commencing with the study. The manner in which I adhered to ethical guidelines is discussed in more detail in Chapter 4.

1.10 OUTLINE OF CHAPTERS

This dissertation is structured according to the chapter outline stipulated below.

Chapter 1: Introduction and background to the study

The first chapter provides background to the study, states the purpose of the study, research questions and working assumptions, and reveals the paradigmatic and methodological approaches I selected. I also introduce the theoretical framework in which I situate the study and state the methodological strategies I employed in generating, documenting, analysing and interpreting the data.

Chapter 2: Literature review

In this chapter I review existing literature related to the study. I discuss rabies epidemiology and control, using a One Health approach to communicate rabies messages and indicate how community-based interventions can be utilised to promote rabies awareness and prevention.

Chapter 3: Theoretical and paradigmatic decisions

In Chapter 3 I discuss the theoretical and paradigmatic choices I made. I unpack the theoretical framework I chose, the epistemological paradigm I utilised, and the qualitative participatory approach I followed. To this end, I justify the use of empowerment theory and interpretivism in guiding me during this study, and expand on the principles of PRA that I applied in generating qualitative data.

Chapter 4: Research design and process

In Chapter 4 I explain the research process in detail. I justify the case study design I selected, and explain my selection of the case and participants. I next describe the intervention I facilitated for the purpose of data generation. This is followed by my reflection on my role as researcher, a discussion of the ethical guidelines I considered and an explanation of the quality criteria I aimed to adhere to.

Chapter 5: Results of the study

In this chapter I present the results of the study by providing a clear account of how I coded and categorised the raw data during the process of inductive thematic analysis. I present the results in terms of the themes and sub-themes I identified, and support my discussions with excerpts from the data.

Chapter 6: Findings, conclusions and recommendations

In Chapter 6 I discuss the findings I obtained based on my interpretation of the results, which I compare to existing literature. I elucidate correlations, contradictions, silences and new insights stemming from the study. I then draw conclusions based on the findings of the study. I conclude with recommendations for further research, training and practice.

1.11 CONCLUSION

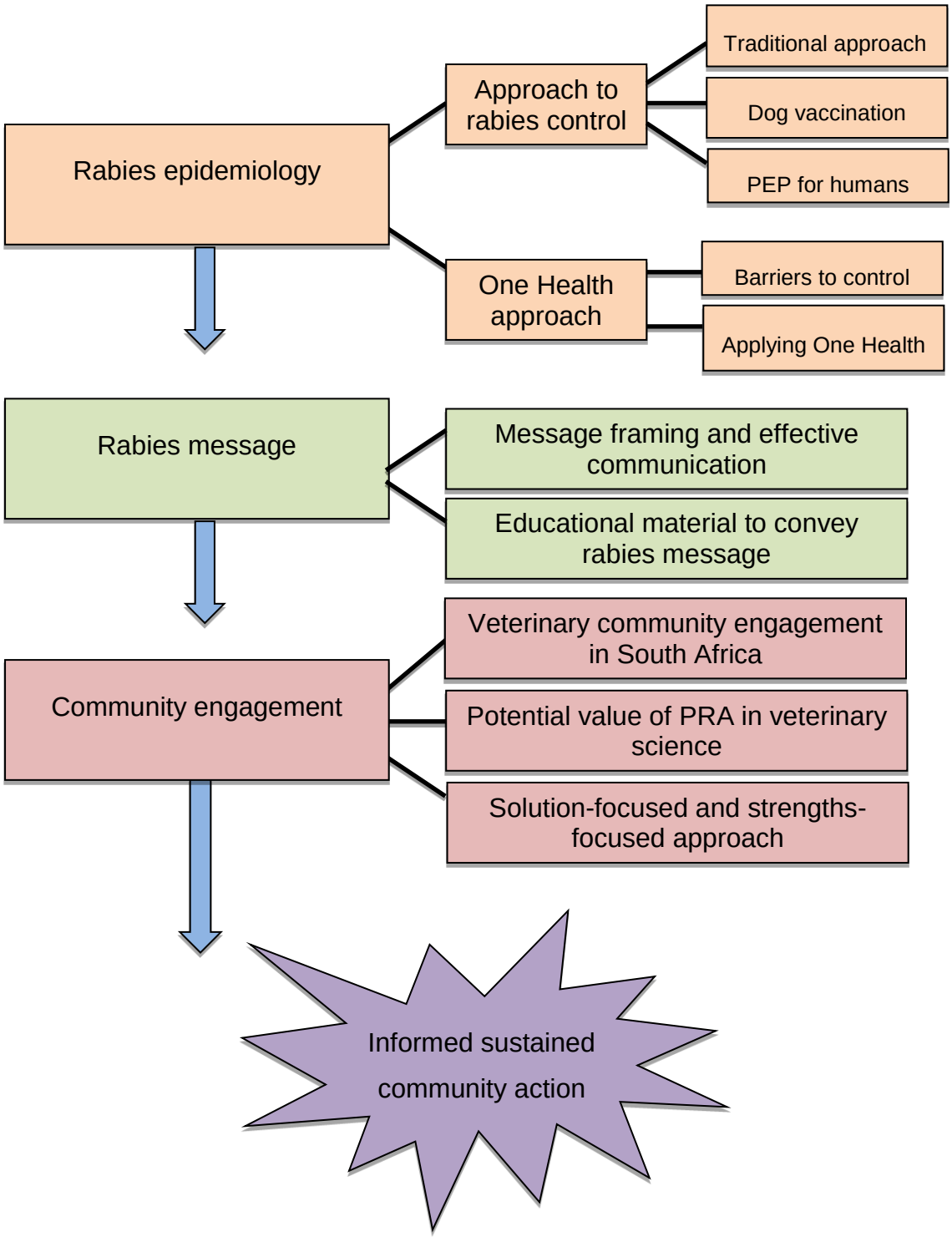
In Chapter 1 I introduced and contextualised the study against the background of existing research and practice on rabies control as well as my own background as researcher in this field. I stated the purpose of the study and formulated research questions. Next, I introduced my philosophical assumptions in terms of the paradigm and methodological approach I followed, being an interpretivist paradigm following a qualitative participatory approach. I stated the theoretical framework of my study, and then justified my methodological choices and strategies. Finally, I provided an outline of the chapters that follow to guide the reader through this dissertation.

Chapter 2 entails a literature review on the main topics related to my study. I discuss existing literature on the epidemiology and prevention of rabies, covering topics such as approaches to rabies prevention and dog ecology. I also explore the One Health approach to rabies education, and focus on different ways of formulating a rabies prevention message in terms of message framing, communication principles and educational material. I explore the potential of community-based interventions in the prevention of rabies, and review current veterinary community engagement efforts in South Africa and elsewhere for this purpose. I specifically attend to the way in which an strengths-focused approach may be utilised in community-based rabies prevention programmes and guidance, thereby foregrounding the potential contribution that the current study may make.

CHAPTER 2

LITERATURE REVIEW

OVERVIEW OF THE CHAPTER



2.1 INTRODUCTION

In the previous chapter I introduced the topic of the study by explaining the relevant background and presenting the problem statement and research questions. Furthermore, I provided an overview of the philosophical paradigms, methodological approach, and theoretical framework I employed. I also provided an overview of the research process and the way in which data were generated, documented and analysed.

In this chapter I explore existing literature on rabies and its control, and convey rabies prevention messages and community-based interventions that can assist with rabies control. I discuss rabies epidemiology in terms of different control measures, and explain how a One Health approach can be applied in the prevention and control of the epidemic. I discuss message framing and effective communication techniques in the context of rabies prevention, and how educational material has been framed in the past. Next, I explore veterinary community engagement as a possible way of intervention, and for this study in particular, the potential value of implementing a participatory, strengths-based and solution-focused approach to community-based intervention initiatives. I discuss PRA and the PRA-process I followed in detail in Chapters 3 and 4.

2.2 EPIDEMIOLOGY OF RABIES

In Chapter 1 I introduced rabies as a fatal zoonotic disease that is transmitted mainly to people by dog bites, and provided some information about its current prevalence in humans and animals. In this chapter I delve deeper into possible approaches to rabies prevention, including pre- and post-exposure prophylaxis in animals and humans. I frame rabies as a public and animal health issue, justifying the relevance of prevention of the phenomenon in terms of a One Health approach.

2.2.1 Approaches to rabies control

Rabies is caused by a virus of the genus *Lyssavirus* in the family *Rhabdoviridae* and results in an acute encephalomyelitis (inflammation of the brain and spinal cord) (Rupprecht & Kuzmin, 2015). The rabies virus (RABV) causes disease in nearly all terrestrial mammals. The virus exists worldwide with the exception of Antarctica and

a few island territories, and was initially spread from Europe to Africa, Asia and the western hemisphere through colonisation, to dogs, other domestic animals and wild animals (Rupprecht & Kuzmin, 2015; Taylor & Nel 2015; Velasco-Villa et al., 2017). The vast majority of human cases are due to dog bites or scratches. The incubation period after infection can vary from weeks to months or even years (Rupprecht & Kuzmin, 2015). Since the virus is transmitted through the saliva of dogs, scratches can cause rabies either when a rabid dog whose saliva has drooled onto its paws scratches a person, or when a rabid dog licks an existing scratch lesion on the skin of the victim (Global Alliance for Rabies Control [GARC], n.d.).

As the virus is identified through specific laboratory tests that are performed on brain tissue, it is impossible to diagnose the disease accurately in living humans or animals. Different sub-types of the virus exist and information on the genetic typing of the virus can assist in identifying the origin of an outbreak in terms of the geographic site and host species (Bishop et al., 2010; Taylor & Nel 2015; Velasco-Villa et al., 2017). Such phylogenetic studies have shown that RABV was present in bats long before the virus infected terrestrial mammals, and is still circulating in certain bat populations. Effective methods of control in bats remain elusive, and hamper efforts to eradicate the disease completely (Rupprecht & Kuzmin, 2015; Taylor & Nel, 2015). Due to the difficulty of controlling the virus in bats, and because dog-mediated rabies is responsible for the vast majority of human rabies cases, current rabies control efforts focus on the control of the virus in dogs. Various approaches to rabies control exist, which are unpacked in the following sub-sections.

2.2.1.1 Traditional methods of rabies control

As stated, rabies control has in the past focused mainly on dogs. In the United Kingdom, between the 1830s and 1920s, traditional methods of rabies control included the muzzling of dogs, restriction of their movement, destruction of stray and “mad” dogs, and strict import controls. These methods resulted in the elimination of rabies in the United Kingdom by 1902 (Knobel et al., 2013; Taylor & Nel, 2015).

Louis Pasteur developed the first rabies vaccine for humans in 1885 (Taylor & Nel, 2015), followed by the first veterinary vaccine for rabies developed in the 1920s. Hungary was the first country to eliminate rabies during the period 1937 to 1944 by implementing a combination of classical control methods and mass vaccination

(Knobel et al., 2013). Despite this success, many countries struggled to eradicate rabies, and in 1984 the WHO embarked on three research projects that focused on the ecology and population dynamics of dogs in developing countries. This led to a significant change in the approach to rabies control, as it became clear that existing measures aimed at reducing the population density, i.e. through the culling of dogs, did not have the required effect. In Ecuador, for example, the removal of 24% of the dog population over a period of 12 months neither had a lasting impact on the size of the dog population nor on the incidence of rabies. The response of the community was in fact to buy new puppies or adopt new dogs from the free-roaming dog population (Knobel et al., 2013).

The WHO (1992) subsequently published a report stating that the removal of dogs will not have a significant impact on rabies incidence and that such an approach could not be regarded as a rabies control mechanism (Knobel et al., 2013). In this regard, Morters et al. (2013) postulate possible reasons for rabies persisting despite culling, and propose that culling may in fact reduce the proportion of healthy and immunised individuals in a population, thereby rendering it more susceptible by removing the “herd immunity”. In addition, human factors may play a role, as culling operations are often associated with increased translocation of dogs from other sites. As culling will not reduce the demand for dogs in a community, the need for involving communities in the process of rabies control is emphasised. Furthermore, culling, as acknowledged by the WHO (1992), may be unacceptable to certain communities and could create an obstacle in obtaining community buy-in for rabies control programmes (Taylor & Nel, 2015) as it may incite animosity towards future vaccination teams (Cleaveland et al., 2006).

Currently, rabies prevention focuses on two main areas, which are discussed in more detail in the next two sections. The first approach entails prevention of the disease before it is contracted (pre-exposure prophylaxis or PrEP) through a vaccine that induces immunity to RABV in the human or animal recipient of the vaccine. Secondly, post-exposure prophylaxis (PEP) targets the elimination of the virus following its introduction through the skin *via* the saliva of a rabid animal, to prevent entry of the virus into the nervous system of the victim (WHO, 2017). In dogs, only pre-exposure prophylaxis (vaccination) is applied, while in humans vaccination is utilised both as a pre-exposure prophylactic in people who are at risk of contracting

rabies due to the nature of their work (e.g. veterinarians, animal health technicians, laboratory workers), and as part of the PEP regime in people who have been bitten by an animal suspected of having rabies, and who have not been previously vaccinated.

2.2.1.2 Vaccination of dogs and dog ecology

Pre-exposure prophylaxis in dogs entails the administration of an injectable vaccine. This is the most cost-effective way of eliminating dog-mediated rabies in humans (WHO, 2017). Most rabies vaccines are injected subcutaneously and provide a three-year immunity in dogs (Conan et al., 2015a; Morters et al, 2014b; Lankester et al., 2016). Based on various studies (Conan et al., 2015a; Cleaveland et al., 2006; Knobel et al., 2013; Lembo et al., 2010; Morters, Restif, Hampson, Cleaveland, Wood & Conlan, 2013; Morters et al., 2014; Morters et al., 2015) epidemiologists recommend canine vaccination as the best current approach to rabies control. Canine vaccination programmes, in the form of mass vaccinations, have proven to be highly successful in various parts of the world such as Japan, Taiwan, Western Europe, Latin America, Indonesia and Tanzania. In South Africa the number of human cases in Kwa-Zulu-Natal was similarly drastically reduced through a mass canine vaccination programme (Taylor & Nel, 2015; Velasco-Villa et al., 2017). In this regard, the WHO (2015, p. 6) states that “a vaccinated dog is the soldier in the fight against rabies”.

In South Africa, dog rabies vaccines are available free of charge from state veterinary services, or at a cost from private veterinarians. Dog rabies vaccines (unlike human rabies vaccines) are inexpensive and readily available (Lavan, King, Sutton & Tunceli, 2017). South Africa has access to the vaccine bank maintained by the World Animal Health Organisation/Office International des Epizooties (OIE), which provides cost-effective, high quality dog rabies vaccines to countries with endemic rabies (WHO, 2015). However, procurement of vaccines by provincial state veterinary services *via* the Department of Agriculture, Forestry and Fisheries (DAFF) is often slow, resulting in limited stock when it is needed (Rikhotso, 2017). This may hamper the efforts of provincial state veterinary services to engage in ongoing rabies vaccination campaigns.

Dogs of all ages can and should be vaccinated. According to Morters et al. (2015), suckling puppies below three months of age are already able to build up immunity following rabies vaccination, contrary to the earlier belief that maternal antibodies may interfere with vaccine-induced immunity in such young dogs. In areas where vaccination campaigns occur infrequently or where the coverage is low, non-vaccinated puppies may end up never being vaccinated, making it imperative that suckling puppies are included in vaccination campaigns. In addition, it is also safe to vaccinate pregnant bitches (Bishop et al., 2010).

The success of mass vaccination interventions depends on a number of factors such as availability, accessibility, acceptability, affordability, adequacy, vaccine efficacy, provider compliance, and consumer adherence (Mosimann et al., 2017; Muthiani, Traore, Mauti & Zinsstag, 2015). *Availability* refers to whether or not dog owners are aware of a campaign and have the correct information regarding dates, venue and time. *Accessibility* implies that the location of vaccination points is accessible to dog owners and that dog owners are able to handle their dogs and present them for vaccination. As state vaccination campaigns in South Africa are offered free of charge, *affordability* of vaccination to the dog caregiver is not relevant; however, indirect costs such as transportation and loss of time and income may apply. *Adequacy* refers to whether or not a client's needs are met in terms of time and venue as well as socio-cultural aspects. Any campaign must furthermore be *acceptable* in terms of the community's perspective and expectations. *Vaccine efficacy* requires that vaccines of high quality are used, and that they are stored and utilised correctly. *Provider compliance* means that an intervention is well organised, that there are sufficient manpower and vaccines, and that an adequate number of animals are vaccinated. Finally, *consumer adherence* refers to how well recipients follow the medical advice given to them (Mosimann et al., 2017). Many of these factors that may affect the success of a mass vaccination intervention relate to the perceptions and perspective of the community and individual dog owners. This study aims to address some of these issues and may shed more light on how to ensure the success of vaccination campaigns in Hluvukani.

As already indicated, vaccination coverage is an essential factor in the success of a rabies prevention intervention. In a review of canine rabies vaccination campaigns over the past two to three decades, Davlin and VonVille (2012) found that most

campaigns have indeed achieved the WHO recommended vaccination coverage of 70%. If this can be maintained for four years, it is possible to eliminate rabies in a given population (WHO, 2015). This means that if 70% of dogs in a susceptible population are vaccinated during annual vaccination campaigns, adequate population immunity to disrupt rabies transmission may be ensured. Although only 25%-40% of a population needs to be immune for the population to be protected, a higher level of immunity is required to compensate for losses due to other causes, such as in-migration and birth of susceptible (non-vaccinated) dogs, and out-migration or death of vaccinated individuals (Conan et al., 2015a; Gsell et al., 2012; Morters et al., 2013).

Following a recent study conducted in Hluvukani (the site of this study), Conan et al. (2017) provide evidence for the empirically determined 70% coverage. These authors found that even during periods of rapid growth and turnover in the dog population, 70% coverage during annual vaccination campaigns will result in a 40% immunity required to protect the population. They furthermore found that the majority of dogs in Hluvukani are in fact owned, free-roaming dogs, rather than unowned stray dogs, which has often been the perception, similar to the situation in other African countries (Gsell et al., 2012). This finding implies the possibility of accurately identifying and gaining access to most of the dogs in a relatively easy way when conducting a campaign, and can potentially contribute to the efficiency and success of mass vaccinations.

The degree to which mass vaccinations can be successfully performed furthermore depends on the ecology of dogs (Cleaveland et al., 2006, Knobel et al., 2013; Hergert et al., 2016). It follows that a sound knowledge of dog ecology, which entails information relating to what extent dogs are owned and confined, average longevity, main causes of death, and population turnover, is required. Accurate determination of dog numbers, and identification of dogs that have been vaccinated, is thus imperative for the successful planning of vaccination campaigns and to determine the coverage achieved. Various methods can be employed to obtain such data, including household surveys, capturing and marking, street-counting, registry records and statistical models (Muthiani et al., 2015; Conan et al., 2015a; Conan, Kent, Koman, Konink & Knobel, 2015b). Even though dog population numbers are often characterised as a ratio of humans to dogs (H:D), according to Wallace et al.

(2017), levels of poverty should also be taken into account. These scholars found that high population density combined with high poverty levels as typically seen in poor urban areas, relate to high dog ownership (lower H:D), based on their study conducted in Uganda, Africa. However, areas with high density and low poverty (e.g. affluent urban areas) as well as areas with low density and high poverty as in poor rural areas, generally have a higher H:D.

Dog ecology will, to a large extent, determine the operational details of a mass vaccination campaign. Ideally, the ownership status (owned, community, feral) and confinement status (confined, semi-confined, free-roaming) of dogs in a target site should be determined in order to tailor a rabies vaccination intervention for a specific context, by, for example, deciding on a central point or house-to-house strategy, or how to allocate limited resources. Population turnover is another important factor, as populations with a high turnover (high mortality rate) can rapidly lose herd immunity and may, as a result, require more frequent and intensive vaccination campaigns. Hence the overall health of dogs needs to be monitored constantly and high mortality rates should be addressed by promoting responsible pet care and improving accessibility to veterinary care (Conan et al. 2015b; Food and Agriculture Organisation [FAO], 2014; OIE, 2015; Wallace et al., 2017).

Furthermore, a good understanding of people's attitudes to dogs can contribute to the success of vaccination campaigns (Knobel, Laurenson, Kazwala, Boden & Cleaveland, 2008). This can, for example, include the following: reasons dogs are acquired, perceived benefits and risks of owning dogs, and the level of care offered by dog owners (FAO, 2014). In addition, local barriers towards rabies control interventions can be explored to inform good practice. In this regard a study in KwaZulu-Natal (Hergert et al., 2016) revealed that dog owners are not willing to travel far, or pay market-related fees for rabies vaccinations for their pets in that area. Likewise, in Uganda and Ethiopia, the cost of obtaining rabies vaccines was the most common reason for not vaccinating dogs against rabies (Jemburu, 2013; Wallace et al., 2017).

Lack of information about vaccination campaigns, or poor communication of such information, has also been reported to affect the success of campaigns in Mali, Tanzania and KwaZulu-Natal, South Africa negatively (Hergert et al., 2016;

Mosimann et al., 2017; Muthiani et al., 2015; Sambo et al., 2014). In Indonesia, Wera, Mourits and Hogeveen (2016) found that the timing of campaigns played a role in whether or not dog owners would support them, and recommended that campaigns be implemented on weekends. A study in the central African country, Chad, indicated that religion will also affect the participation of dog owners in rabies vaccination campaigns (Mbilo et al., 2017). In addition, the inability to handle dogs was cited as yet another reason for the low uptake of a central point vaccination programme in Bamako, Mali (Muthiani et al., 2015). In a study conducted in KwaZulu-Natal (Hergert et al., 2016), however, it was found that neither culture, religion nor inability to handle dogs played a role in whether or not dog owners were likely to present their dogs for vaccination, and owners were found to be more likely to support door-to-door vaccination than central-point campaigns. The current study may be instrumental in obtaining more information about possible barriers to rabies control, specifically in Hluvukani.

Morters et al. (2014) emphasise the importance of the human element in dog population management, based on a longitudinal study at four different sites. Dog population size of free-roaming dogs is likely to be human-controlled (regulated by human demand for dogs) rather than resource-controlled (dependent on the amount of refuse or food available for scavenging), since most dogs are in fact owned and fed by their owners. Based on findings like these, the importance of involving community members in rabies control is widely accepted (Conan et al., 2015a; Davlin & VonVille, 2012; Morters et al., 2014), yet limited literature reports on such efforts and interventions that exist. As such, the current study may shed light on this area, potentially indicating how community engagement may be utilised to facilitate rabies control, especially in rural communities.

Innovative research aimed at improving the effectiveness of mass canine vaccination is ongoing. Developments in vaccine technology that may have future application value for rabies control involve the production of thermotolerant vaccines (vaccines that do not require refrigeration); combined administration of the rabies vaccine and immunocontraception in one dose (for dog population management) (Lankester et al., 2016; Taylor & Nel, 2015; Velasco-Villa et al., 2017); and the development of dissolvable microneedle patches that can be easily applied to the skin of the dog's

ear, obviating the need for an injection that is potentially painful and generates medical waste (Arya, Dewitt, Scott-Garrard, Chiang & Prausnitz, 2016).

Davlin and et al. (2012) emphasise the need for new methods that may reduce high dog population turnover and improve the longevity of dogs. These authors propose that dog population control should focus on maintaining a smaller, sustainable, healthy dog population and not simply on the reduction of dog numbers (Morters et al., 2014a). This implies that programmes that encourage good dog management and promote responsible pet ownership are essential to eliminating canine and human rabies (FAO, 2014). In KwaZulu-Natal, South Africa, rabies awareness and dog vaccination campaigns have led to a drastic reduction in human rabies cases (National Institute for Communicable Diseases [NICD], 2015). As such, this study may provide useful information on how to facilitate awareness and action regarding rabies control successfully through the implementation of participatory processes in rural communities.

2.2.1.3 Post-exposure prophylaxis in humans

PEP, which can save human lives, involves the following three steps: thoroughly washing the wound, injecting rabies immunoglobin (RIG) into the wound, and vaccinating the patient against rabies (four vaccinations roughly one week apart) (Bishop et al., 2010; Taylor & Nel, 2015; WHO, 2017). In addition to PEP, anti-tetanus vaccination and treatment with antibiotics are also indicated (Durrheim, Ogunbanjo, Blumberg, Speare & Bishop, 2001). However, the vaccination regime in PEP requires multiple visits to a clinic or hospital over two to three weeks (Wilde et al., 2016; Lavan et al., 2017). Even if RIG and a rabies vaccine – both very costly items – are available free of charge as is the case in South African public hospitals, the indirect cost to patients for receiving treatment still implies transport costs and the potential loss of income.

Hampson et al. (2008) found that the main causes of human rabies deaths include insufficient knowledge of rabies and its prevention, the need for prompt PEP, and the nature of wound management. In addition, many victims of rabid dog bites do not even receive the most basic first-aid care. In some cases medical staff may be unaware of PEP and subsequently provide incorrect advice to patients. Patients may furthermore not complete the full PEP programme, which often has fatal

consequences. The National Institute for Communicable Diseases (NICD, 2015) reports that in the period 2000 to 2015, 52% of all confirmed human rabies cases in South Africa did not seek PEP. In the remaining cases that did seek PEP, patients received either no or incomplete prophylactic treatment, due to health workers not seeing the need for this.

Although PEP has been very successful for rabies control in countries such as Thailand and China, it is not sustainable in the long-term, due to the spiraling demand and consequent high cost (Taylor & Nel, 2015). Contrary to expectation, PEP demand does not necessarily decline as more dogs are vaccinated. Based on an increased awareness of the disease, the demand for PEP may, on the contrary, increase, and with it, the expenses of rabies control. This could have major implications for the cost-effectiveness of rabies control campaigns (Taylor & Nel, 2015). Ideally, only those patients that are genuinely at risk of contracting rabies, as opposed to all dog bite victims, should be targeted.

In this regard, a study in KwaZulu-Natal, undertaken over a three-year period, revealed that R160 000 was administered to dog bite victims who did not require it (Kent, Naicker & Wood, 2012). However, over time, the demand for PEP may decrease as dog vaccination coverage, and awareness and understanding of rabies epidemiology increases (WHO, 2015). Apart from the potential detrimental economic impact, it is important to keep in mind that PEP will not address the real cause of rabies, as it does not have an impact on the canine reservoir, which is the primary source of dog-mediated human rabies. PEP is a reactive approach while dog vaccination is pro-active. Dog vaccination therefore remains the most efficient and cost-effective way of eliminating rabies (Lavan et al., 2017, WHO, 2015).

2.2.2 Following a One Health approach in rabies prevention and intervention

Asokan (2015) defines One Health, also referred to as One World, One Health (Hinchliffe, 2015), as a systems approach that implies a combination of veterinary medicine, human medicine and other related disciplines working together locally, nationally and globally towards optimal health for people, animals and the environment. Zoonoses such as rabies occur at the interface of animal, human and ecosystem health. A One Health approach promotes a holistic view in which the horizontal integration of different disease control strategies occurs, making the best

use of available resources (FAO, 2014). This approach can thus address various elements and be more effective than when using just one sector to control the disease (Grace et al., 2017). To this end, a One Health approach to the eradication of rabies is widely advocated, and is supported by the current approach to rabies control, relying on both the mass vaccination of animals, and appropriate, available and accessible PEP for people who have been exposed to the disease (Cleaveland et al., 2017; Lavan et al., 2017; WHO, 2017). In this section, I consider some barriers that may prevent effective rabies control, and how a One Health approach can assist in overcoming such barriers.

2.2.2.1 Barriers to achieving rabies control and prevention

As stated, the vast majority of the estimated annual 55 000 to 75 000 human deaths ascribed to rabies, occur in Africa and Asia. Children under the age of 16, in particular children five to 15 years old, are the main victims. Ninety-five per cent of rabies deaths in people occur in Africa and Asia, with dog bites, scratches and licking being responsible for the transmission of 99% of all rabies cases. Timely PEP and mass dog vaccinations are highly effective in preventing the disease (Fahrion et al., 2017; Hampson et al., 2015; Knobel et al., 2013; Shantavasinkul & Wilde, 2011; Taylor & Nel, 2015; WHO, 2017); however, certain barriers exist that may hamper more effective control of this fatal disease. In this regard poverty, poor education and long distances to the nearest human clinics are regarded as risk factors for people contracting rabies. As a result of these factors, five times more rabies deaths occur in rural areas than in urban settings (Knobel et al., 2005).

To this end, Fahrion et al. (2017) and Taylor et al. (2017) identify several areas for concern, including the need to raise political will and awareness to recognise rabies control as a public good. Prioritisation of rabies may ensure better disease surveillance strategies and an improved understanding of the public health and economic impact of the disease. Accurate data on the public health impact in terms of deaths caused by rabies is currently hampered by the fact that many victims fail to access available treatment, or return home to die when advised that no effective treatment is available (Hampson et al., 2015). These deaths are not captured in surveillance systems, resulting in significant under-reporting of the disease.

In South Africa, for example, although the prevalence of rabies in human beings seems low, being an average of 13 cases per year (NICD, 2015), incidences are likely to be under-reported due to the clinical signs of rabies potentially being confused with other diseases, such as HIV-associated encephalitis as well as malaria-induced encephalitis (Kent et al., 2012). The stigma attached to mental disease and local beliefs and superstitions may also result in cases not being reported (Hampson et al., 2008). In Ethiopia, a high reliance on traditional treatment was, for example, found to have contributed to the under-reporting of cases to health authorities (Jemburu, Molla, Almaw & Alemu, 2013).

Furthermore, as a disease of low priority, the impact of rabies is not fully appreciated, and policy makers do not have evidence on which to base decisions regarding resource allocation. To this end, several researchers have attempted to quantify the economic impact of rabies (Hampson et al., 2015; Knobel et al., 2005; Taylor, Hampson, Fahrion & Abela-Ridder, 2017). The estimated losses exceed US$8.6 billion worldwide on an annual basis. This includes the direct costs of PEP and dog vaccination programmes as well as indirect costs, such as travel costs to obtain PEP, loss of income when seeking health care, loss of livestock affected by rabies, and loss of productivity due to lives lost to rabies. Loss of productivity due to mortality, apart from its social and emotional impact on communities, has the biggest impact on the economy (55,2% of the total burden), followed by the cost of PEP (20%) and lost income while receiving treatment (15,5%).

Quantification of the anxiety associated with being bitten by a potentially rabid animal is difficult to do, but should be included in estimates. The vaccination of dogs comprises a very small component (1,5%) of the total economic impact and an increased investment in dog vaccination campaigns can decrease PEP costs (Hampson et al., 2015; WHO, 2015), provided that public awareness is carefully managed to avoid the over-utilisation of PEP (Taylor & Nel, 2015). Another possible way of reducing the cost of PEP is to switch from intra-muscular to newer intra-dermal vaccines (WHO, 2015), which are more effective and economical (Wilde et al., 2016).

In addition to the need to raise political awareness of rabies and its impact on society, a general lack of public awareness of the disease and its impact seems evident

(Fahrion et al., 2017; Hergert et al., 2016; Jemburu et al., 2013; Mbilo et al., 2017; Prakash, Bhatti & Venkatesh., 2013; Sambo et al., 2014; Wera et al., 2017). Rabies affects people at all levels and requires champions from the community to the national level (WHO, 2015). Building an engaged society implies going beyond the mere transfer of rabies information to changed behaviour, practices and actions. Such behavioural changes include, for example, an increased responsibility by community members for the care of dogs in the community. Accurate disease surveillance also starts at community level (Fahrion et al., 2017) and communities can become involved in planning mass vaccination campaigns (Conan et al., 2015a). Communities furthermore need to recognise rabies control and dog population management as a public good that can result in public awareness and resultant action (Fahrion et al., 2017). The current study may provide clarity on how rabies prevention is perceived in Hluvukani and on ways in which perceptions could be changed, should this be necessary.

In addition to increasing political and public awareness of rabies and its control and prevention, the level of intersectoral collaboration can be promoted (Fahrion et al., 2017; Hampson et al., 2015, WHO, 2015). This firstly applies to collaboration between the animal health and human public health sectors, but also necessitates the inclusion of other disciplines, such as social sciences and the educational sector in a One Health approach (Fahrion et al., 2017; Rock, Rault & Degeling, 2017), as well as public-private partnerships (Taylor, 2013). In the following section, the practical application of a One Health approach in rabies control and prevention is discussed.

2.2.2.2 The One Health approach as potential intervention for rabies control

In a framework developed during the Global Rabies Conference in December 2015, the WHO, in collaboration with the FAO, the OIE and GARC made a commitment to direct resources towards eliminating canine-mediated human rabies in participating countries by the year 2030, embodied in the motto “Zero by 30” (WHO, 2015). This collaboration demonstrates a global intersectoral commitment to the elimination of rabies and has an integrated One Health approach as one of its pillars (WHO, 2015). When rabies is perceived as both a public and animal health issue, and resources are directed to both human and animal-focused control measures, success in

achieving control is much more likely. Demonstrating that rabies elimination is a public health issue to which a country is committed and that is supported by a comprehensive plan that includes intersectoral collaboration, can attract funding (Taylor, 2013; WHO, 2015).

Public-private partnerships include collaboration of state veterinary services with industry to achieve the common goal of rabies eradication, and can include vaccine donations and sponsorships for meetings and conferences by manufacturers (Taylor, 2013). Partnerships with private veterinarians, universities and non-governmental organisations also present possibilities (WHO, 2015).

A One Health approach relies on the principle of the optimal simultaneous wellness of people, animals and the environment. Environmental health plays an important role in rabies control, due to the ecology of dogs. As dogs are scavengers, when free-roaming, they are attracted by food waste and tend to congregate where there is edible waste. As such, waste control can affect the distribution of dogs by reducing roaming behaviour, thereby reducing the potential for contact with rabies-positive dogs. Waste control at dump sites, abattoirs and commercial enterprises such as restaurants may play a role in rabies control by limiting the movement of dogs (FAO, 2014). In underserved areas, such as the study site in Hluvukani, waste management may present some challenges, asking for an increased awareness and positive action to ensure rabies prevention.

While the One Health approach represents an appropriate global response to multi-species health issues, it can only be effective if local socio-economic factors are taken into account (Hinchliffe, 2015). The local knowledge and practices of farmers, animal owners and community members will significantly influence how zoonotic diseases impact people. In an environment of possible unequal access to political and other resources, an approach that focuses only on the pathogen itself and its transmission, while ignoring the unique context within which it occurs, may lead to a misconceptualisation of “health” across different contexts (Hinchliffe, 2015).

2.3 FORMULATING AND COMMUNICATING THE RABIES MESSAGE

In this section, I focus on what the rabies messages may entail, and how these can be framed in a way that engages recipients, and can lead to health-seeking action.

I also present my analysis of existing rabies educational (guidance) material that I explored in preparation for the study.

2.3.1 Message framing and effective communication

According to the WHO (n.d.):

> "risk communication refers to the exchange of real-time information, advice and opinions between experts and people facing threats to their health, economic or social well-being. The ultimate purpose of risk communication is to enable people at risk to take informed decisions to protect themselves and their loved ones. Risk communication uses many communication techniques ranging from media and social media communications, mass communications and community engagement. It requires a sound understanding of people's perceptions, concerns and beliefs as well as their knowledge and practices. It also requires the early identification and management of rumours, misinformation and other challenges".

In essence, the rabies message is a risk communication aimed at people making informed decisions to promote their health and well-being. Health messages imply behavioural decisions by recipients and may resonate with health promotion actions aimed at rabies awareness and action interventions. For this study, behaviour that may promote rabies prevention includes actions such as having dogs and cats vaccinated against rabies, performing the correct post-exposure protocol, and reporting suspicious cases. To this end, Sambo et al. (2014) formulated potential rabies messages, based on a "knowledge, attitudes and practices" (KAP) survey that was conducted in Tanzania.

The KAP survey indicates that, although the majority of participants were aware of rabies as a disease that is transmitted when bitten by an infected dog and that medical help is required after a dog bite, limited understanding existed about the importance of wound washing after a dog bite, the fact that rabies can be transmitted by animals other than dogs, and that rabies is virtually always fatal. Participants were also found to dispose of carcasses of animals that had died of suspected rabies, by "throwing them away", pointing to a situation that can potentially give rise to scavenger wildlife being infected when consuming meat from rabid animals. Based on these findings, the rabies message was formulated as follows: "Vaccinate your dogs and cats against rabies", "immediately wash your wound with water and soap and seek anti-rabies vaccination after a bite from a rabid animal", "all mammals

suffer from rabies", and "bury or burn carcasses of dead rabid animals" (Sambo et al., 2013, p. 8).

Depending on the context, a variety of messages have application in rabies control efforts. I concur with Fahrion et al. (2017), Rock et al. (2017) and the WHO (2017) that propose that the rabies message and dog bite prevention (DBP) message cannot be separated. Although not all dog bites are likely to cause rabies, prevention of any dog bite may result in the prevention of rabies. DBP education covers aspects such as what to do when a dog reacts aggressively, how to interpret a dog's body language accurately, and which actions to avoid when interacting with a dog (Lakestani & Donaldson, 2015).

Rock et al. (2017) frame dogs, rabies, human injuries and public policies as related issues in a One Health context, and argue that neither should be dealt with in isolation when planning an educational rabies control or guidance programme. Furthermore, linked to dog bites, is the aspect of fear of the disease, which may lead to fear of dogs, with implications for the welfare of dogs, and dogs suspected of having rabies being killed inhumanely (Cleaveland et al., 2006). As such, it is important that the message about rabies does not reinforce or create negative attitudes to dogs.

Message framing involves techniques that can convey effective health messages (Lu, Siemer, Baumer & Decker, 2017; Rothman, Bartels, Wlaschin & Salovey, 2006) that may be persuasive. Two interacting types of framing are possible in health communication, namely gain-versus-loss framing, and point-of-reference framing. Gain-versus-loss framing refers to how a message is formulated and whether or not it emphasises the benefits of taking a certain action (gain-framed appeal), or the cost of failing to take such action (loss-framed appeal). An example of a gain-framed appeal is "if you floss your teeth regularly, you will get rid of plaque and bacteria and have great breath", as opposed to a loss-framed appeal such as, "If you don't floss your teeth regularly, you will get plaque and bacteria and have bad breath". Point-of-reference framing refers to the target impacted by a given behaviour (Lu et al., 2017). Using dog vaccination as an example, targets could include the dog itself, other dogs in the community, the individual or household owning a dog or the broader community, as these are all affected by vaccinating dogs.

Some authors (Aldridge, 2006; Rothman et al., 2006) state that gain-framed messages are generally more effective when the target behaviour is prevention or risk averse behaviour, perceived to prevent something bad and maintain or promote good health, while loss-framed messages are more persuasive when the target behaviour is a detection or risk seeking behaviour, perceived to confirm something bad, e.g. having a screening test for cancer done. The same behaviour can be regarded as detection or prevention behaviour, depending on how one perceives it. If, for example, one thinks about having a cancer screen done as a way of confirming good health and preventing cancer, it is categorised as prevention behaviour but if one thinks of it as potentially getting bad news, such as confirming a diagnosis of cancer it is viewed as detection behaviour.

In support of this view, Gallagher and Updegraff (2012), in a meta-analysis of health message framing effects on behaviour, confirm the advantage of a gain-framed message for prevention behaviour but state that the converse – the need to have a loss-framed message for detection behaviour – is not fully supported by existing literature. They speculate that this finding may be linked to the variability and unique perceptions related to risks associated with behaviour. The authors quote several studies that indicate that loss-framed messages are more effective for people who consider themselves more at risk, and do not affect people who consider themselves at low risk in the same way. The perception of risk can thus mediate the effects of gain- or loss-framing on behavioural intentions (Lu et al., 2017).

Gain-loss framing and point-of-reference framing are both important elements in formulating a message. The points of reference or targets referred to earlier, differ in terms of psychological distance from the self; this distance may in turn influence how an individual processes information about certain behaviour (Lu et al., 2017). A close (proximal) point of reference can, for example, be the self (self-referencing), while one's family or community (self-other referencing) and the environment or animals (other-referencing) are progressively more distant. Gain-framed messages are more persuasive when the point of reference is more distant, while loss-framed messages are more effective in the case of self-referenced behaviour (Lu et al., 2017). Using the example of dog rabies vaccinations, if a dog is considered to be distant, it will be more effective to ensure that the message contains information

about benefits of vaccinated dogs. Should the message be more relevant to the self, such as wound washing, a loss-framed approach may be more effective.

Lu et al. (2017) explain this in terms of construal level theory, indicating that psychological distance will directly affect how people represent something. If people are psychologically close to a stimulus, they are more likely to interpret the stimulus in terms of concrete, specific representations (low-level construal), as opposed to more abstract, decontextualised interpretations (high-level construal) of psychologically distant stimuli. A message will be most persuasive when at the appropriate level of construal. Negative outcomes are postulated to be more vivid and concrete than positive outcomes; hence messages aimed at a proximal point of reference may be more effective in a loss-framed format. Conversely, a more distant point of reference implies better compliance with a gain-framed message.

While it may seem obvious that target behaviours associated with rabies prevention are all prevention behaviours (responding best to gain-framed messages, e.g. “You, your family and your dog will be healthier if you vaccinate your dog regularly”), the beliefs of the residents of Mnisi, Mpumalanga as reported by Thys et al. (2013) and listed in Chapter 1, point to the possibility of rabies vaccination being perceived by some members of the community as risk seeking behaviour. Taking into account the interaction between gain-loss and point-of-reference framing, I kept in mind that a loss-framed message may be more effective for PEP behaviours (“If you don’t wash a bite wound and go to the clinic, you could die of rabies”), and a gain-framed message for dog vaccination behaviour (“If you vaccinate dogs against rabies, you and your dogs will be healthier and happier, and healthy dogs will be better guard dogs and better friends for the children”) in planning and facilitating the intervention for this study. As such, my study includes an exploration of the contextual framing of rabies awareness messages, in an attempt to acknowledge the potential benefits of dogs to humans, and the role of human health-seeking behaviour in rabies control.

Mosavel, Simon, Van Stade and Buchbinder (2005) describe an example of how a participatory process may affect the framing of a message. These researchers attempted to engage in a cervical cancer awareness programme in a Western Cape community; however, the community helped them reformulate their research topic to “cervical health” instead of “cervical cancer”. By shifting from a loss-framed to a

gain-framed approach, prevention behaviour could be targeted more effectively. In the current study it was also important to obtain a sense of how the community viewed the rabies problem in order to ensure that messages were presented in the relevant frame.

In addition to message framing, I studied existing material on the communication process, prior to commencing with my study, both with regard to sharing the rabies message but also in terms of my own communication style during the intervention. Leeuwis (2004, pp. 49-58), who works on extension in the agricultural sector, distinguishes between the concepts “top-down planning” or “instrumental communication”, and “interactive communication” in the communication context. For top-down planning, goals and outcomes are defined in advance, whereas instrumental communication entails the definition of certain outputs with people who are being persuaded to adopt these goals. Both these approaches favour a one-way model of communication, where the message is determined in advance and does not consider the input of the recipient of the message.

Interactive communication, however, is a more dynamic process, based on network building, social learning and negotiation to induce change and innovation. With interactive communication, process management involves a flexible strategy resulting in unpredictable outcomes. The process management approach does not propagate pre-determined goals, policies and innovations, but focuses on generating and designing goals, policies and innovations in a participatory manner. Leeuwis (2004) cautions that certain potential risks apply when following an interactive communication approach, such as the process being time-consuming, not necessarily generating the expected level of enthusiasm from participants, not producing tangible results, and creating expectations that cannot always be met. However, if attention is focused on ensuring an effective facilitation process, such factors can be managed by relying on traditional participatory techniques, such as seasonal calendars, village transects, mapping and timelines (Leeuwis, 2004).

At a very basic level, communication implies a transactional process that involves two or more people being involved simultaneously in sending, receiving and interpreting verbal and nonverbal messages. This creates a degree of shared meaning, while retaining some individual meaning. An important part of

communication is effective listening, and ensuring proper understanding (Adams & Galanes, 2012). Tubbs and Moss (2010) offer some useful guidelines for empathetic listening such as following the other person in what is being explored rather than leading the conversation; listening to the feelings implied by the other, and responding to those rather than the "content" of what is said; and trying to stand in the other person's shoes (recognising the frame of reference) instead of responding from the own frame of reference. As a participatory researcher facilitating a community-based intervention, I had to make use of active, empathetic listening in order to clarify what participants said, and ensure that I attached the same meaning to what was said as the person who said it.

2.3.2 Using educational material to convey messages about rabies and rabies prevention

A large variety of educational material, mainly accessible on the internet, exists with regard to rabies prevention. In the context of this study, an intern student working in Mnisi for the Mnisi Community Programme (MCP) in 2013, collected existing rabies material. Some of the material had been translated into Shangaan by an environmental monitor working for the MCP, but had, to my knowledge, not yet been distributed in Shangaan at the time that I started my study. The purpose of this exercise was to obtain an idea of what the community might already have been exposed to in terms of rabies education.

I subsequently analysed sixteen examples of educational material on rabies, mainly sourced from the internet, with one pamphlet designed by the State Veterinary Services (attached as Appendix A), in terms of general themes and gain-loss framing. The messages and guidance captured in the material can broadly be divided into the following themes: nature of the disease, preventative measures, appropriate post-exposure prophylaxis (PEP) and general slogans. Table 2.1 captures more detail on the targeted type of health behaviour and the message framing used to communicate these aspects.

Table 2.1: Existing educational material on rabies (n=16)

Main themes	Message	Health behaviour targeted	Message frame
Nature of the disease	Rabies is a preventable disease	Prevention	Gain
	Rabies kills / Rabies is a deadly disease	Not specified	Loss
	It is easy to get rabies	Not specified	Loss
	This advice can save your life	Prevention or detection	Gain
Prevention	Vaccinate dogs against rabies	Prevention	Gain
	We can prevent rabies	Prevention	Gain
	Keep your dog healthy and happy – vaccinate	Prevention	Gain
	Dog bite prevention (be sensitive and kind to dogs and protect yourself)	Prevention	Gain
	Avoid contact with stray or roaming animals	Prevention	Loss
	Report all suspect cases	Prevention	Loss
	Do not allow pets to roam the streets	Prevention	Loss
	Leave wildlife alone	Prevention	Loss
Post-exposure prophylaxis	If bitten, wash the wound immediately and seek medical attention	Detection	Loss or gain
	Take people bitten by animals for immediate medical treatment	Detection	Loss or gain
	Tell adults if you are bitten	Detection	Loss or gain
	If you get bitten, contact your state vet or animal health technician	Detection	Loss or gain
Slogans	Together we can make rabies history	Not specified	Gain
	STOP rabies now, because you can	Not specified	Loss or gain
	Get a good start – be rabies smart!	Not specified	Gain
	Beware! Rabies kills!	Not specified	Loss

In addition to the summary in Table 2.1, The Global Alliance for Rabies Control (GARC) provides a wide variety of online resources available free of charge for rabies awareness and prevention programmes. These are geared towards different age groups and provide material for adults, learners and facilitators (GARC, n.d.). There are videos about various aspects of rabies, modifiable posters (to be used to advertise events, or to add an organisation's logo) and "frequently asked questions". The "Teaching Children" section captures a selection of comic strips, posters, fact sheets, activity books, colouring books, a snakes and ladders game, and videos. A variety of instructional media on rabies prevention is included, such as lesson plans, presentations and videos for children aged 6-14 years, and one teaching manual/poster/video combination for dog bite prevention. Most of the media is available in several languages, and is already used in community engagement projects in schools, mostly in the Gauteng province by students from the Faculty of Veterinary Science, University of Pretoria.

In addition to these resources, the Humane Education Trust (www.animalvoice.org) produces formal educational material designed for integration into the South African school curriculum, geared towards the various school phases. The Western Cape and Gauteng provinces are already utilising this material in public schools (Van der Merwe, 2017), integrating humane education into Life Orientation and other subjects. Teacher training workshops are offered by the organisation. While this material does not specifically focus on rabies control and prevention, it is relevant as it promotes empathy for animals and responsible animal ownership, referring to nurturing respect, kindness and compassion for people, animals and the environment (Mariti et al., 2011; Nicoll, Trifone & Samuels, 2008; Samuels, Meers & Normando, 2016).

Humane education − learning about the needs of animals − resonates well with the One Health approach, and implies application value at a different level in the context of rabies control, based on the link between animal abuse and inter-personal violence (Faver, 2010; Monsalve, Ferreira & Garcia, 2017). Humane education has successfully been utilised as a school-based strategy to prevent aggressive behaviour among children towards animals and people (Faver, 2010) and may promote the development of empathy for animals (Samuels et al., 2016; Taylor & Signal, 2005; Thompson & Gullone, 2003). As part of the life skills curricula in

schools, humane education has been reported to induce a sense of responsibility and empathy towards animals and the environment, as well as a reduction in fear of pets when children are exposed to such programmes (Mariti et al., 2011; Samuels et al., 2016). As children are often the ones who bring dogs to rabies vaccination points during mass vaccination interventions, it is important that they are included in educational programmes and guidance on rabies prevention (Muthiani et al., 2015).

In terms of the concept “responsible pet ownership” that is considered part and parcel of the rabies message, Sambo et al. (2014) question the general perception that many dog owners in African communities are not “responsible” dog owners. Their observations in Tanzania indicate that most owners practise “responsible” dog ownership to the best of their abilities, but are constrained by lack of available and affordable resources, rather than a lack of awareness. In designing an appropriate rabies awareness and action message together with the participants in the current study, it was thus important to refrain from making assumptions about people’s views of and attitudes to animals based on superficial observations instead of a deeper contextual understanding of the human-animal interactions at the study site.

2.4 ADDRESSING RABIES PREVENTION THROUGH COMMUNITY-BASED INTERVENTION

In this section, I explore community participation in veterinary interventions. I commence with an overview of the current state of veterinary community engagement in South Africa, introducing the concept of university-based community engagement and then move on to its current application in the veterinary profession. Next, I justify the use of participatory methods in veterinary sciences by discussing examples and potential uses of participatory methods in veterinary science in general, and in rabies control in particular. Lastly, I consider how the principles of strengths-focused approaches can be applied in veterinary community engagement.

2.4.1 Veterinary community engagement in South Africa

Community engagement can be defined in various ways – it may be specifically linked to higher education (Bender, 2008), in which context it involves the actions of a university in “establishing, maintaining and supporting relationships and links with the community” (Ferreira & Ebersöhn, 2012, p. 50). Community engagement in

tertiary education is often referred to as *academic service-learning* (ASL) or *curricular community engagement* (CCE), which implies an equal partnership between a community and university (students) (Bender, Daniels, Lazarus, Naudé & Sattar, 2006). ASL and CCE are distinguished from volunteerism and community outreach, which mainly benefit the community, and also from cooperative education and internship, where the main beneficiary is the student (Bender et al., 2006).

The University of Pretoria's mission statement foregrounds that research, and secondly teaching and learning, are its core functions, yet that community engagement should be integrated in both focus areas (University of Pretoria, n.d.). Community engagement integrated with teaching and learning can provide students with experiential learning opportunities. Such services provided by students should be relevant and meaningful to the students, university and community (Bender et al., 2006). Community engagement in the higher education setting is a complex activity and potential obstacles in terms of the relationships between researchers and community partners must be recognised and addressed (Ebersöhn, Loots, Eloff & Ferreira, 2015; Machimana, Sefotho & Ebersöhn, 2017).

In recent years, the conceptualisation of community engagement has involved a shift from following a knowledge transfer-based approach to a participation-based approach. Bringle (2014) refers to "a new model of civic engagement that emphasises partnerships that are democratic, reciprocal and transformative". It follows that research that is undertaken in the context of community engagement should be conducted *with* people rather than *on* them, which can potentially result in social transformation (Wood & Zuber-Skerrit, 2013).

Participation, as an essential element of community or civic engagement, therefore involves people in decision-making processes that may affect their development. Participation typically implies empowerment, which is reflected in the ability to make informed decisions, as opposed to the mere acquisition of skills and knowledge (Swanepoel & De Beer, 2011). Participation and empowerment theory are discussed in more detail in subsequent sections.

Community engagement is not limited to the mutually beneficial relationship between universities and communities. It can also involve other sectors including government

structures, non-governmental organisations, industry (Howard, 2015), health services (Kolopack, Parsons & Lavery, 2015) and veterinary services (Sonntag, 2011). In South Africa, the main role players in veterinary community engagement are the Faculty of Veterinary Science of the University of Pretoria (FVS) (the only faculty of veterinary science in the country), the South African Veterinary Association (SAVA), the National Department of Agriculture, Forestry and Fisheries (DAFF), and a variety of non-profit organisations.

At the FVS, third-year veterinary science students participate in a community engagement project as part of the module Veterinary Professional Life (VPL) 300, for which I am the responsible lecturer. These projects provide educational opportunities in schools in rural areas, where learners are exposed to topics in primary animal health care, One Health, animal welfare and veterinary careers. The SAVA project entails Community Veterinary Clinics (CVC) that mobilise veterinarians to offer clinical primary animal health care services, such as vaccinations, deworming and sterilisation and that have an educational focus. Currently, no specific requirement or preference exists to utilise participatory methodology when community clinics are set up. The South African Veterinary Council (SAVC), the statutory registration body for veterinary professions, thus supports community work in a variety of ways and has specifically expressed support for community participation in veterinary community engagement, but without providing clear guidance as to exactly what this should entail.

Since 2016, veterinary graduates have had to complete one year of compulsory community service (CCS), mostly in remote areas where no or limited veterinary services are available. This process is managed by DAFF and has created a new awareness in the profession of the need for skills development of veterinarians in the field of community development. Non-profit organisations, such as the Society for Prevention of Cruelty to Animals, Animal Anti-Cruelty League, People's Dispensary for Sick Animals, Vets for Change and many others are involved in the provision of veterinary services to indigent communities in various parts of South Africa. These services are offered mostly free of charge with minimal, if any, participatory involvement (Sonntag, 2004-2017, personal observation; South African Veterinary Association [SAVA], n.d.; South African Veterinary Council [SAVC], n.d.; Department of Agriculture, Forestry and Fisheries [DAFF], n.d.).

To my knowledge, none of the current interventions such as weekly or monthly community or primary animal health care clinics, mass vaccination campaigns and mass sterilisation campaigns by any of the organisations mentioned above include participatory methods. Only a small number of studies that are discussed further on involving veterinary science and communities, have utilised participatory methods. As such, this study may provide some evidence to assist in the formulation of future community engagement policies in the veterinary sector.

2.4.2 Potential value of utilising participatory methods in veterinary community engagement projects

In considering the potential value of utilising participatory methods in veterinary science, I searched the existing literature base for evidence of how people in rural South African communities view domestic animals and dogs in particular, as well as existing perceptions relating to animal health in general. I furthermore searched for literature on the use of participatory methods in veterinary contexts locally and elsewhere.

2.4.2.1 The function of domestic animals in South African communities

Berrian et al. (2016), who conducted a study in a location adjacent to the current research site, found that 68% of all households own animals, of which chickens are the most prolific, followed by dogs, cattle, goats, cats, pigs, ducks and pigeons in order of decreasing abundance. Closely related, Beinart and Brown (2013) conducted an extensive study involving a large number of rural livestock farmers in different sites in the North West, Free State and Eastern Cape provinces in South Africa. They found that livestock have both economic value and cultural importance in these communities. Cattle, in particular, are associated with wealth and status, being viewed as a better investment than cash or money in the bank. Goats are typically kept for traditional ceremonial purposes, as a source of meat, and white goats in particular for healing and initiation rituals. Donkeys are relied on for draught purposes, especially in the North West province, and are used in remote areas to collect and transport water and wood. Donkeys are considered strong and resistant to disease (Beinart & Brown, 2013).

In a similar study conducted in the Limpopo province, South Africa, on ethnoveterinary (plant-based) practice among Tsonga (Shangaan) speaking people, it was found that the following species are generally kept, in order of importance: cattle, goats, chickens, sheep, dogs and donkeys. While production animal species are medicated when ill, preferably with pharmacological products but also with ethnoveterinary medications, it was evident that dogs and donkeys are rarely treated for disease, as they are considered resistant to diseases (Luseba & Van der Merwe, 2006). Closely related, Beinart and Brown (2013) indicate that livestock owners generally consider it important to keep their animals healthy, with an increasing preference for Western medicines and the accompanying need for more accessible veterinary services.

With regard to dogs, a study conducted in two rural areas in the North West and Gauteng provinces respectively, indicates that 88% of the 110 dogs involved had not received any veterinary attention prior to the study (Minnaar & Krecek, 2001). It follows that standard veterinary procedures such as sterilisation, deworming and vaccination were seemingly not well known or performed. When asked which action dog owners would take if their dogs were to get sick, most of the owners reported that they would adopt a “wait and see” approach. The vast majority of dog owners kept their dogs for security reasons, while a very small number kept them as pets. Hohn, Williams and Kirkpatrick (1992) similarly found in their study that the main reason for keeping dogs as reported by clients of the veterinary hospital at the Medical University of South Africa (MEDUNSA), was for protection and to a lesser extent, for hunting or racing. Thys et al. (2013) found in their study in Mnisi − the area where the current study site is situated − that the main roles of dogs are associated with security and hunting, with the former referring to dogs guarding homes from thieves, protecting people from criminals and livestock from thieves and criminals.

A study performed in Soweto, an urban area in Johannesburg, South Africa (McCrindle, Gallant, Cornelius & Schoeman, 1999), indicates that dogs are kept mostly for personal security, as companions, for guarding property and to keep feral cats away. Challenges reported by participants in McCrindle and partners’ study relate to stray dogs in the roads and in their yards; dogs fighting, killing chickens, making a noise and biting children; faecal contamination of public places; bitches in

season; dogs tearing open rubbish bags, and uncontrolled breeding. In this community, the majority of people knew that the sterilisation of dogs can prevent uncontrolled breeding and recognised the names of commercial dog foods. The authors ascribe these findings to both urbanisation and the work of local animal welfare organisations. As a result, most of the participants utilised the services of animal welfare organisations for veterinary treatment, while a very small percentage (0,5%) made use of private veterinary services and 12,2% did not take any action when their animals were sick.

In terms of generally upheld attitudes towards dogs, communities can be described as humanistic, protectionistic or dominionistic (Blouin, 2013). In a humanistic orientation, the dog has elevated status that is equal to humans, and is considered a member of the family. The owner plays the role of parent or friend. Protectionists consider dogs as superior to humans in that the needs of the dog are considered above all else, and the dog will never be relinquished. These owners consider themselves to be guardians or companions of their dogs and they have a universal concern for the welfare of all animals. The dominionistic orientation considers dogs to be below humans, with a clear utilitarian function. Dogs are not cherished as part of the family, and will be relinquished if presenting challenges. Blouin (2013) points out that the three orientations represent three different cultural contexts, based on different exposure to different cultural messages and experiences. It is, however, possible for individuals to switch between orientations, depending on their circumstances.

2.4.2.2 Views on animal disease and veterinary services in rural areas in South Africa

In terms of how animal disease is viewed by livestock farmers, Beinart and Brown (2013), whose study involved indigenous knowledge of livestock diseases among South African farmers, found that most livestock owners recognise common diseases in their animals but do not necessarily attribute the diseases to Western biomedically identified causes. They often link disease to environmental and nutritional causes, and sometimes to witchcraft or supernatural causes (Beinart & Brown, 2013). Farmers who had attended formal education presented by the Department of Agriculture, Forestry and Fisheries seemed more likely to understand

biomedical causes of diseases (Beinart & Brown, 2013). Participants in a study conducted in Mnisi (Berrian et al., 2016) seemed aware of a number of animal diseases, mostly related to chickens and livestock, and of the fact that animal diseases can be passed on to human beings. Zoonotic diseases identified by participants include rabies, skin conditions involving hair loss and itchiness, and tuberculosis. Concerning human health issues, the authors found that mere knowledge of health risks is not sufficient to change behaviour.

Beinart and Brown (2013) uncovered a number of local and cultural beliefs relating to animal disease. Various beliefs, for example, came to the fore about the presence of women in a cattle kraal that can affect the health of livestock. As shown by Thys et al. (2013), local beliefs about rabies abound in the Mnisi area where the current study is located, implying a possible barrier in communicating the cause and pathogenesis of rabies.

With regard to current perceptions of veterinary services in South Africa, the majority of livestock owners in a study conducted in KwaZulu-Natal knew about the provincial veterinary services offered (Hesterberg, Bagnall, Perret, Horner & Gummow, 2007). In a similar study conducted in Mnisi (Berrian et al., 2016), most of the participants seemed satisfied with the availability and affordability of veterinary service in their community at the time of the study. However, participants indicated the need for more detailed guidance on animal diseases, and improving the functioning of cattle dip tanks in the area.

Beinart and Brown (2013) found that in spite of years of veterinary interventions[6] in rural South Africa, many of the livestock owners had a limited understanding of the biomedical aspects of disease in animals. The authors also noted a need among local farmers for printed information leaflets containing information about livestock diseases, but more importantly, recommended community engagement, to be facilitated by social workers in order to address misconceptions about animal diseases. Other authors specifically recommend participatory methods as suitable

[6] The authors specifically refer to a longstanding system of cattle dip tanks in rural areas, managed by provincial veterinary services, where cattle are dipped free of charge while veterinarians and animal health technicians do disease surveillance of the animals.

tools for veterinary community engagement (Catley et al., 2001, Catley et al., 2002, Catley et al., 2004, Catley et al., 2012, Jost et al., 2007; Van Dijk, Pradhan, Murad & Ranjan, 2013).

2.4.2.3 The use of participatory methods in veterinary community engagement

Catley and Leyland (2001) emphasise the poor development of veterinary services in certain parts of the world, notably East Africa, and are of the opinion that community participation in rural development efforts hold value. Participatory methods were first applied in the form of participatory rural appraisal in the agricultural field, and have since spread to many more disciplines, including health and veterinary science. According to Amazigo, Leak, Zoure, Njepuome, and Lusamba-Dikassa (2012), community-driven interventions (CDI) have been extremely successful in human health discipline. The authors cite several examples, such as the fight against onchocerciasis (river blindness) in West Africa, bringing lymphatic filariasis under control in Ghana and Kenya, and the sustainable control of malaria in Africa and Vanuatu, an island in the South Pacific Ocean. The CDI model is based on the mobilisation and education of communities on what they stand to gain, as well as the acceptance of changed power relations by health workers. The approach described by Amazigo et al. (2012) involves the training of community members to enable them to deliver simple health interventions to their peers, while liaising with health facility staff. CDI empowers communities to take charge of their own health.

Participatory methods have thus far been applied for a variety of animal health issues in Africa, such as the training of community animal health workers (CAHWs), diagnosing livestock disease (participatory diagnosis) in southern Sudan and Tanzania, analysis of factors affecting disease in cattle (participatory analysis) and participatory epidemiology that uses participatory methods to obtain a better understanding of animal diseases and their control. I referred to further applications of the CAHW model in Chapter 1 (Catley et al., 2001, Catley et al., 2002, Catley et al., 2004, Catley et al., 2012, Jost et al., 2007).

An exemplary study in India (Van Dijk et al., 2013) utilised participatory approaches to create collective responsibility in a community to improve the care of working

equids (donkeys and horses used as draught animals) sustainably. One of the challenges faced by the non-profit organisation was how to change the mindset of community members from being passive recipients of free clinical services to adopting their own preventive practices. In addition, the veterinary team's perception that only veterinary services can improve the health and welfare of animals, required adapted perceptions. It was found in that study that participatory approaches can result in significant creativity and innovation, as a wide variety of participatory methods were utilised in the development of a welfare assessment tool by the animal owners themselves. Participants identified health and husbandry risks for their animals and assessed the physical and behavioural signs related to these. They then agreed on individual and collective action to improve animals' health and care. As a result, sustainable change and improvement in the condition of the animals occurred, and community-based self-help groups were formed. This approach has subsequently been used in over 2 000 villages in India, some of which have been able to continue with the PRA-approach without additional field team support. In applying findings such as these to the focus and aim of my study, it may be possible to demonstrate the sustainability of a community-based intervention in support of animal health care and more specifically, the prevention of rabies.

In South Africa, Getchell et al. (2002) have utlilised PRA to ensure that recommendations on internal parasite control can be implemented by farmers, following a survey of internal parasites in domestic ruminants. The aim was to investigate challenges that livestock owners faced when raising cattle, and to evaluate the level of livestock owners' knowledge of internal parasites. Village and farm mapping, transect walks and seasonal calendars were used in workshop settings and on farms to generate data.

Vatta et al. (2011) provide more examples in the form of a series of on-farm research projects involving clinical research and the training of small-scale goat farmers in the KwaZulu-Natal province of South Africa. Three different communities were involved in the study, with increasing levels of community participation in each stage of the study. In the first village, community participation was limited as the researchers focused on a clinical study to validate a testing method for internal goat parasites. In the second community, interviews and focus group meetings were followed by workshops and on-farm practical training in goat husbandry and primary animal

health care, coinciding with several monthly visits to the village by the researchers. In the third village, a goat-keepers' interest group was formed that provided input for the compilation of a goat-keepers' manual, involving PRA-exercises, interactions with farmers from the second community, and regular meetings. This study indicates that a higher level of community participation will have better results in terms of ownership of skills and knowledge.

In all the studies described above, animal owners were involved in the care of their animals. In my study, the primary objective was to investigate how PRA could facilitate a broader community awareness, community-based guidance and active responses to a One Health risk, where there is thus no direct link with individual animal ownership of the participants and specific animal health conditions. In my exploration of existing literature, I was unable to find any reference to the utilisation of PRA-methodology in the veterinary field in the context of rabies control in a rural community in South Africa. As such, this study may illuminate the suitability of PRA for promoting primary animal health care and more specifically rabies awareness, guidance of community members, and preventative action.

Sound statistics on dog vaccination, rabies prevalence as well as dog population numbers are necessary to ensure the success of mass vaccinations with regard to rabies control in addition to dog ecology knowledge. Conan et al. (2015a), in their article on dog demographics on rabies control in Hluvukani, propose that the community be involved in completing a census of dogs preceding annual vaccination campaigns, and that this may even be extended to involve the community in planning campaigns in collaboration with veterinary services.

Community involvement in facilitating awareness of and action regarding rabies can be expanded to active participation in surveillances of rabies cases. In Kenya the application of community-based active surveillances by utilising rabies workers that were selected from and with the community to investigate and report on suspected cases, has proven to be superior to government-initiated passive surveillance strategies in obtaining accurate information on such cases (Kitala, McDermott, Kyule & Gathuma, 2000). Such activities directly involving communities, to my knowledge, have not yet been done in South Africa, and may be a future outcome of the PRA-facilitated intervention I undertook in Hluvukani.

2.4.3 Following a strengths-focused approach in community development

Following World War II, approaches to community development started shifting from deficit- or problem-based approaches to approaches that focus on solutions and capabilities. Leaders in the field include Paolo Freire and Robert Chambers (Schenk, Nel, & Louw, 2010). A simultaneous move occurred in the field of psychology towards “positive psychology”, initiated by Seligman in 1998, who called on the scholarly community to move away from studying mental disease merely from a problem-based perspective, to focusing on positive features that make life worth living (Allen & McCarthy, 2016; Eloff, 2008; Shrestha, 2016). In Africa, where collective capacity and resilience have been culturally entrenched over years (Ebersöhn, 2008; Ferreira, 2008), a positive, strengths-based approach is regarded as particularly relevant.

Several models in health care, organisational management and community development have developed in synergy with the positive psychology movement, including those of solution-focused therapy, appreciative inquiry and asset-based community development. All these approaches are people-centred, strengths-based, and rely on reflection and learning to achieve outcomes. They are used in different contexts, based on specific principles and utilise different tools. The contexts, for example, vary from the application of solution-focused therapy mostly in one-on-one counselling sessions, while appreciative inquiry often focuses on organisational change but is also used in the field of mental health, and with asset-based community development being an approach to community development (Grieten et al., 2018; Koob & Love, 2010; McAllister, Moyle & Iselin, 2006; McCarthy, 2017; Mathie & Cunningham, 2003; Mengesha, Meshelemiah, & Chuffa, 2015; Nel, 2015; Nicholas, 2015; Nyaupane & Poudel, 2012; Samba, 2013; Schenk et al., 2010). In the following paragraphs, I briefly discuss the principles and tools of these approaches.

When following a solution-focused approach, problems are viewed as challenges and the focus falls on solutions and how these can be optimised. The origin of a problem is not viewed as important as the solution to it (Bannink, 2006). An example of solution-focused questions that can be addressed to people facing challenges would be, “If your problem were solved, what would be different?” This encourages

positive goal formulation and is often referred to as the “miracle question” (Bannink, 2006; Nicholas, 2015). Another example is the “coping question” such as, “How did you manage to overcome this difficulty?” that leads to exploring one’s own assets (Bannink, 2006, p. 151; Koob & Love, 2010). Scaling is used to allow people to rate on a scale of zero to 10 to what extent their hopes have been realised. This is done not to evaluate the problem, but to determine to what extent the individual achieved his or her goal or dream (Nicholas, 2015). Even though the participants in the current study were not clients requiring guidance in solving problems, the solution-focused approach provided me with guidelines for questioning during workshops and group discussions. It allowed me to emphasise the principle of participants being the masters of their own destiny as opposed to being told how to address challenges, and aligns well with the participatory, strengths-focused and empowerment approaches I followed.

Appreciative inquiry is a theory, research method, and participatory intervention originally utilised for organisational change but with application in community development and health care (Grieten et al., 2018; McCarthy, 2017; Nyaupane & Poudel, 2012; Samba, 2013; Schenk et al., 2010). It was first articulated by David Cooperrider in 1986 (Grieten et al., 2018) and entails a collaborative quest to find the life-giving energies that can enable organisations, individuals and communities to function at their best (Grieten et al., 2018; McCarthy, 2017; Nyaupane & Poudel, 2012; Samba, 2013). The process of appreciative inquiry follows four steps, namely the discovery phase (all stakeholders are engaged in sharing the things that are working and giving life and energy to the organisation), the dream phase (building a future vision collaboratively), the design phase (planning how this vision can be achieved) and the destiny or delivery phase (the implementation of the dream). The approach is appropriate for community development because it allows for validation and appreciation of local knowledge through participatory methods that can be applied when participants are not fully literate, leading towards empowerment of marginalised people (Nyaupane & Poudel, 2012).

More specifically, asset-based community development (ABCD) implies a focus on assets rather than the needs and problems (deficit model) of a community, and the option to look for small successes and build on these. Kretzmann and McKnight are credited with spearheading this approach (Green & Goetting, 2010). In a needs-

based approach, problems are identified and residents may be so focused on what is missing or wrong, that they cannot recognise what is working. The deficit model also tends to result in dependency on external help. On the contrary, the asset-based approach aims to build capacity in a community and to strengthen existing assets, celebrating small triumphs, in support of a positive attitude among residents (Haines, 2009; Kretzmann & McKnight, 1993; Mengesha et al., 2015).

Kretzmann and McKnight (1993) describe three basic characteristics that define ABCD, namely that it is asset-based, internally focused (local residents control the process) and relationship-driven (constantly developing and improving relationships between local residents, local associations and local institutions). Individuals, associations and institutions are the sources of assets in a community. Although the focus in ABCD falls on building local capacity in communities, it does not exclude the utilisation of external resources but rather emphasises the importance of leveraging local resources to gain access to outside support. Professional assistance from outside should be responsive to the local community (Green & Goetting, 2010).

As such, ABCD appreciates and mobilises community talents, skills and assets, and emphasises community-driven development as opposed to development driven by external agencies. Past successes are identified and analysed, social capital is recognised, and participatory approaches to development are favoured (Cunningham & Mathie, 2002; Mengesha et al., 2015; Nel, 2015). In order to mobilise assets, the first step is to identify the assets in a given community, usually through a process of asset mapping. This is followed by a collaborative process, favouring participatory methods, to create a strategy to utilise the identified assets to achieve common goals (Cunningham & Mathie, 2002; Green & Goetting, 2010).

The asset-based approach has been applied successfully in a variety of sectors. In the public health sector, for example, communities have been empowered to identify and capitalise factors that may enhance good health to improve quality of life, leading to improved self-esteem, and reduced dependence on public health services (Morgan & Ziglio, 2007). In the educational field, Ferreira and Ebersöhn (2011) relate the asset-based approach to coping and resilience as the underlying philosophy in their study on teachers' ability to provide psychosocial support in schools. Their study indicates how teachers were able to provide support by

becoming aware of their own abilities, which they were already utilising, and that were further developed through PRA-processes facilitated by the researchers to support vulnerable members of the community. By recognising, accessing and mobilising their own assets, teachers were able to carry out pastoral tasks in the school-community. Through collaborative partnerships, they were able to provide support in the form of lay counselling for children and families, food parcels, vegetable gardens, an HIV/AIDS information centre and community support groups. I concur with these authors that an asset-based, participatory intervention implies the potential to lead to increased resilience and well-being in other contexts as well. As a result, I applied the asset-based intervention approach that is proposed by Ferreira and Ebersöhn (2011) in my study.

Green and Moore (2004) supply guiding principles for asset-based community engagement. In undertaking my study, I specifically relied on the following principles:

- Everyone has gifts: People generally can and want to contribute. As such, an unrecognised capacity can be found in every community.
- Relationships build a community: An intentional effort to build, nourish and utilise relationships is at the core of all community building initiatives.
- People care about something: As people in communities are motivated to act, the challenge is to discover their motivation to act.
- Asking questions rather than giving answers will invite stronger participation: People can be invited to find their own answers for problems.
- Citizens are at the centre: It is important to engage the wider community as actors (citizens), rather than as mere recipients of services (clients).

As I was unable to locate literature on the application of strengths-based approaches in veterinary science or veterinary community engagement, my study may contribute to this body of knowledge. In applying the findings of other studies to the context of the current study, I was able to explore the possibilities of a strengths-focused approach in a veterinary and One Health context.

2.5 CONCLUSION

In discussing existing literature in this chapter, I have attempted to foreground the knowledge already available on the topic of my study and indicate where ongoing

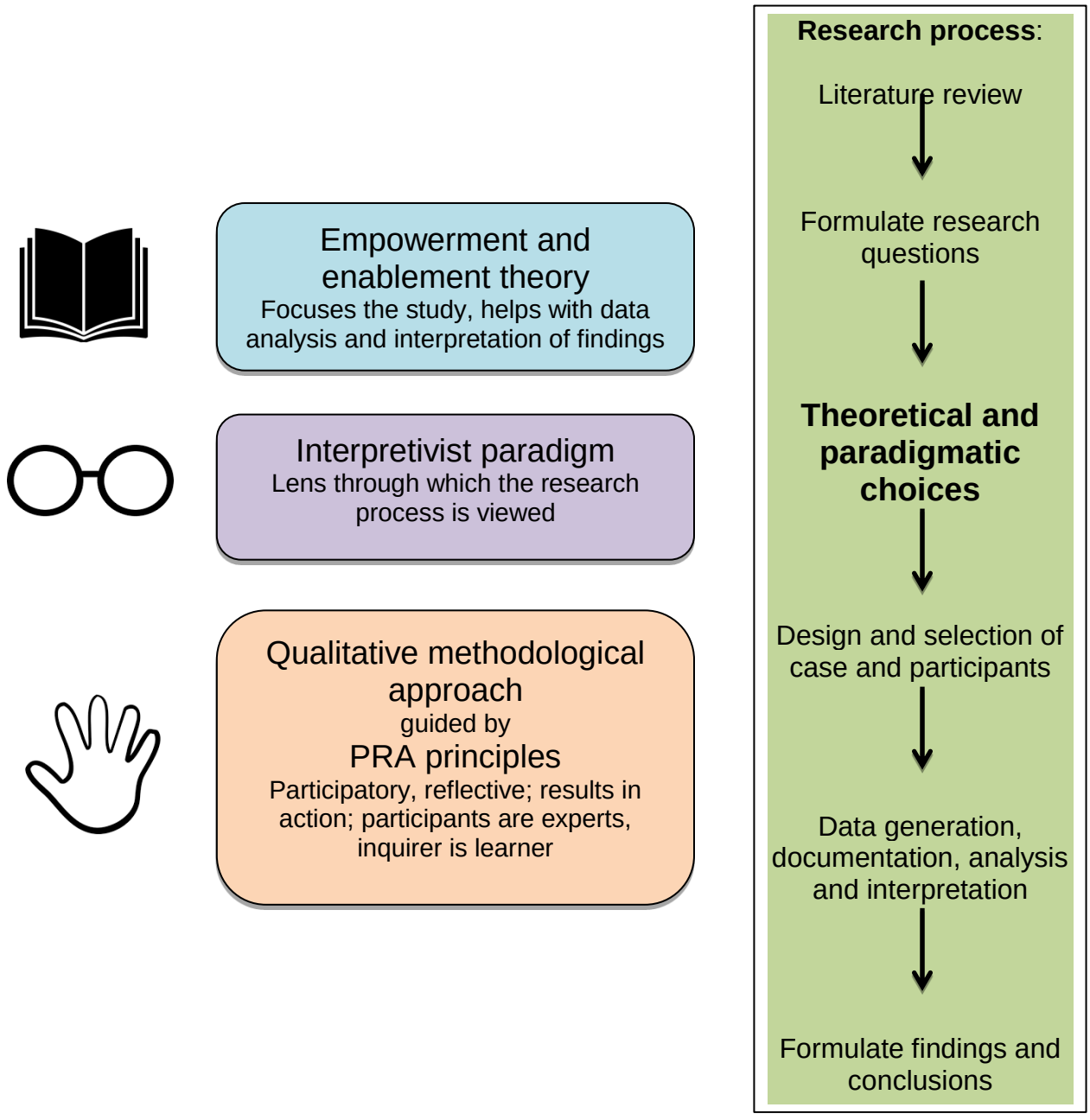
research is required. I firstly examined the epidemiology of rabies, referring to the different approaches to rabies prevention, and how this relates to the One Health concept. Next, I considered what the “rabies message” might be and how it could be framed to result in awareness and action in the target community, taking into account the framing of existing material on rabies prevention. Finally, I examined community engagement as a higher education and veterinary professional activity, situating the latter internationally and within the South African context. I concluded with an exploration of strengths-based approaches in community development and how these may be incorporated into the context of my study.

In the next chapter, I discuss and justify the theoretical and paradigmatic choices that guided me in conducting an empirical study. I explore empowerment theory as selected theoretical framework, the interpretivist paradigm as meta-theory, and the application of PRA-principles in utilising a qualitative methodology approach.

CHAPTER 3

THEORETICAL AND PARADIGMATIC DECISIONS

OVERVIEW OF THE CHAPTER



3.1 INTRODUCTION

In Chapter 2 I discussed existing literature I consulted related to rabies, its prevention, the rabies message and the role of community engagement in rabies prevention efforts. I focused on different rabies prevention approaches, possible barriers to rabies prevention, and the One Health approach within which rabies prevention can be situated. Lastly, I discussed community engagement in the veterinary context and foregrounded the potential value of strength-based approaches in community development and rabies control.

In this chapter I discuss the choices I made in terms of a theoretical framework (empowerment and enablement), meta-theory (interpretivism) and methodological approach (qualitative study guided by PRA-principles). I link my choices to the research questions and the purpose that guided my study.

3.2 THEORETICAL FRAMEWORK: EMPOWERMENT AND ENABLEMENT

Theory assists researchers in determining which data is relevant during interpretation of the data, but also when modifying data (Mertens, 1998; Rappaport, 1987). A theory is based on certain assumptions, some of which are discussed in the next section for empowerment theory, which I selected as theoretical framework.

3.2.1 Empowerment theory

Many definitions of empowerment exist. Perkins and Zimmerman (1995, p. 570) explain empowerment as “a process by which people gain control over their lives, democratic participation in the lives of their community and a critical understanding of their environment”. Fawcett et al. (1995, p. 678) define empowerment as “the process of gaining influence over events and outcomes of importance that can occur at individual, group and community level”. Empowerment can thus be defined in terms of a process and outcome, as “an intentional ongoing process centred in the local community, involving mutual respect, critical reflection, caring, and group participation, through which people lacking an equal share of valued resources gain greater access to and control over those resources” (Perkins & Zimmerman, 1995, p. 570). Klein (2014) summarises the different definitions of empowerment by referring to three main concepts, viewing empowerment as creating a structure that

provides opportunities for improvement, as something that can be viewed as choice and decision-making ability, and thirdly, as being conceived as relations of power.

As such, empowerment implies various principles, such as a focus on individual strengths and competencies that can lead to social change, self-determination, identifying strengths rather than challenges, hopefulness, promoting social justice and collaboratively exploring problems rather than blaming victims (Rappaport, 1987). Empowerment, however, means different things to different people in different contexts, and its meaning can also change over time (Zimmerman, 1995; Foster-Fisherman, Salem, Chibnall, Legler & Yabchai, 1998). This multiplicity and dynamic nature of the concept situate the study of empowerment well within the confines of interpretivism and participatory research (Christens, Collura & Tahir, 2013; Foster-Fishman et al., 1998; Dworski-Riggs & Langhout, 2010; Perkins & Zimmerman, 1995).

Empowerment can take place on the individual, psychological level, and manifests as self-esteem, an internal locus of control (Bhana, 2014), self-belief and internal motivation (Klein, 2014), yet also at a structural level in a community, where shifts in power balances may manifest as changes in the control of resources, notably economic and knowledge resources (Bhana, 2014), and at organisational level (Peterson, 2014). Zimmerman (1995) conceptualises psychological empowerment as entailing three components – the *intrapersonal* component that relates to how people think about themselves (perceived control and competence), the *interactional* component that refers to a critical awareness of the sociopolitical environment and how to mobilise resources, and the *behavioural* component that represents an active engagement to change the system or environment. Subsequent studies have, however, failed to support consistent, strong co-variation among these three dimensions (Peterson, 2014), leading to a call for development of new conceptualisations of empowerment, that focus on defining and measuring empowerment as a higher-order multidimensional construct (Peterson, 2014).

Christens et al. (2013) characterise the concept of psychological empowerment by differentiating between two forms of psychological empowerment, namely at the emotional and cognitive level. These authors introduce the concept of *critical hopefulness* as a combination of the two constructs of critical awareness and learned

hopefulness, which are said to be linked to emotional and cognitive empowerment respectively. In this regard, emotional empowerment will occur at the intrapersonal level and involve the development of learned hopefulness, which is defined as perceived and actual control of one's circumstances (sociopolitical control), and may contribute to resilience. The cognitive, interpersonal component of psychological empowerment refers to an understanding of the sociopolitical environment (critical awareness) and may enhance the ability to distinguish between controllable and uncontrollable circumstances, so that energy can be focused where some degree of control is possible. Interestingly, critical awareness and learned hopefulness will not necessarily co-vary. The goal of empowerment is for all community members to have access to control of the resources in their lives, even if this does not mean absolute control of all boundaries (Dworski-Riggs & Langhout, 2010).

An understanding of *power* underlies the understanding of empowerment. Empowerment can be seen as "the (re)distribution of power to those who historically have had none" (Klein, 2014, p. 643), implying that power dynamics are part and parcel of empowerment, since power relations exist in all spheres of society, including the social, economic, cultural and political worlds. Dworski-Riggs and Langhout (2010, p. 215) refer to power as "a network of social boundaries that constrain and enable action for all actors". Power asymmetries exist when one person or group has more control over the boundaries to his/her or their actions than others. Boundaries of power are therefore neither natural nor inevitable as they imply political mechanisms that are subject to change.

Watling Neal and Neal (2011) refer to power as the ability of an individual or group to control another individual or group, and define this as a structural phenomenon in terms of resources and relationships. Power emanates from occupying an advantageous position in a pattern of relationships that can give some individuals or groups more access to and control over resources than others. Power thus does not relate to an attribute of a particular person or entity, but resides in the often complex and dynamic relationship between two or more such entities (Watling Neal & Neal, 2011; Watling Neal, 2014). Resources may include physical resources such as time and money (Zimmerman, 1995) but also more subtle concepts such as agenda-setting (those who control which issues are set for public discussion, or the majority political party, have more power) or shaping a shared consciousness (influential

people and groups can spread ideas that affect the perceptions of others). The implications for empowerment practice are that empowerment processes typically involve changing relationships, or creating new relationships in a resource exchange network (Watling Neal & Neal, 2011).

Empowerment supports a strengths-based approach that recognises, respects and utilises the inherent assets and resources of a community (Brodsky & Cattaneo, 2013). Other strengths-based concepts, such as resilience and a capability approach, are often associated with empowerment (Brodsky & Cattaneo, 2013; Christens et al., 2013; Perkins & Zimmerman, 1995; Shinn, 2015). Both participatory research and the asset-based approach that I utilised in my study imply empowerment processes, and support my choice of empowerment theory as theoretical framework. I applied the principles of empowerment theory by following a process that would allow the participants to recognise their own abilities and assets, and utilise these to their benefit and that of the community, providing them with the ability to make informed health-related decisions.

Fawcett et al. (1995) propose four strategies for facilitating an empowerment process and its outcomes, namely to enhance experience and competence by activities such as asset mapping; to enhance group structure and capacity by, for example, providing technical assistance for strategic and financial planning; to remove social and environmental barriers by conducting meetings and activities in diverse communities; and to enhance environmental support and resources through promoting celebration and recognition of community accomplishments. These strategies align well with participatory and asset-based methods. In applying these to my study, I attempted to utilise methods that would enhance recognition of strengths and encourage participants to participate fully and with confidence. I provided technical information as requested by the participants when they were ready for this and without imposing any ideas on them. I also kept back when they were learning from one another and acted independently. As such, empowerment theory assisted me in framing my practical approach during the PRA-intervention.

Furthermore, by understanding the broadness of the empowerment concept in that it involves individuals as well as communities, operates at both an emotional (intrapersonal) and cognitive (interactional) level, and requires an understanding of

relationships, I could obtain a more holistic view of the participants, the world they inhabit and the internal and external factors that may have impacted on their perceptions of power and control. The theory sensitised me to issues of power that could have affected my relationship with them.

3.2.2 Participation and empowerment

This study aimed to facilitate increased rabies awareness and action in a specific rural community. For such an intervention to be successful, the community first had to recognise rabies control as a relevant issue. Once identified as a problem, the necessary information could be discussed, on request, to help the community decide how best to address the challenge and to empower them in terms of making their own decisions. If a community takes ownership of a problem through empowerment, they are more likely to engage actively in a community-based project such as a rabies prevention initiative.

The principles of empowerment and facilitation, rather than imposition and adaptability, are central to participatory approaches in community engagement settings. As such, community development typically focuses on facilitating a learning process that results in good decision-making skills and ownership, which can be achieved when people take full responsibility for a project (Schenk et al., 2010; Swanepoel & De Beer, 2011). Participatory methods where researchers and participants collaborate, go beyond the mere solving of a problem in a community towards transformation (of both researcher and participants) and improving the lives of those concerned. The outcome is not simply a better understanding of the problem, or even its successful resolution, but to make people aware of their own abilities and resources that can be mobilised towards social change. This relates to empowerment, which is also an aim of participatory research (Bhana, 2014).

Furthermore, it is important that participants prioritise the issue being addressed − in the case of my study, rabies awareness and action − for a participatory intervention to be successful. If other problems are more important than the issue at stake, those problems cannot be disregarded (Catley & Leyland, 2001). As such, true empowerment that leads to transformation requires of participants to recognise the potential for change, view this as important and prioritise their contribution in addressing challenges.

3.2.3 Empowerment and enablement

Janse van Rensburg (2014) argues that empowerment and enablement are different concepts. Where empowerment refers to a devolution of power from one to the other, and thus implies that power devolves from a more powerful entity (for example the researcher) to a less powerful entity (the community), enablement does not imply power imbalances (Janse van Rensburg, 2014). Enablement can rather be described as giving someone the authority or means to do something, facilitating, guiding, or otherwise collaborating in a way that people obtain the means and opportunity to participate in shaping their own lives. It is collaborative, reciprocal, focused on mutual transformation, and participatory (Janse van Rensburg, 2014).

These concepts are, in my understanding, not necessarily excluded from empowerment, as I also do not view the definitions of empowerment as merely implying the devolution of power (Klein, 2014). The word “giving” in the definition of enablement may once again imply a power imbalance, as with one entity having more, giving to another entity that has less. However, a stronger emphasis is placed on mutual transformation and participation in definitions of enablement, whereas empowerment is seen in conjunction with such approaches rather than embedded in them. As such, enablement as discussed here is perhaps better fitted to my study than the all-encompassing concept of empowerment.

Closely linked to empowerment and enablement, is the concept agency that refers to the ability to make one’s own choices to fulfil goals (Gillespie, 2012), control one’s own destiny (Hojman & Miranda, 2018), take purposeful action to influence one’s own life situation (Eteläpelto, Vähäsantanen, Hökkä & Paloniemi, 2013) and purposefully act to follow one’s aspirations (Klein, 2014). From a sociocultural point of view, agency is related to the ability to self-reflect, and to see a situation from another’s perspective (Gillespie, 2012).

Enablement promotes agency through participatory, mutually negotiated and beneficial engagement that is based on a sincere belief that people possess the ability to be active agents of change (Janse van Rensburg, 2014). Agency leads to change and can be enhanced through the presence of enabling environments that focus on abundance rather than scarcity, and embrace mutuality and reciprocity (De Beer, 2014). I regard enablement as leading to agency and as a possible outcome

of participatory engagement. As such, this concept is relevant to my study. I more specifically subscribe to the principles that support enablement, such as a solution-focused, strengths-based approach, which may ensure that participants are actively involved not only in the engagement itself but also in the decisions made that could affect the sharing of knowledge, responsibility and power.

I relied on empowerment and enablement theory as theoretical framework to guide my investigation and subsequently situate and interpret my findings in a particular framework. This in turn enabled me to compare the results to existing theory, and to interpret and report on the results in a focused manner (Flick, 2014; Mertens, 1998; Silverman, 2014).

3.3 META-THEORY: INTERPRETIVISM

The way in which a researcher philosophically views the ontology, epistemology and methodology of a study determines the paradigm in which the researcher works (Denzin & Lincoln, 2011; Lincoln et al., 2011). According to Lincoln and Guba (1985, p. 15) a paradigm is "… a systematic set of beliefs, together with their accompanying methods". The paradigm can be compared to a lens through which the researcher sees the world.

The epistemological paradigm that I selected for this study, is interpretivism. At the ontological level, the interpretivist views knowledge as subjective, implying multiple realities; different realities for different people are thus acknowledged (Denzin & Lincoln, 2011). Epistemologically, knowledge is seen to be created subjectively by the knower and participant collectively (Denzin & Lincoln, 2011). The researcher interacts with the subjects and carefully listens to what they say (Terre Blanche, Kelly & Durrheim, 2014). Methodologically, the interpretivist prefers a hermeneutic (interpretation of text or language) and naturalistic (interviewing and observation) approach (Denzin & Lincoln, 2011).

In conducting the current study as an interpretivist, I thus regarded reality as socially constructed rather than being discovered (Flick, 2014; Mertens, 1998; Silverman, 2014). This means that knowledge was constructed by the participants through interaction with others (Creswell, 2013). As new knowledge is constructed, new perspectives are formed and new concepts can emerge (Mertens, 1998). Knowledge

production is thus regarded as a dynamic and iterative process, which means that there is not just one factual truth about a phenomenon, but many different ways of interpreting it.

Interpretivism thus assumes that reality exists in the form of multiple mental constructions – everyone has his or her own subjective experience of reality. Meaning is created through lived experience, and each one constructs an own version of reality based on this lived experience (Denzin & Lincoln, 2011; Lincoln & Guba, 1985; Lincoln et al., 2011; Mertens, 1998). The inquirer's perspective is acknowledged as part of the meaning-making process. It follows that during the research process, the researcher and participant co-construct reality (Lincoln et al., 2011; Mertens, 1998). Such intersubjective exploration requires of the researcher to be immersed in the world of the participant, in order to gain an in-depth understanding (*verstehen*) of what is being researched (Fouche & Schurink, 2012; Terre Blanche et al., 2014).

The role of the interpretivist researcher, therefore, is to understand in context – both personal and societal context, and the context of the inquirer as well as that of the participant – and to be the instrument for collecting and analysing the data (Terre Blanche et al., 2014). The researcher and participant co-create knowledge or as Mertens (1998, p. 13) describes it, "the inquirer and inquired-into are interlocked in an interactive process, each influenc[ing] the other". As a result, the subjects become the experts on the phenomenon being studied (Lichtman, 2013). As such, the role of the participant in interpretive research is that of co-investigator.

Throughout, participants' voices must be heard by letting them speak for themselves. The researcher is expected not to apply a pre-conceived plan but rather to allow the study to unfold spontaneously, encouraging participants to take control of the research process. This flexibility may result in research questions evolving during the course of the study, and it provides opportunity for ongoing input by the participants (Mertens, 1998). The more involved participants are in the inquiry process, the more likely it is that some form of transformational, enabling action may occur as a result of the research. To this end, the interpretivist values action as a result of the study (Cohen et al., 2000; Lincoln et al., 2011; Silverman, 2014), as I did in this research.

The interpretivist approach has been criticised for lacking objectivity, verification of the truth and generalisability (Denzin & Lincoln, 2011). A further concern is that due to the close interaction between researcher and participant, it is possible for researchers to impose their own ideas on participants. As such, power inequalities may be experienced. It is also possible that in their quest for in-depth contextual realities, interpretive researchers may neglect the power of external factors in shaping reality (Cohen et al., 2000, p. 157).

In addressing these concerns, I accepted that subjectivity is inherent in the very nature of the interpretivist paradigm. Rather than attempting to address a perceived lack of objectivity, I focused on enhancing the inherent subjectivity of my study by generating and processing data meticulously and rigorously, using different data sources (triangulation) to confirm findings, reporting transparently and accurately on the methods I employed throughout the data generation and analysis process, and producing credible and authentic findings (Guba, 2004; Lincoln, 2010; Patton, 2015).

Furthermore, as an interpretivist researcher, I acknowledged the importance of having my voice and that of the participants heard; however, I constantly reflected on how my own context, values and beliefs may potentially affect my role as instrument of inquiry (Lincoln et al., 2011; Patton, 2015; Terre Blanche et al., 2014). When I commenced with this study, I accepted that my findings may be value-laden and that, in the words of Lichtman (2013, p. 25), it is “neither possible nor desirable for researchers to keep their values from influencing aspects of the study”. I therefore made a commitment to reflect regularly and explicitly on the values that may have influenced my interpretations.

I selected interpretivism as my study aligns with the principles of socially constructed, multiple realities, shaped by individual experiences within a particular social context and with the goal of gaining in-depth understanding of a particular phenomenon (Creswell, 2013). I thus adhered to the interpretivist paradigm, by engaging with a group of people, utilising PRA that also adheres to interpretivist principles, to facilitate awareness and action relating to rabies and its control. I assumed that each participant brought his or her own perspective to the study, enabling me to build knowledge of the phenomenon I was researching, and in the process I encouraged participation with the intention of empowering and enabling the participants so that

their voices could be heard. As stated, I acknowledged the value and possible bias of my own voice and practised reflexivity (Creswell, 2013; Lichtman, 2013; Lincoln et al., 2011) to ensure that the findings represent the voices of the participants.

3.4 METHODOLOGICAL APPROACH: QUALITATIVE APPROACH GUIDED BY PRA-PRINCIPLES

In this section, I describe the methodological approach I followed in conducting my study.

3.4.1 A qualitative approach

Stake (1995) specifies three main attributes of qualitative research, namely that it emphasises understanding (*verstehen*) over explanation as the purpose of inquiry, that it distinguishes the role of the researcher as personal instead of that of impersonal outsider, and that it focuses on knowledge constructed as opposed to knowledge discovery. My study complies with these criteria as I aimed to gain an empathetic understanding of a phenomenon (using PRA in a rural community to facilitate rabies control) with myself, the researcher, directly involved, aiming to construct a new understanding of the case under study (Terre Blanche et al., 2014).

The research question I formulated is suitable for qualitative research because it examines a unique phenomenon in a real-life situation of which little is known, relies on the understanding of a process rather than on statistical calculations and causes relating to effects, and relates to a complex issue that needs to be understood in more detail (Liamputtong, 2013; Silverman, 2014; Stake, 1995). In support of the qualitative approach I selected, I remained aware of the fact that I cannot be an objective, uninvolved outsider in this process of giving the participants a “voice” (Schurink & Crafford, 2012). Although such subjectivity is regarded by some critics as a shortcoming when following a qualitative process, I took it as a given in qualitative research, as subjectivity entails an essential element of understanding (Stake, 1995).

Throughout, I acknowledged my bias as researcher, bringing my own context into the study and I accepted that, as a novice researcher, I would encounter challenges during the analysis and interpretation of the data. As a result, I utilised different data

sources (triangulation) and constantly reflected on my role as researcher (Creswell, 2014; Kelly, 2014a). My use of different data sources reflecting multiple perspectives and realities resulted in the piece-by-piece construction of knowledge of the phenomenon (Creswell, 2014; Silverman, 2014). In addition, regular reflections and discussions with my supervisor enabled me to remain aware of my own potential biases and to avoid these as far as possible.

Denzin and Lincoln (2011) refer to the qualitative researcher as a bricoleur, someone who creates a bricolage, which is "something created from a variety of available things" (https://en.oxforddictionaries.com). Like a bricolage, qualitative research is built from a variety of perspectives, data sources and ideas into a useful construct that can make a difference in the world. My study provided me with an opportunity to do exactly this – by going on a journey of discovery with real people in the real world, considering their multiple realities and utilising a variety of methods to explore how positive change can occur in their world. As a bricoleur I thus attempted to put all the pieces together in order to create a new understanding of my research topic. While following a qualitative approach, I applied the principles of PRA to answer my research question.

3.4.2 Participatory reflection and action (PRA)

Participatory research is a broad term for an array of participatory approaches or methodologies including participatory action research (PAR), action research, participatory rural appraisal, participatory learning and action, participatory reflection and action (PRA) and many more. Participatory approaches are defined in literature both in terms of the epistemological paradigm (Heron & Reason, 1997; Lincoln et al., 2011) and a methodological approach (Ferreira & Ebersöhn, 2012). I discuss these two dimensions in the following sub-sections.

3.4.2.1 The participatory paradigm

Many aspects of interpretivism and participatory research align with one another; for example, the acknowledgement of multiple realities and the focus on inquiry into real-life situations – both aspects that are evident in my study. Participatory studies very specifically involve research *with* people (as opposed to doing research *on* people as in the positivist approach) (Bhana 2014; Liamputtong, 2013; Lincoln et al.,

2011). Two important principles apply, namely epistemic participation and political participation. Epistemic participation implies that the researcher is also a subject and that the outcome of research will be grounded by the researcher in his/her own experiential learning during the research process. Political participation refers to the research subjects being actively involved in decisions about the design and process of the study (Heron & Reason, 1997).

Although the current study clearly demonstrates epistemic participation, political participation was only partially present because the participants did not play a leading role in determining the research question, or how data were to be generated, due to this being determined before the participants were recruited. Participants, however, took a leading role in how the PRA-sessions were constructed, as I continuously sought their feedback and was guided by them in determining next steps. In terms of participatory research involving the co-creation of reality by the mind and given cosmos, and the existence of an intersubjective reality as each person's reality interacts with that of another, this study clearly illustrates participatory research (Heron & Reason, 1997). In the next section I explain PRA in more detail, foregrounding the way in which I applied the principles of PRA while following a qualitative research approach.

3.4.2.2 Understanding PRA

Participatory inquiry is driven by participants who are interested in the issue being researched, is collaborative, offers a democratic model on who can produce, own and use knowledge, and is intended to result in some action, change or improvement on the issue being researched (Kindon, Pain & Kesby, 2009). It often results in a blurring of lines between community work and the research process (Strydom, 2012b), as participatory research places the researcher and the participants on the same level in terms of power and knowledge. Researchers are typically seen as being powerful because of their existing knowledge, yet in participatory research local people are seen as the experts, whose knowledge about themselves and their communities makes them powerful (Liamputtong, 2013). Participatory research has its origins in underdeveloped countries from work initially done by community development workers with disempowered people. The work of Paulo Freire, who

campaigned for “education for liberation”, inspired much of the growth of participatory research (Bhana, 2014; Liamputtong, 2013).

Ferreira and Ebersöhn (2012) describe participatory reflection and action (PRA) as an engagement methodology derived from participatory rural appraisal. Participatory rural appraisal developed from rapid rural appraisal (RRA) in the 1980s and early 1990s (Chambers, 2008). RRA was born from a combination of the following three factors: dissatisfaction with the prevailing anti-poverty bias of the 1970s whereby urban-based professionals avoided dealing with the poor, disillusion with questionnaire surveys that did not have the desired impact, and a need for more practical and cost-effective ways of learning that led to a growing appreciation for the knowledge held by rural, poor people themselves (Chambers, 1992). RRA thus entails methods already utilised by development workers to gather information about rural people. Initial methods were characterised by obtaining information directly from local participants and were more cost-effective, valid and reliable than conventional research methods at the time (Chambers, 1992; FAO, n.d.).

PRA is not a static methodology but rather a broad research approach or philosophy utilising various data generation, documentation and analysis strategies – mostly group-based activities – to learn about people’s knowledge, skills, local conditions and challenges to develop plans to address these (Ferreira & Ebersöhn, 2012). Participants create their own knowledge and perform actions that may benefit them and their community, in an active partnership with researchers. This approach can be regarded as an activist approach that encourages people to think for themselves and become directly involved with the issues affecting them (Ferreira & Ebersöhn, 2011). It is based on the premise that those who are directly affected by something are most likely to have the best solutions for such problems (Bhana, 2014; Perkins & Zimmerman, 1995).

3.4.2.3 PRA principles that guided data generation and documentation

PRA is grounded in a few basic principles that I attempted to apply throughout the study. These principles include a reversal of learning (investigators learning from rural people themselves, on the site and face-to-face as opposed to their teaching the participants), having a relaxed attitude and not lecturing or probing but instead listening, being unimposing and not important, knowing what is not worth knowing,

not measuring more than needed, using a range of methods to cross-check information, and seeking variability rather than averages (Chambers, 1992). Whereas participatory rural appraisal emphasises the capabilities and empowerment of local people, RRA acknowledges the knowledge of participants for learning by outsiders (Chambers, 1992). The behavioural characteristics of the researcher are relevant and include facilitating the learning process so that participants can do things for themselves (as opposed to extracting knowledge), being self-critical while accepting personal responsibility, and encouraging the sharing of information and ideas among participants, facilitators, organisations and other stakeholders (Chambers, 1992).

The concept of reversals is an important PRA-principle. Robert Chambers (2013), refers to reversals of learning, reversals of management and reversals of professional values between the researcher and the research subject, where the research subject becomes the research partner or participant, and the researcher becomes the learner. With regard to reversals of learning, he encourages “learning directly from rural people, trying to understand their knowledge systems and eliciting their technical knowledge” (Chambers, 2012, p. 201). The researcher experiences a reversal from the etic (outsider perspective) to the emic (insider perspective) (Ferreira, 2006; Kelly, 2014a).

Chambers (2013) adds that this reversal of learning is best achieved by sitting, asking and listening in an unhurried manner, by learning from the most marginalised people, gaining indigenous knowledge and using indigenous methods of generating data, preferably by actively participating in the activities that are learnt about and by making participants collaborators in the research process. The acknowledgement of the participant as the expert is central to the PRA-concept. In referring to reversals in management, Chambers (2013) mentions organisations such as government departments with hierarchical structures and excessive bureaucracy, which may support a top-down authoritarian, target-focused management system instead of giving local people the power to decide for themselves. This can be applied to the university research system too, as researchers are often focused on extracting information and not on empowering and enabling people by shifting power to them, on individuals rather than on groups or communities, and on being serious rather than relaxed (Chambers, 2013; Ferreira, 2006).

The so-called tensions that characterise participatory research as described by Bhana (2014), resonate with the concept of reversals propagated by PRA. The three tensions refer to science *versus* practice, individual *versus* collective, and researcher *versus* researched. The first tension entails the interface of science and practice in that participatory engagement seeks to change the social world in the process of knowledge production, thus scientific truth is not separated from its application, as may be the case in other research approaches. In the second instance, the insistence in participatory methods on communal participation in knowledge production comes into conflict with the traditional approach of finding the most efficient solution to a problem that often translates into individual betterment rather than a collective benefit. Finally, the role of the participatory practitioner is similar to that of a partner working with co-researchers, wanting to know *with* the participants, rather than *about* them, and regarding knowledge as something that exists among people rather than being a barrier between people (Bhana, 2014).

Handing over the stick is yet another important principle of PRA. Researchers should accordingly encourage participants to determine much of the research agenda, to gather information and to plan the process. In the words of Chambers (1992, p. 19), “We are facilitators, learners and consultants … We watch, listen and learn. Metaphorically, and sometimes actually, we hand over the stick of authority”. This is the result of empowerment, and will typically manifest in the form of agency when participants reach a point where they make use of opportunities that are available, using their own internal and external resources, to decide and act for their own benefit. A secondary, indirect aim of my study was indeed to facilitate a process whereby the participants would “take the stick” and do something for themselves. I attempted to achieve this outcome by utilising PRA-methodology.

In summary, I co-generated qualitative data in collaboration with the participants through PRA-based activities and discussions, observations, field notes, and transcripts of informal discussions and group interactions, by applying PRA-principles during all data generation sessions. I focused on being a listener and learner, rather than an information-peddler, being relaxed and not imposing, and handing over the stick (Chambers, 1992; Chambers, 2013; Ferreira, 2006). This approach allowed me to build trust with the participants, ensuring that the data I obtained were authentic.

Participatory engagement is a time-consuming exercise, and trust is not built immediately. Furthermore, topics of interest to the researcher may not necessarily be of immediate importance to the participants (Catley & Leyland, 2001). The expectations of both the researcher and the participants therefore need to be explicit and managed to avoid unrealistic expectations and possible related fallouts. The inquirer must also be patient and accept that the process does not always work out as planned, and be prepared to adapt as the story unfolds while still adhering to the principles dictated by the selected paradigmatic and methodological assumptions (Chambers, 2002). As such, a good understanding of PRA-methodology and its connection to qualitative research was important before I commenced with this study. Being aware of these challenges furthermore assisted me in developing strategies to cope when being confronted with the realities of PRA. The process of focusing attention on rabies prevention, for example, took longer than expected. In response, I extended the number of PRA-sessions to accommodate the unfolding process. Moreover, the meeting agendas did not always work according to plan, but as this in itself was not unexpected and flexibility was inherent to the process, it was possible to adapt to changing circumstances.

3.5 CONCLUSION

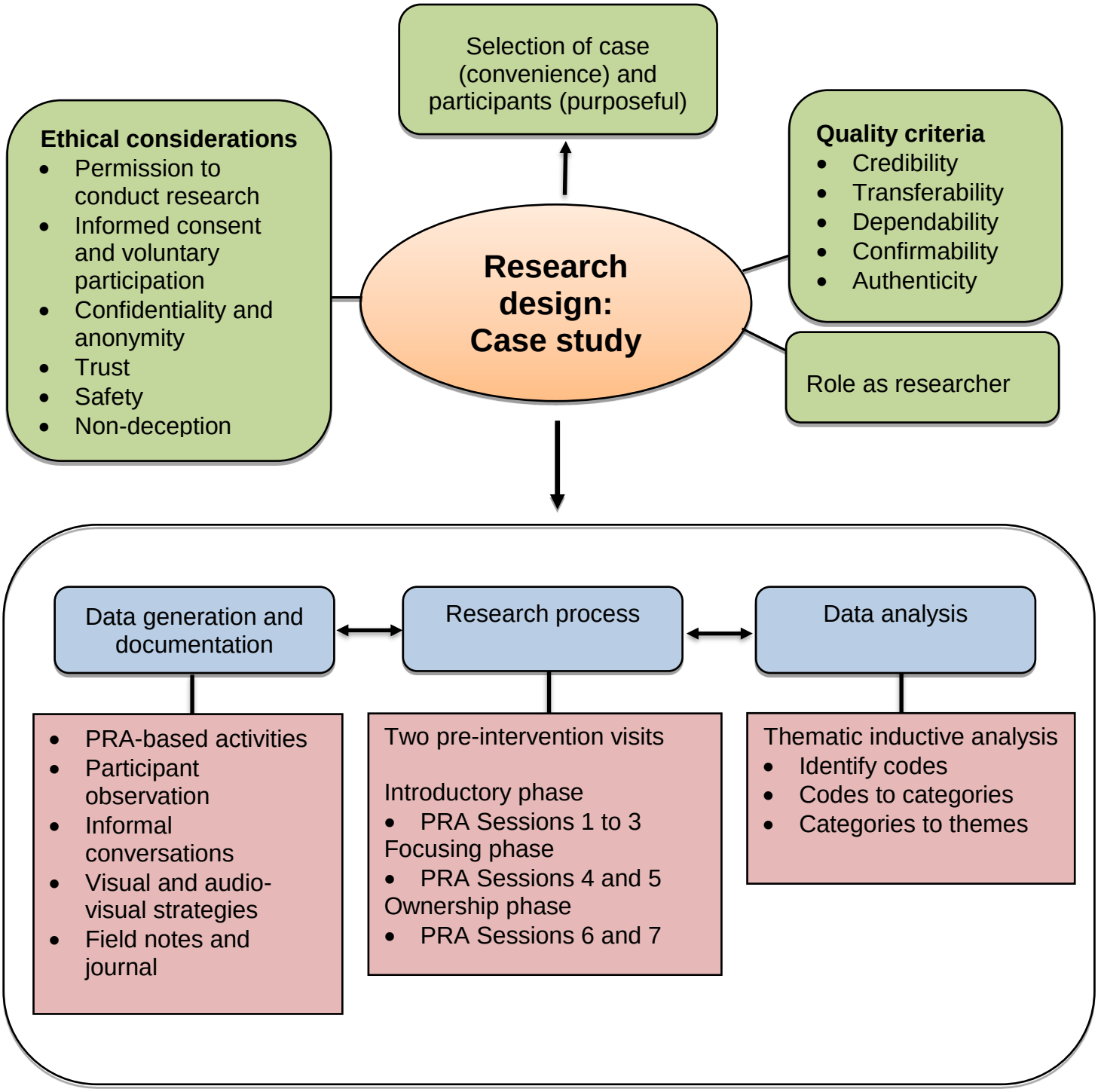
This chapter focused on the theoretical, paradigmatic and methodological approaches I utilised in my study. To this end, I explained empowerment and enablement theory, the interpretivist paradigm and qualitative approach being informed by PRA-principles. I related my choices to the formulated purpose and research questions, thereby justifying the choices I made.

In Chapter 4 I describe the research design and research process in detail. I discuss and justify my choice of a case study research design, explain the setting of the inquiry and how I selected the case and participants. Next, I describe the research process, and explain how data were generated, documented, analysed and interpreted. I conclude the chapter with an overview of how I respected ethical considerations and addressed quality criteria.

CHAPTER 4

RESEARCH DESIGN AND PROCESS

OVERVIEW OF THE CHAPTER



4.1 INTRODUCTION

In Chapter 3, I presented the theoretical and paradigmatic choices I made for conducting this study. I discussed empowerment and enablement theory, the interpretivist paradigm as meta-theory, and qualitative research guided by PRA-principles as methodology.

In this chapter, I discuss the case study research design I utilised. I report on the way in which I selected the case, site and participants, and then describe the research process. I describe data generation and documentation according to the seven sessions I facilitated with the participants, utilising PRA methods and interacting with a group of participants from the Hluvukani village. I also reflect on my role as researcher, how I respected ethical guidelines and lastly, how I aimed to adhere to quality criteria.

4.2 RESEARCH DESIGN

My study lent itself to a case study research design as it involved the in-depth (rich, detailed) investigation of a specific phenomenon (Creswell, 2014; Flyvbjerg 2011; Yin, 2014), namely the utilisation of PRA to facilitate rabies awareness and control in a rural settlement. I relied on a single, instrumental (explanatory) case study design as I did not merely seek to describe a contemporary event (PRA to facilitate rabies control in a rural community) but also attempted to investigate how and perhaps, why PRA could be effective for such a purpose (Creswell, 2013). Explanatory case studies are used to build and test new theories and enable the generation of theory grounded in real experience (Fouché & Schurink, 2012; Stake, 1995; Yin, 2014). In this study, I relied on a specific case (the group of participants within the specific context) to study a methodology (PRA) and to learn more about its application value in achieving a specific goal (increased rabies awareness and action).

Case study research aligns well with interpretivism (Cohen et al., 2000). It allows for an in-depth investigation into a real-life situation, within a particular context (Cohen et al., 2000; Creswell, 2013; Mertens, 1998; Patton, 2015). It favours multiple data sources (Creswell, 2013) and thick descriptions of the data and what is found (Cohen et al, 2000). These aspects, as well as the fact that case study research allows the

involvement of the researcher and focuses on the perspectives of the participants (Cohen et al., 2000), resulted in my decision to adopt this research design.

Stake (1995, p. 2), when defining a case study design, refers to a “bounded system”, which entails a system with boundaries of time and context, and the system being “something with working parts”. The boundaries between a phenomenon and the context are not necessarily clearly evident (Yin, 2014). This study involved a series of engagements between myself and the participants over a specified time period (10 months) and was thus bounded in time, consisted of a set of procedures, and involved a group of people, which together made up a unified whole (system). The phenomenon itself and its context could, however, not at all times be clearly distinguished, causing blurring of the boundaries between context and phenomenon. As an example, there were times during the PRA-sessions when I deemed it necessary to follow a less participatory and more directive approach, led by the contemporaneous feedback received from the participants. This implied that the content of the PRA-sessions (the intervention) was influenced by contextual factors and that I had to remain flexible.

Applying Yin’s (2014) three conditions for a case study design of type of question, extent of control over behavioural events and degree of focus on contemporary events, the current study fits the criteria. The research questions, firstly, are *how* and *why* questions, and seek to gain answers that deal with an ongoing process over a time period. The fact that I did not have full control over the research process, yet as participant observer was able to manipulate events informally, relates to the second requirement. The third criterion requires that a case is a contemporary event, which is also evident in this study.

Stake (1995) provides some criteria for case study research, including aspects such as ease of reading, appropriate manners of data generation, proper exposure to the role of the researcher, and consideration for participants. In addition, Yin (2014) identifies five attributes of case study research, which I attempted to achieve. Firstly, case study research must be significant and of general public interest, and involve a case in which the underlying issues are of national importance (Yin, 2014). To my knowledge, no similar project has been reported on in South Africa to date, making this case significant and unusual. More specifically, veterinary community

engagement projects that have been reported on either did not utilise PRA and a strengths-based approach, or did not specifically address rabies awareness and action (Catley et al., 2001, Catley et al., 2002, Catley et al., 2004, Catley et al., 2012; Getchell et al., 2002; Jost et al., 2007; Van Dijk et al., 2013; Vatta et al., 2011). Furthermore, the One Health aspect of this intervention is in the public health interest. It can be regarded as being of national and even global interest due to the widespread risk of rabies (Cleaveland et al., 2017; Lavan et al., 2017).

The second criterion that I followed, relates to the requirement that the study is not limited due to a lack of resources resulting in inadequate relevant data being generated (Yin, 2014). In the current study, different types of data were generated as described later in this chapter, and when it became evident that more PRA-sessions were required than initially anticipated, I ensured that the process continued to its conclusion and was not hampered by, for example, the exhaustion of resources. Thirdly, case study research focuses on alternative perspectives (Yin, 2014), requiring of me to examine evidence from different perspectives, including those of individual participants, and to address potential biases by reflecting throughout the research process.

The fourth criterion of case study research requires that sufficient evidence is presented (Yin, 2014). I include the generated data as appendices to this dissertation and describe in detail how the data were generated, documented and analysed. I have attempted to present the data in a neutral way, with the aim of demonstrating to the reader that I am knowledgeable on my subject and that my interpretations and findings are trustworthy. The fifth characteristic of a good case study design is that such research must be composed in an engaging manner (Yin, 2014). Although challenged by this requirement as a novice writer, I attempted to achieve this by writing in an easy yet informative style.

In terms of potential challenges and limitations, case study research is often criticised for not being generalisable (Flick, 2014; Lichtman, 2013; Silverman, 2014). Yet, the aim of case study research is not to generalise but rather to particularise by emphasising the uniqueness of a study (Stake, 1995). In addition to the possibility of transferability of the findings to similar contexts, case study research findings can become more generalisable if a series of cases is studied (Flick, 2014; Stake, 2006).

In this instance, I aimed to study a unique case in great detail in order to gain a better understanding of the phenomenon I set out to explore. Even though I did not intend to obtain generalisable findings for other contexts, meaningful theoretical findings that emanate from the study may be extrapolated to other similar contexts. As such, this study may pave the way for future multiple case study research where a number of similar interventions can be compared with one another (Stake, 2006).

Other potential challenges associated with case study research include the possibility of being open to bias, and not easily open to verification (Cohen et al., 2000). I attempted to address these concerns by including rich descriptions, practising reflexivity regarding my personal bias, and utilising multiple data sources (triangulation) (Patton, 2015). I regularly engaged in discussions with my supervisors, brainstorming ideas and preliminary results.

4.3 SELECTION OF CASE AND PARTICIPANTS

I conveniently selected the case (Creswell, 2013), being a group of rural community members in the Hluvukani settlement in the Mnisi Tribal Area, Mpumalanga, South Africa. I selected this specific community due to the involvement of the Faculty of Veterinary Science, University of Pretoria over the years in the community in the form of the Mnisi Community Programme (MCP). Furthermore, the local animal clinic (Hluvukani Animal Health Centre) is situated at this site. There are also several schools and a human clinic in the village. Photographs 4.1 to 4.4 depict some typical scenes from the village.

Photograph 4.1: A variety of services offered from a building in Hluvukani

Photograph 4.2: School children milling around in the street during break, with a free-roaming dog among them

Photograph 4.3: A local entrepreneur providing chicken and pap (maize porridge) meals

Photograph 4.4: Pigs being kept in a back yard

According to Conan et al. (2015a) there were 2 116 households and 9 652 inhabitants in Hluvukani in 2011. The number of dog-owning households was found to be 17% at the time, with 7,9 dogs per 100 people. The Hluvukani village is approximately 8 km^2 in size (National Institute for Communicable Diseases, 2015). In Bushbuckridge, the majority of the population (96%) live in formal housing, with a mean household size of four persons and an unemployment rate of 52,6% (well above the national rate of 29,8%). Eighty per cent of the households had access to piped water, and less than 10% access to refuse removal services, at the time of Conan et al.'s (2015) study.

Following an initial visit to the settlement in 2009, I realised that Hluvukani provided me with the opportunity to study the utilisation of PRA when attempting to facilitate

rabies awareness and prevention in a particular rural setting (the case). As such, the case can be categorised as a unique or revelatory case (Lichtman, 2013; Patton, 2015; Yin, 2014) that allowed for in-depth insight into a particular, information-rich situation (Patton, 2015).

After identifying the case, I undertook a visit to the site in December 2013. An environmental monitor (henceforth identified as PM) had been assigned to my study by the MCP of the Faculty of Veterinary Science, University of Pretoria, to assist me as interpreter and general helper during the course of this project. The PM worked from the animal clinic in Hluvukani, and introduced me to the clinic veterinarian and the clinic manager at the human clinic during my initial visit in 2013. In August 2016, PM introduced me to the chairperson of the Hluvukani Community Development Forum (CDF), who then acted as gatekeeper (Creswell, 2013; Fouché & Schurink, 2012; Patton, 2015; Silverman 2014) and undertook to assist with the recruitment of participants. A few weeks later the chairperson provided me with a list of potential participants. PM and I contacted and visited the people on the list, with the aim of recruiting them. PM identified two additional potential participants during the recruitment process, and at an introductory meeting for the project an additional person arrived, bringing the total number of participants to 12.

I thus purposefully selected the participants from the specific community (Cohen et al., 2000; Creswell, 2014; Mammen & Sano, 2012; Patton, 2015; Silverman, 2014). I applied the following selection criteria:

- Participants had to be able to communicate in English.
- Participants had to be interested in public health, primary animal health care or community development.
- Participants had to be available for the scheduled PRA-meetings.

During the early stages of the study, four of the recruited participants withdrew for various reasons (having obtained employment, having commenced studies and for unknown reasons), leaving a core group of 8 participants that remained involved throughout the process. Table 4.1 provides a demographic overview of the participants in the study.

Table 4.1: Demographic information of the participants

Participant	Gender	Age	Employment	Education
CM	Female	Early twenties	Part-time hairdresser	Grade 12
DK	Female	Early twenties	Unemployed	Grade 12
EM	Male	Early forties	Part-time work in Kruger National Park	Grade 12 and studying for game ranger
KM	Male	Early twenties	Part-time work in Kruger National Park	Grade 12
PN	Female	Early twenties	Unemployed	Grade 12
SN	Female	Thirties	Part-time entrepreneur	Tertiary qualification in labour relations
SS	Male	Early twenties	Unemployed, studying	Grade 12 and studying engineering
TK	Female	Late twenties	Unemployed	Grade 12

4.4 DATA GENERATION AND DOCUMENTATION

In addition to generating data through PRA-based activities and discussions, I recorded my personal experiences and reflections in a research journal; made field notes based on my observations during the PRA-sessions; engaged in informal conversations, and relied on photographs taken by myself, PM and the participants; as well as audio-visual recordings and visual documents produced by the participants in the form of written notes and posters made during the PRA-sessions (Creswell, 2013; Silverman, 2014; Yin, 2014). Correspondence between the participants and myself and correspondence *via* social media provided another data source. I incorporated my field notes, photographs and photographed documents as part of my research journal, which is included as Appendices B to G. All transcripts of recordings are attached as Appendix H and videos are included on the attached memory stick.

4.4.1 PRA-based activities and discussions

PRA entails a philosophical approach and collection of methods that can be employed when engaging with groups of people in settings where change is

envisaged or possible. The practical approach to PRA boasts a variety of methods that are generally uncomplicated and flexible. The methods, however, do not stand on their own, but relate to the attitudes and behaviour of the person who facilitates them (the researcher). The focus falls on self-critical awareness, and facilitating learning so that participants “teach themselves”, encouraging the sharing of information, and “handing over the stick”, which implies that participants take ownership (Chambers, 1992, p. 15).

In planning the PRA-based intervention and sessions described in the next section, I was guided by the resource *Participatory workshops – a sourcebook for 21 sets of ideas and activities* where Chambers (2002) describes a variety of games and activities aimed at different stages of the PRA-process. Chambers (2002) encourages facilitators to develop their own games and activities and emphasises the need for participants to enjoy participatory sessions. To this end, Ferreira and Ebersöhn (2012) primarily utilised small group discussions (brainstorming sessions), resulting in the compilation of posters, which were then presented to the larger group of participants as part of their PRA-intervention for the STAR (Supportive Teacher, Assets and Resilience) project.

In PRA, data can be generated through modelling an environment, visual diagramming (e.g. Venn diagrams, trend and change diagramming, wheel charts), sorting and ranking, card writing and sorting, matrices, seasonal calendars and timelines (Liamputtong, 2013; Loewenson, Laurell, Hogstedt, D’Ambruoso & Shroff, 2014). Normal stationery materials are often used, yet accessible items such as stones or pebbles, seeds and beans may also be used to illustrate ideas that are discussed. Maps can be drawn in the sand if paper is not available (Chambers, 2002). On the other end of the spectrum technology can be helpful, for example, to capture suggestions and ideas as they are expressed. In addition, roleplay and dramatisation, photovoice (community members taking their own pictures and discussing and contextualising these) and videovoice can be utilised. Finally, social networking platforms hold potential for participatory methodology (Chambers, 1992; Leeuwis, 2004; Loewenson et al., 2014; Wang, 1999).

PRA has been used in a variety of disciplines in South Africa, including the health and education sectors. As indicated, Ferreira and Ebersöhn (2012) utilised PRA to

facilitate HIV/AIDS-awareness and action in rural schools in South Africa, by facilitating community workshops with teachers. In my study, I was guided by Ferreira and Ebersöhn's (2012) intervention in terms of their four phases, with each phase involving three sessions of two to three hours each, over a period of 18 months. Although the intervention described by Ferreira and Ebersöhn (2012) was used as a "blueprint" for my study, it differed in several areas, such as the group of participants not being a homogeneous group of people linked to a community institution (for example teachers at a school) but a randomly selected group of diverse citizens, the majority of the participants in my study not having tertiary qualifications, and the topic initially not being of interest to the group of participants. As such, the Hluvukani rabies intervention I developed and implemented could not be an exact replication of any other previous study and had to follow its own course.

Most of the PRA-based activities in the current study involved small group discussions resulting in poster-based activities such as mapping, listing and story-telling. These activities were useful in that they allowed the participants to share ideas in small groups first (two groups of four to five participants each), in a relaxed atmosphere, before reporting to the whole group. In addition, they produced tangible records of their discussions that could be shown to them again at a later stage as reminder of previous discussions and in support of their keeping their focus in the process. One of the participants furthermore regularly provided me with written documents, expressing his understanding of matters that were discussed during PRA-sessions (attached as Appendix I[7]).

A potential challenge I guarded against relates to the possibility of dominant group members suppressing more quiet participants during discussions. To this end, I observed that more dominant members were also sensitive to this and actively encouraged others to participate. Furthermore, I realised that my instruction that I valued everybody's view had to be very clear and that I had to emphasise that it was not necessary for everyone to agree on what was captured on the posters.

[7] An example of one document written by the participant is included in Appendix I.

4.4.2 Participant observation

Researchers utilise participant observation when interacting directly with the people they study in an effort to obtain an insider perspective (Angrosino, 2016). This data generation strategy implies several advantages, such as the possibility of an insider providing the researcher with entry into the setting, the researcher being less of a distraction, and the process naturally facilitating further research (Angrosino, 2016). As such, participant observation implies the observation of a researcher's own participation and that of others. It involves a process of observing and recording conditions, events, feelings and activities by looking instead of asking (Strydom, 2012b).

Participant observation typically implies a substantial amount of time spent with participants to become immersed in a particular context over time (Cohen et al., 2000), in an attempt to understand the participants' experiences and perceptions. My repeated visits to the community in this study allowed me to become increasingly immersed in the research setting over time. I consciously adopted a membership role in the community while also being explicit and open about my age, profession, class and ethnicity in order to address possible bias, which can pose a challenge during interpretivist studies. As participant observer I could, however, also become an advocate for the community I was collaborating with, supporting them to feel empowered and advancing social justice (Angrosino & Rosenberg, 2011).

Angrosino (2016) differentiates between the different roles that participant observers can take on, depending on the level of participation. These roles include being complete participants, participants-as-observers, observers-as-participants, complete members, active members, evolving members and complete observers. Whereas complete participants are fully integrated into the community they study, complete observers remain outsiders who remain detached from the participants (Angrosino, 2016).

I conceptualised my role as participant observer as that of observer-as-participant, who was present in the community throughout all data generation sessions, fulfilling the explicit role of researcher going into a community to do research, yet ultimately leaving the group (Angrosino, 2016). I remained an outsider in spite of spending a substantial amount of time among the participants and closely collaborating with

them, yet attempted to obtain an insider view (Cohen et al., 2000). In this role, I had to balance the need for obtaining an optimal insider perspective with that of being the “professional outsider” (Flick, 2014, p. 314). While observing the phenomenon under study from the participants’ perspective, I was simultaneously influencing the phenomenon due to my participation in the process (Flick, 2014). In attempting to maintain this balance, I regularly reflected on my role as observer-as-participant and engaged in constant discussions and debriefing sessions with my supervisors.

During all PRA-based sessions I kept written records (field notes) of my observations, and triangulated these with PM’s observations, the participants’ input as well as the visual data that were generated. As recommended by Strydom (2012b), I captured short observational notes during the events and then expanded on my thoughts after the session. By being an observer-as-participant, I faced the challenge of recording everything accurately, while being engaged in the process and activities. I addressed this potential challenge by expanding on my field notes as soon as possible after a data generation session had occurred, while the events were still clear in my mind.

Another potential challenge of participant observation is that the researcher may become overwhelmed when being exposed to unexpected experiences (so-called “culture shock”) (Angrosino, 2016; Creswell, 2013; Flick, 2014). In addition, the researcher may experience invasion of privacy − just as the researcher may be seen to invade the community’s privacy. Dealing with such potential challenges requires self-awareness (Angrosino, 2016) and that a researcher strive to utilise all experiences as opportunities to obtain insight into the phenomenon under study (Flick, 2014). Although I did not experience the field work as overwhelming, I continually focused on embracing the positive aspects of engaging with a group of people that are different from me, rather than feeling overwhelmed by our differences.

4.4.3 Informal conversations

On a few occasions during field visits, spontaneous discussions erupted during the PRA-based activities. As these discussions were usually unplanned, I did not always record these and therefore made field notes which I expanded on as soon as possible after such discussions, before forgetting the essence of what had been said

(Kelly, 2014a; Patton, 2015; Silverman, 2013). I also interviewed PM afterwards to confirm that my observations and records of what had been said were correct. In most instances, these informal discussion topics were raised again at a later stage that could also confirm my field notes. I include all field notes as part of my research journal (See Appendix B to G).

The informal conversations usually took the form of group discussions, during which participants expressed and exchanged their personal opinions (Flick, 2014), after being prompted by a remark or question during a PRA-based activity or discussion. As such, the stimuli for these discussions occurred spontaneously (Flick, 2014; Kelly, 2014a; Silverman, 2014). In the absence of a pre-existing schedule of questions as in the case of structured interviews, I therefore had to formulate questions based on the natural flow of interactions (Patton, 2015; Silverman, 2014). I focused on using open-ended questions that would not limit the participants' responses or steer them in a specific direction, and also remained aware of the potential influence of personal bias or my own opinions (Cohen, 2000; Mertens, 1998; Patton, 2015). In order to ensure that I correctly interpreted the participants' messages, I utilised clarifying questions and summarising as strategies (Kelly, 2014a).

At times, I redirected questions to hear the voices of quiet participants. Throughout, I had to maintain a balance between allowing the discussion to flow and develop according to its own dynamic, yet keeping to the topic and involving all participants in the conversation (Flick, 2014). These informal conversations were specifically advantageous as they provided flexibility and enabled me to obtain diverse views (Flick, 2014). Furthermore, they suited the PRA-approach I followed and can be seen as a natural consequence of the PRA-based activities (Chambers, 2002; Chambers, 2008; Silverman, 2014).

4.4.4 Visual and audio-visual strategies

Visual data generation and documentation techniques allow a researcher to visualise conditions more holistically, and to capture moments and detail that can be revisited at a later stage (Creswell, 2013; Silverman, 2014). These techniques can thus be utilised as data *per se*, to assist with recall; or as objects of reflection for participants and others during data analysis. Photographs are, however, a reflection of the photographer's view and may not necessarily represent an incident objectively

if not cautious about this potential challenge (Flick, 2014; Lichtman, 2013; Patton, 2015).

I took photographs of all PRA-sessions in an attempt to capture the settings, activities and atmosphere of the sessions (Patton, 2015). I kept all the photographs on record and later selected the most representative ones to include in my research journal. The participants also took photographs during the introductory phase, to capture their community in order to explain it to me. These photographs were subsequently incorporated on posters and used by the participants to identify assets and the challenges the community faced (Flick, 2014; Wang, 1999). Such participant-directed visual data production can minimise a researcher's influence, thereby promoting a more authentic understanding of the setting and participants (Silverman, 2014). Furthermore, photographic evidence of all documents produced during the PRA-sessions is included as part of my research journal, including the posters made by the participants, written notes submitted by individual participants (mainly one), and summaries of the group discussions I recorded in the presence of the group with their direct input.

Even though I did not record everything that was said during meetings, I audio-visually recorded most of the report-back presentations by participants and subsequently transcribed these verbatim (Creswell, 2013; Flick, 2014). I chose audio-visual recordings in preference to voice recordings after using both techniques during the first session and comparing the sound quality of the two. A challenge I faced in choosing to rely on audio-visual recording relates to finding a suitable location for the camera that would not be intrusive and would not record other environmental sounds (Creswell, 2013). I did the transcriptions myself and followed Flick's (2014) guidelines in terms of anonymisation of the data, indicating turn taking and breaks, but not following all the conventions of transcriptions (for example indicating the length of pauses). I focused on keeping transcriptions easy to read, and as accurate as possible (Silverman, 2013). Transcribing the data myself had the further advantage of allowing me to become immersed in the data (Patton, 2015), which forms part of qualitative inductive data analysis.

Even though some instances occurred where the equipment failed, I made detailed field notes that were also corroborated by PM afterwards. As participant observer I

found it difficult to record all conversations, yet again relied on detailed field notes in such cases, subsequently being confirmed by PM and with the option of clarifying uncertainties with the participants where doubt existed (Creswell, 2013). The transcriptions of the audio-visual recordings are included as Appendix H[8].

4.4.5 Field notes and reflective research journal

As indicated, I used field notes throughout my study to capture all PRA-based sessions, and afterwards to record my observations. I recorded what I observed in the physical setting, with the people who were present, their interactions, the activities that took place and my own experiences of the research process. I attempted to record my observations as descriptively as possible and avoided jumping to conclusions too early, yet after reflecting on the observations I made I also captured my preliminary insights and interpretations (Cohen et al., 2000; Patton, 2015). My field notes thus contained observational notes (what happened and what was observed), methodological notes (observational notes on myself as researcher, and on the methodology I followed), theoretical notes (critical reflections on my observational notes) and personal notes (critical self-reflection) (Schurink & Crafford, 2012).

I transferred my handwritten field notes to a digital research journal, which also incorporates photographs of both the PRA-process and the documentary evidence produced during this study. In my research journal I expanded on my field notes by reflecting on the activities of my study, my role as researcher and observer-as-participant, as well as the ongoing research process (Flick, 2014). My research journal furthermore provides a background to the personal context of my study and reveals the lessons I had learned during this research project. I attempted to include only relevant personal reflections to avoid my research journal focusing just on my own perceptions and experiences (Silverman, 2013). To present my thinking and reflections on the research process and all it entailed, I incorporated my notes, visual

[8] An example of one transcribed session is included in Appendix H. The full set of transcriptions is provided on a memory stick.

data and personal reflections in my research journal, thereby presenting the reader with one comprehensive document. For ease of reference, my research journal is divided into six parts that are attached as Appendix B to G[9].

4.5 RESEARCH PROCESS

In this section, I discuss the research process in detail, starting with the pre-intervention phase followed by the PRA-intervention, which entailed three phases, namely the introductory phase, focusing phase and ownership phase.

4.5.1 Pre-intervention phase

The pre-intervention phase consisted of three exploratory visits to the site, once in 2013 and twice in 2016 (August and October). The first visit was undertaken to meet the interpreter (PM) who had been assigned to me, and to familiarise myself with the site. PM took me to the local human clinic, showed me around Hluvukani and provided me with some insights into the community. The second exploratory visit in August 2016 had a similar purpose, as some time had elapsed since my initial visit. During this visit, I attended meetings with the coordinator of the MCP and the local state veterinarian, and PM introduced me to the CDF chairperson who assisted me in identifying potential participants for the study. In each case I explained the aim and planned format of my study, exploring possible ways in which the various stakeholders could be impacted, and clarifying queries about the study to build positive relationships and obtain support for my research project. The third pre-intervention visit during October 2016 involved the process of recruiting participants who had been identified by the CDF chairperson, and obtaining their consent for participation in the study. Following these activities, during the same visit, I facilitated the first PRA-session with the participants.

4.5.2 PRA-intervention

Following the pre-intervention visits, I conducted seven PRA-sessions between October 2016 and August 2017. These visits took place around one to four months

[9] The journal for PRA Session 2 is included as Appendix C. The complete set of journals is provided on a memory stick.

apart, in October and November 2016, and in January, February, June and twice in August 2017. In Table 4.2, I summarise the seven PRA-intervention sessions I undertook. The PRA-sessions can be divided into three phases, namely an introductory phase (PRA Sessions 1 to 3) during which I gained insight into the community, its challenges, resources and potential resources, and how animal health in general and rabies in particular is perceived; a focusing phase (PRA Sessions 4 and 5) during which rabies was foregrounded and explored in more detail; and an ownership phase (PRA Sessions 6 and 7) during which the participants were empowered to act. These phases emerged as the research process progressed and were thus not pre-planned.

Table 4.2: Summary of PRA sessions (adapted from Ferreira and Ebersöhn, 2012)

Phase 1 (introductory phase): To gain an understanding of the community, its challenges, resources/assets and potential resources/assets, and how animal health in general and rabies in particular is perceived in the community.			
	PRA Session 1: 6 October 2016 (one meeting only)		
Aim/topic	Explore community assets and challenges		
Programme and prompts	• Introductions: Tell us who you are, and what you are passionate about • Introduce topics of the project • Small group exercise: Community mapping • Report and discuss in whole group • Small group exercise (photovoice): Provide each one of three groups with a device for taking photographs when going out to pictures of landmarks in Hluvukani so that they can tell us a story about Hluvukani during the next visit, using the photographs • Whole group discussion: Discuss concerns (what we do not want to happen), dreams (what we would like to create) and skills and abilities (what we have to give/do)		
	PRA Session 2: 8 - 10 November 2016		
	Meeting 1 (8 November 2016)	**Meeting 2 (9 November 2016)**	**Meeting 3 (10 November 2016)**
Aim/topic	Get to know the community, explore perceptions of animals	Clarify perceptions of rabies, share information, evaluate rabies educational material	Explore perceptions of educational material, share information

Programme and prompts	• Reflect on previous session
	• Whole group discussion: Animals in Hluvukani
	• Small group activity: Make posters using photographs from previous session
	• Indicate resources, potential resources and challenges
	• Report and discuss in whole group
		• Whole group discussion: Rabies
		• Whole group activity:
		  • Rate educational material
		  • Other ideas for raising awareness
			• Feedback on educational material
			• Visit to animal clinic
			• General discussion: One Health, and government veterinary structures

	PRA Session 3: 10 - 12 January 2017		
	Meeting 1 (10 January 2017)	**Meeting 2 (11 January 2017)**	**Meeting 3 (12 January 2017)**
Aim/topic	Explore assets and challenges, understand perceptions of animal health	Understand animal issues, explore the use of assets in the broader community context	Identify issues that need to be addressed and compile an action plan
Programme and prompts	• Reflect on previous session • Asset-based terminology explained • Small group exercise: Assets, potential assets and challenges • Record on a poster and present to whole group • Whole group discussion: Traditional healers	• General discussion: Fees Must Fall • Whole group discussion: Animal welfare • Small group discussion: Ideas to improve some aspects of life in Hluvukani • Record on a poster and present to whole group	• Small group activity: Do asset analysis for ideas from previous day • Record on a poster and present to whole group • Compile an action plan
Phase 2 (Focusing phase): Bringing rabies to the foreground, facilitating processes whereby participants become aware of and take responsibility for action			
	PRA Session 4: 21 - 23 February 2017		
	Meeting 1 (21 February 2017)	**Meeting 2 (22 February 2017)**	**Meeting 3 (23 February 2017)**
Aim/topic	Reflection on process thus far	Getting to know more about Hluvukani, identify assets	Reaffirm group as experts, affirm assets, formulate rabies action plan
Programme and prompts	• Reflect on previous session • Whole group activity: Reflect on the process so far and indicate benefits and challenges experienced • Record on a poster and present to whole group	• Transect walk / drive through Hluvukani	• Reflection on previous day's activity • Whole group discussion: Superstitions • Information sharing on rabies • Assets and challenges presented to the group • Whole group activity: Rabies action plan formulated • Hluvukani Rabies Fighters (HRF) formed

	PRA Session 5: 6 - 8 June 2017		
	Meeting 1 (6 June 2017)	**Meeting 2 (7 June 2017)**	**Meeting 3 (8 June 2017)**
Aim / topic	Consolidate learning about rabies	Refine HRF action plan	Finalise HRF action plan
Programme and prompts	• Reflect on previous session • Small group activity: Rabies story on a poster • Present to whole group	• School visit with veterinary science students • Reflection on school visit • Discussion on Five Freedoms • Whole group discussion: Refine action plan using assets	• Fun creative exercise • Whole group activity: What a rabies pamphlet should contain • Record on a poster and present • Whole group activity: Finalise rabies action plan • Meet local state veterinarian
Phase 3 (ownership phase): Planning and taking action, taking ownership of rabies prevention			
	PRA Session 6: 7 and 8 August 2017 (two days only)		
	Meeting 1 (7 August 2017)		**Meeting 2 (8 August 2017)**
Aim/topic	Taking action		Taking action
Programme and prompts	• Reflect on previous session • Creative exercise • Rabies Educator Certificate: Information sharing • Plan a play (educational theatre)		• Rehearse the play • Work on Rabies Educator Certificate • Meet regional state veterinarian
	PRA Session 7: 29 - 31 August 2017		
	Meeting 1 (29 August 2017)	**Meeting 2 (30 August 2017)**	**Meeting 3 (31 August 2017)**
Aim/topic	Reflection on process	Taking action	Taking action
Programme and prompts	• Creative exercise • Whole group discussion: Planning for the week, followed by reflection on the process	• Rehearse the play • Present play for visiting school • Work on Rabies Educator Certificate	• Present play at local school • Work on Rabies Educator Certificate

All meetings of the PRA-intervention held in the morning lasted around two hours and were concluded with lunch. The venue for the meetings was a garage at the local state veterinarian's office, situated on the property next to the animal clinic. Four to eight people attended all the meetings, some only for parts of meeting. The primary participatory methods used during sessions involved mapping, compilation of posters, photovoice activities and ranking as well as small and whole group discussions. Each session concluded with some assignment that the participants had to complete before the next session (their "homework"), as well as the finalisation of a date for the next session.

During the initial meeting, I explained PRA and what the process of reflection and action was about. The following questions that would guide the PRA-intervention from this point onwards were introduced: *Why is animal health important for people?*, *What is rabies and how does it affect people and animals?*, and *What can we do to protect people and animals from rabies?* During subsequent sessions, these three questions as well as the posters that had been generated during previous sessions were put up on the walls.

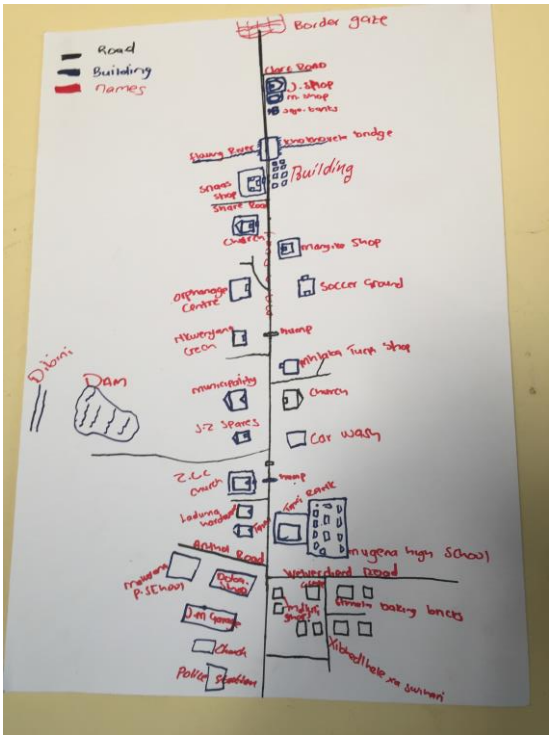
4.5.2.1 Introductory phase of the intervention

Phase 1, the introductory phase, enabled the participants, PM and me to get to know one another, and establish relationships of trust. During this phase, I emphasised the idea that the participants were the experts and that I needed to learn from them about themselves and their community, as well as how they perceived animal health and rabies. The introductory phase entailed three visits and seven meetings over a period of three months.

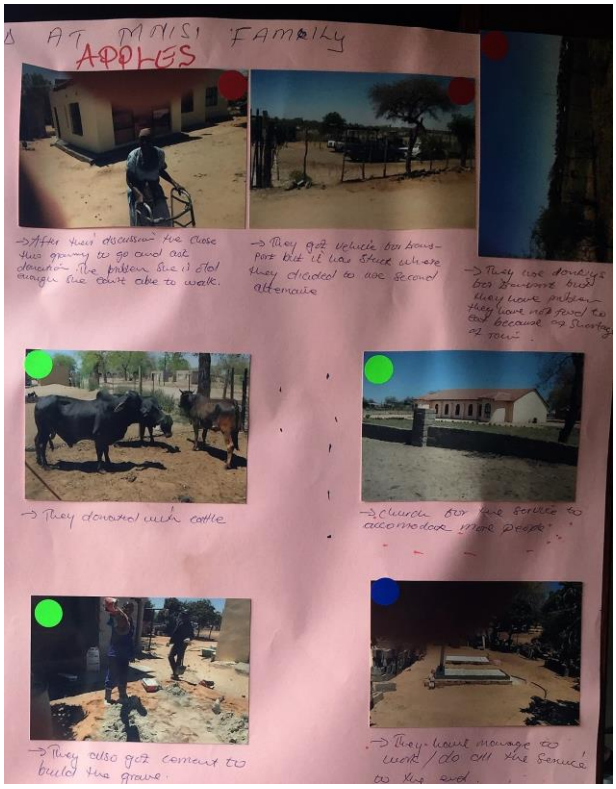
During the first visit in October 2016, I facilitated one meeting, focusing on the participants and their village. This entailed a community mapping exercise, done by two groups, which is illustrated in Photographs 4.5 and 4.6, and the sharing of personal preferences, dreams, fears and skills. Furthermore, the participants went out in groups to take photographs of landmarks in the community, which were utilised during PRA Session 2 (8-10 November 2016), to make posters (Photograph 4.7), telling me a story about themselves and their community. In the first meeting of the second session, the

concepts of assets, potential assets and challenges were introduced and participants were asked to indicate these on their compiled posters by using stickers of different colours. We also explored what the participants knew about animals in Hluvukani in a discussion that was supplemented by written notes made by one of the participants (Appendix I). All this information was captured on a poster (Photograph 4.8) as the participants spoke.

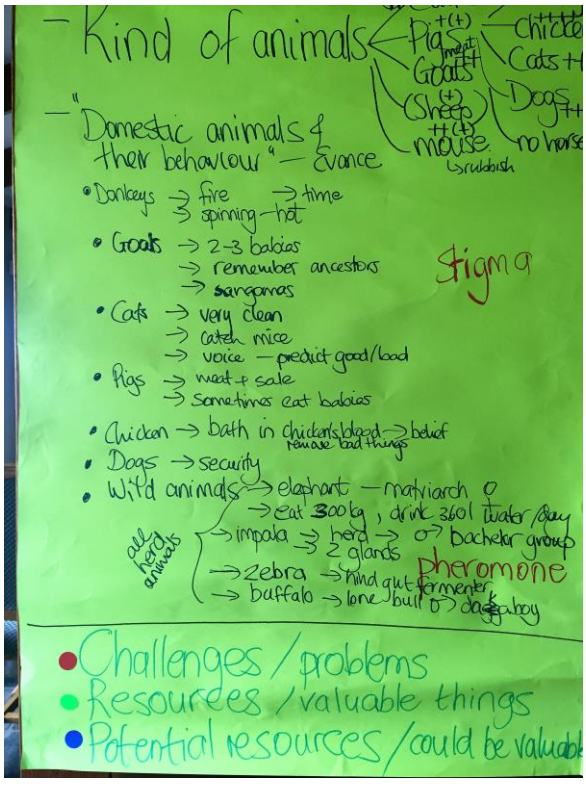
Photograph 4.5: Participants compiling community maps



Photograph 4.6: Example of a community map



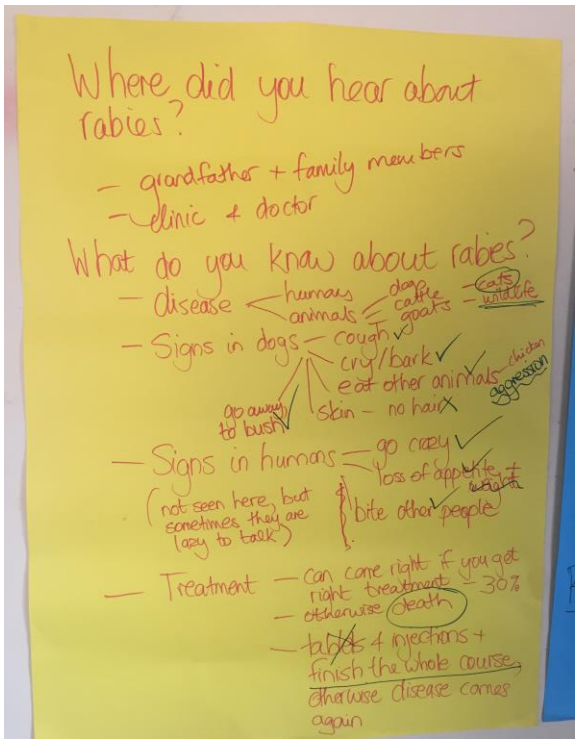
Photograph 4.7: Photographs used in a poster to tell a story about Hluvukani



Photograph 4.8: Notes of a group discussion on animals

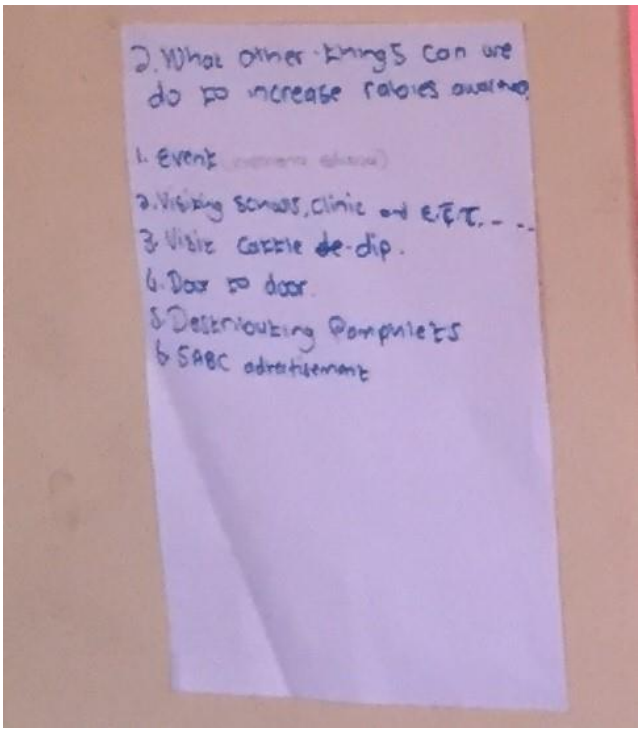
Meeting 2 of PRA Session 2 entailed a discussion about perceptions of rabies, which was directly recorded on a poster (Photograph 4.9). This was followed by some

information sharing about rabies, including videos on rabies to address the perceptions shared by the participants during the earlier group discussion. I introduced some examples of educational material on rabies (14 in number) and asked participants to evaluate and rank the materials in terms of suitability for the Hluvukani community. The group looked through all the material and discussed it among themselves (Photograph 4.10); however, they declined to do the ranking of the material, and delegated this task to one (more senior) member (EM) who was requested to select the three best examples at home after the meeting and report back the following morning. We concluded the meeting with a short discussion on other ideas for creating rabies awareness in the community. These ideas are represented in Photograph 4.11.

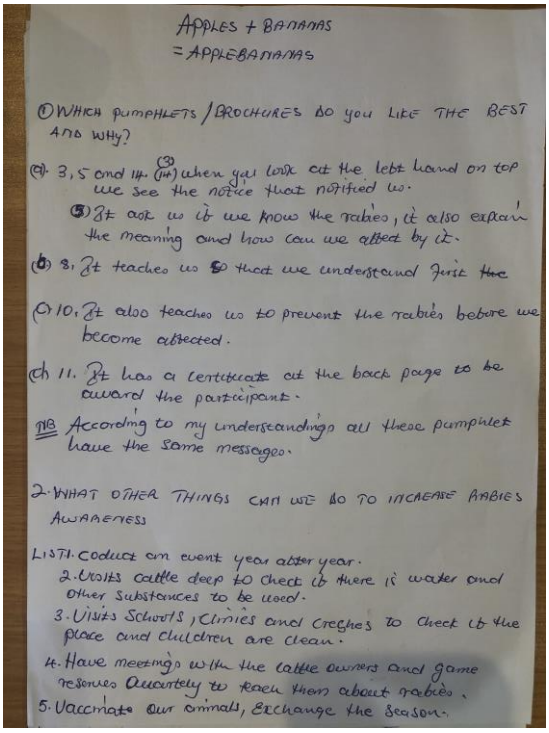


Photograph 4.9: Notes of a group discussion on rabies

Photograph 4.10: Participants looking through existing rabies educational material



Photograph 4.11: Ideas on creating rabies awareness in the community

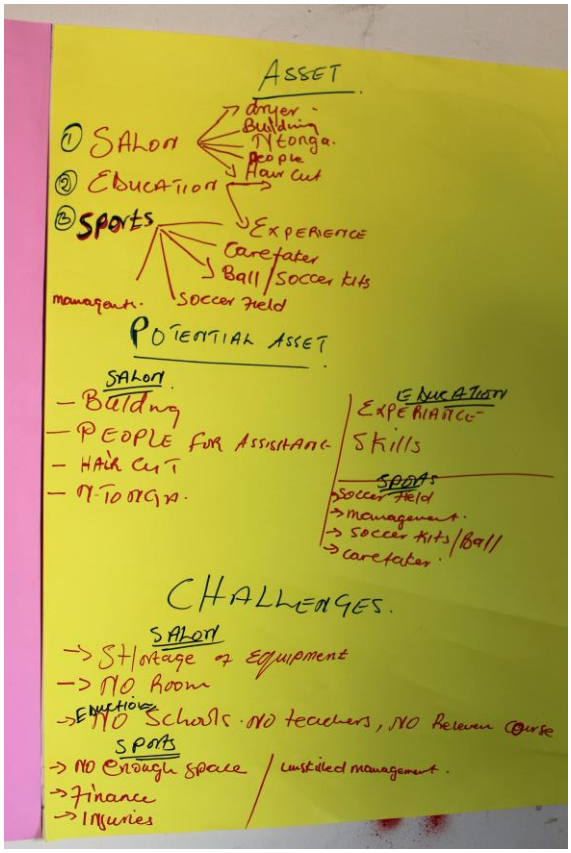


Photograph 4.12: EM's written report about the educational material

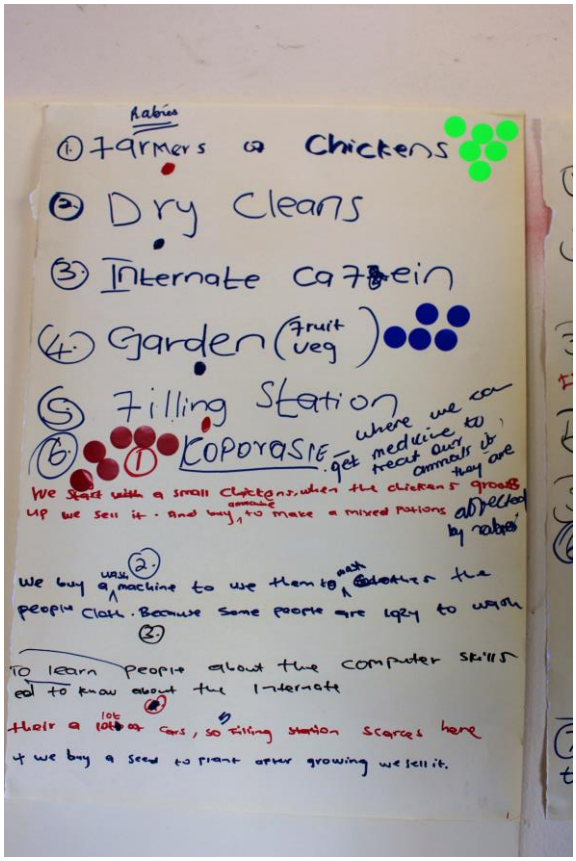
Meeting 3 started with feedback from the participant who had been tasked to rank the educational material, and was followed by a discussion among the whole group. EM had written down his thoughts about the pamphlets (Photograph 4.12) and brought them along to present to the group. This led to a group discussion and the participants coming to some conclusions about a brochure on rabies for Hluvukani. They concluded that such a brochure should be in both English and Shangaan, colourful, easy to read (font not too small) and in the format of an A5 pamphlet (Research Journal Part 2, p. 13). We briefly reviewed what had been discussed about rabies the previous day, and PM and I explained the concept of One Health.

For the third visit (10-12 January 2017), we focused on identifying assets, potential assets and challenges in the community (Photograph 4.13), and developing an action plan. During Meeting 1, a spontaneous discussion developed that turned into a lively and candid interchange about traditional healers, cultural beliefs and superstitions. During Meeting 2 the groups made a list of five ideas for something they could do to improve some aspect of life in the community. These could involve animals or be broader, but had to be sustainable and something that the participants would be able

to do themselves. They then had to vote for the best ideas by putting coloured stickers next to the ones they rated first, second and third (Photograph 4.14). I did not limit the ideas to rabies for this particular activity as I did not want to suppress any creative thinking; however, I implied that such ideas would be valuable. The projects that were chosen subsequently did not concern rabies, even though the word *Rabies* was written in small print at the top of the one poster, seemingly as an afterthought, when one of the participants reminded the group of the actual focus of the project.



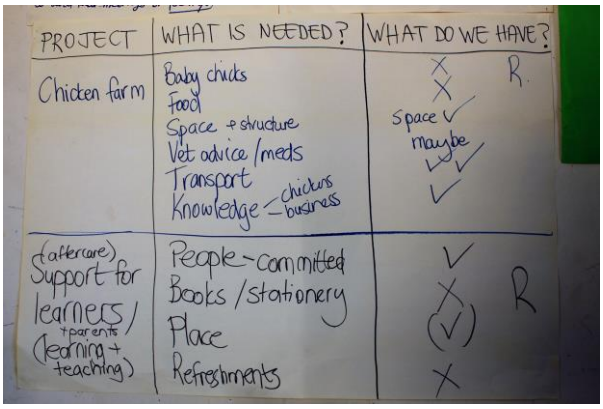
Photograph 4.13: Poster depicting assets, potential assets and challenges



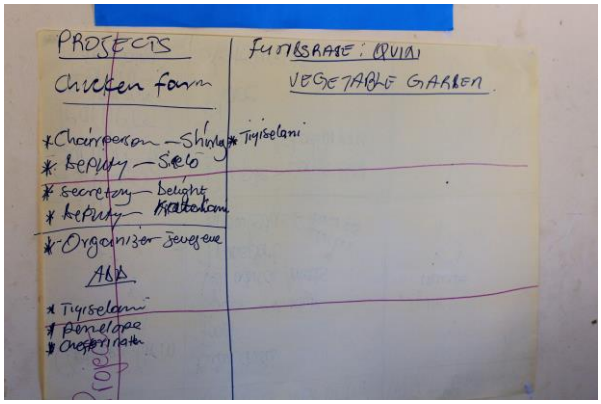
Photograph 4.14: Ideas for improvement in the community, with coloured stickers indicating the participants' choices

Meeting 3 involved an asset-risk analysis of the ideas that were selected the day before (Photograph 4.15). A second voting process resulted in the group agreeing on two projects, for which they spontaneously started planning at the end of Meeting 3 (Photograph 4.16). I noticed that they had indicated my name next to the word "fundraise" at the top of the planning poster, I reiterated that I was unable to assist with any funding, as we had earlier agreed that they would have to be able to undertake

the activity themselves. They agreed to work on their plan and start implementation before my next visit.



Photograph 4.15: Example of an asset-risk analysis



Photograph 4.16: Spontaneous planning for a chicken farm in the community

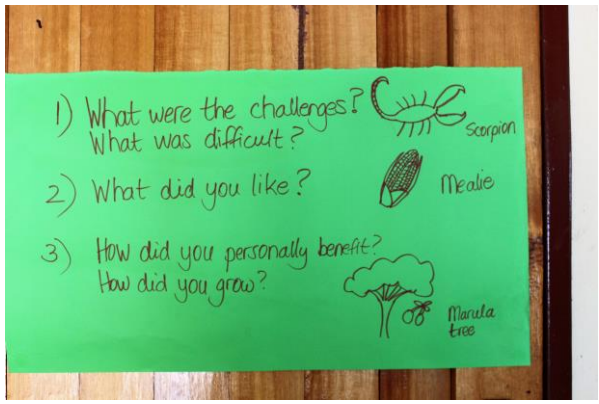
4.5.2.2 Focusing phase of the intervention

Rabies became more prominent during Phase 2, the focusing phase, which entailed two visits, and six meetings, three months apart. I re-affirmed the participants' important role as my informants and teachers during this phase.

At the start of PRA Session 4, the participants reported that they had not been able to complete their planning for the chicken farm and had decided that it was not a sustainable idea. We spent most of the meeting reflecting on how the PRA-process had unfolded that far. I had compiled a poster (Photograph 4.17) entitled *Tsakani's*[10] *Journey* (the name given to me by the participants at the start of the intervention) depicting my own journey to that point, which I shared with them, and then invited them to reflect on their journey and experiences. To this end, I requested the participants to list what they had liked about the process that far, what they had not liked, and which personal benefits, if any, they had gained. They presented their ideas on a poster and we jointly decided on symbols to use for the various categories – scorpions for experienced challenges, mealies (maize) for positives, and marula trees for personal gains (Photograph 4.18).

[10] Shangaan word for *happy.*

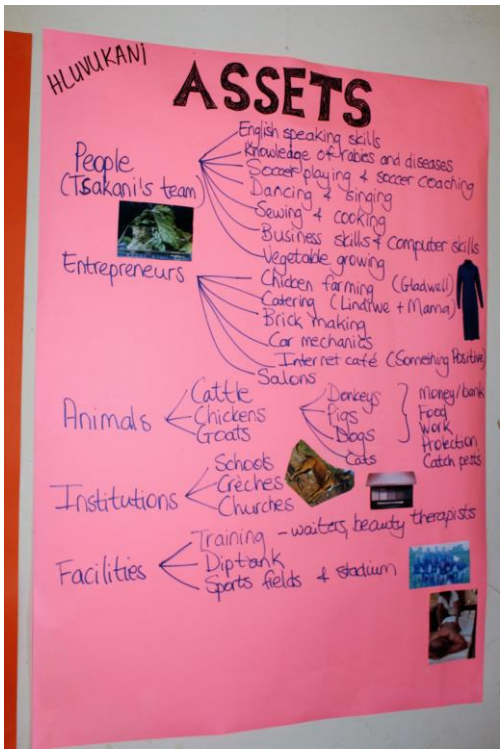
Photograph 4.17: My representation of my own journey at that point in time



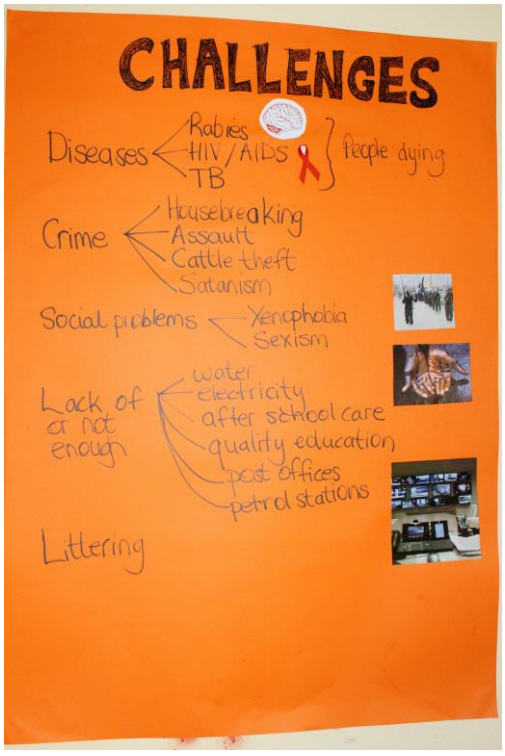
Photograph 4.18: Symbols agreed upon to denote challenges, what participants liked and how they had benefited

Meeting 2 was intended to be a transect walk, where the participants would walk with me through the village and indicate places of interest. However, as it turned out to be a rainy day, we decided to drive instead of walk. We visited the bridge at the entrance to the village, an indoor chicken farm, the dip tank, a training establishment, a resident who kept cattle in his back yard, and a nursery school. The group provided me with a written plan for the day's activities and created an attendance register, on their own initiative.

During Meeting 3, we reflected on the previous day's activities and again talked about beliefs and traditional practices, as this had been a topic of conversation after visiting the chicken farm on the previous day. This was followed by some information sharing on rabies, culminating in a lively discussion on the imminent danger of rabies if nothing was done about prevention in the community. The discussion ended in an agreement on the message that had to be shared with the community, focusing on vaccinating dogs, and correctly dealing with dog bites. Next, I presented some posters I had prepared of the community's assets and challenges they had indicated before (Photographs 4.19 and 4.20). I emphasised the fact that they (the participating group) could be regarded as a community asset. I introduced the participants to the GARC website (https://rabiesalliance.org), and the online Rabies Educator Certificate (REC) that they could complete. The meeting concluded with a discussion on an action plan for rabies prevention in Hluvukani, and this culminated in the formation of the "Hluvukani Rabies Fighters" (HRF). Their task until our next session was to start planning at least one rabies awareness activity.



Photograph 4.19: My representation of the reported community's assets



Photograph 4.20: My representation of the reported community's challenges

The focus on rabies became even more evident during PRA Session 5. We started meeting 1 with a reflection activity in terms of the three main questions stipulated at the start of the intervention. It was agreed that we had come a lot closer to answering these questions. Next, we discussed a proposed logo for the Hluvukani Rabies Fighters (Photograph 4.21), which I had arranged to be designed by an external partner. Thereafter a small group activity was initiated during which groups were requested to "tell the rabies story" in the form of a poster (Photograph 4.22). For this purpose, I provided magazines, rabies educational material, scissors, glue and a variety of pens and pencils. The participants seemed to enjoy cutting and pasting, and actively engaged with one another (Photograph 4.23).

HRF
HLUVUKANI RABIES FIGHTERS

Photograph 4.21: Proposed logo for the Hluvukani Rabies Fighters

Photograph 4.22: Section of a poster depicting the "rabies story"

Photograph 4.23: Participants engaging during a creative poster-making activity

During Meeting 2 of Session 5, the participants joined a group of third-year veterinary science students who were in Hluvukani for a community engagement assignment at a school in a neighbouring village. The students had prepared a presentation for the leaners on humane cattle handling methods and animal welfare, and the participants were invited to take part in the discussion. The participants, especially one of the young

males, participated spontaneously in assisting the learners with a learning activity they had to complete (Photographs 4.24 and 4.25).

Photographs 4.24 and 4.25: Participants assisting with university students' community engagement project

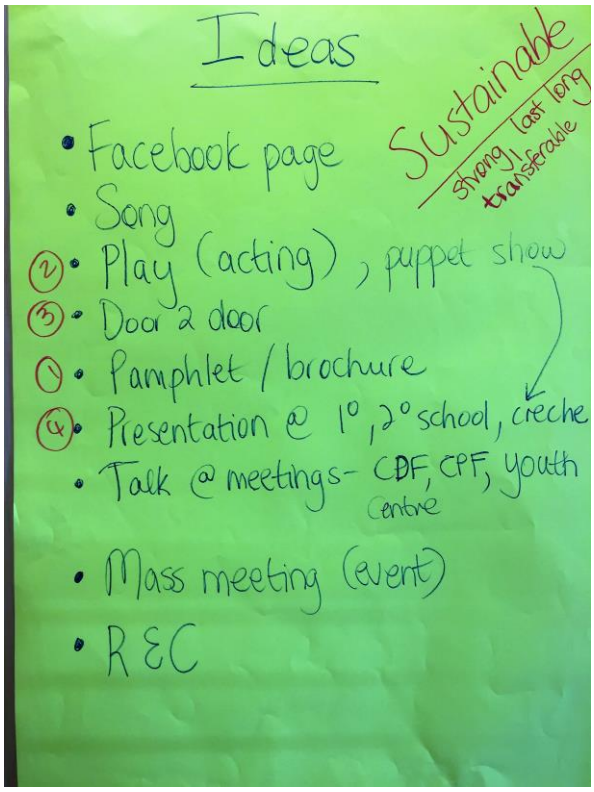
Upon our return, we reflected on the visit and some questions were raised relating to the content of the presentation, resulting in a discussion of the Five Freedoms[11] of animal welfare. Next, I asked the participants to think about their own preferences, skills and abilities, and how these could be utilised for a rabies awareness initiative. They appeared to have difficulty in making these links and struggled to come up with ideas. Observing the difficulty they experienced, I introduced some fun creativity exercises at the start of the next meeting. This activity was enjoyed by the participants and stimulated much laughter, as well as creative thinking (Photographs 4.26 and 4.27).

[11] A set of "freedoms" (freedom from hunger and thirst; freedom from pain, injury and disease; freedom from discomfort; freedom from fear and distress; and freedom to perform natural behaviour) that form the basis of optimal animal welfare (Mellor, 2016).

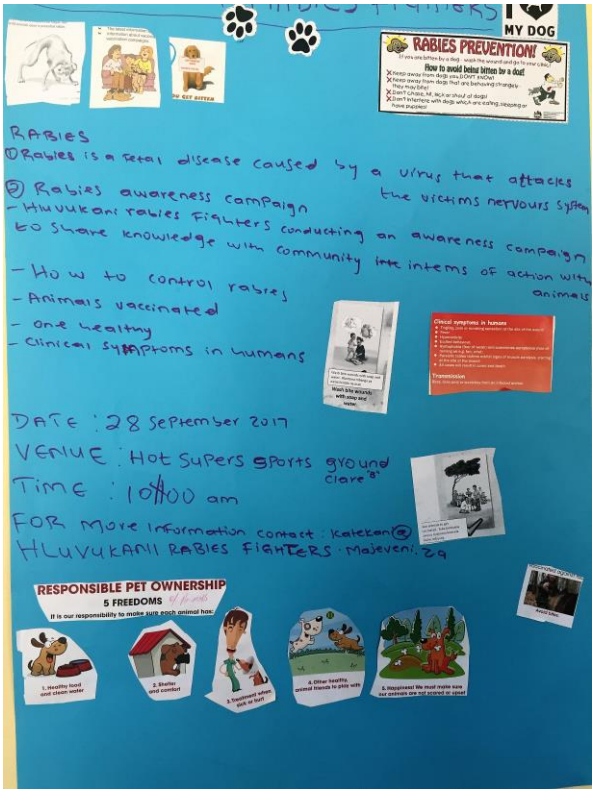
Photograph 4.26: Drawing portraits of each other without looking at the drawing

Photograph 4.27: The portraits the participants drew of one another

The rest of Meeting 3 involved the participants listing all the ideas they had already generated and completing a ranking exercise (Photograph 4.28) to decide which the best ideas were. The group agreed on three top projects – designing a pamphlet for use in Hluvukani, writing a script for an educational play on rabies, and planning a door-to-door campaign. They decided to work on the elements for a pamphlet and agreed to use the remaining rabies educational material and magazines to put together the main elements of a pamphlet that could be finalised and printed at a later stage. They summarised their ideas on a poster (Photograph 4.29) and explained them to me. We then discussed the REC in more detail and they undertook to start working on it before our next session. The local state veterinarian joined us for lunch and presented a talk to the participants, explaining what the state veterinary team was already doing in terms of rabies control at the time. This was followed by a personal discussion between the state veterinarian and me, to provide him with feedback about how the process had unfolded up to that point. He shared some thoughts with me about how the HRF could be accommodated in his rabies vaccination campaigns (Research Journal Part 5, pp. 41-44).



Photograph 4.28: Ideas for a project on rabies



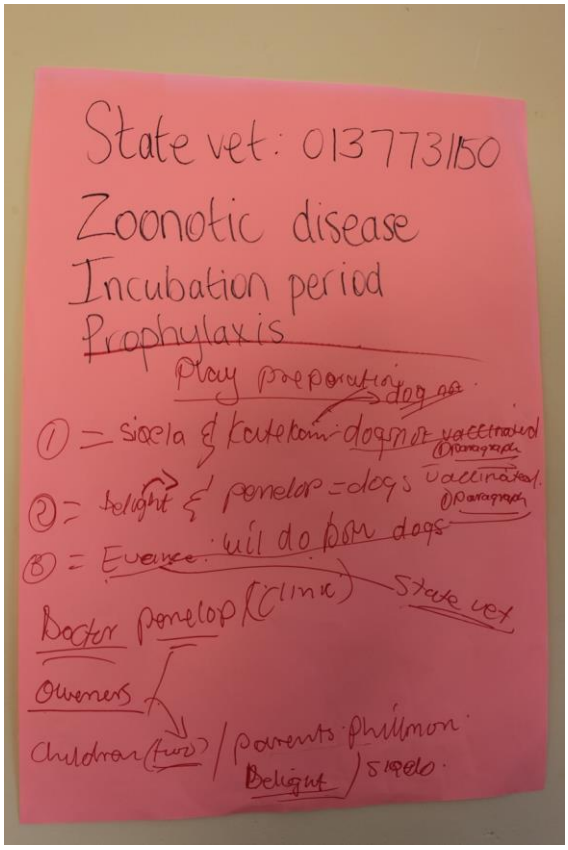
Photograph 4.29: Concepts to consider when designing a pamphlet

4.5.2.3 Ownership phase of the intervention

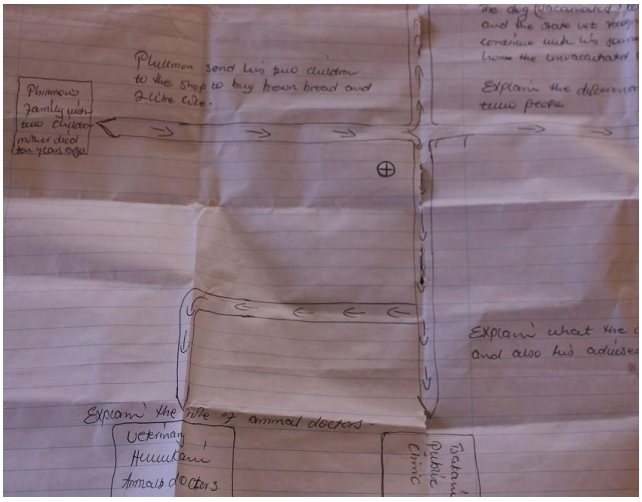
Phase 3, the ownership phase, marked a distinct move from planning to taking action. Three months elapsed between Phases 2 and 3, and three weeks between the two sessions of Phase 3. These two sessions were marked by the participants taking responsibility for action towards rabies prevention in the community. In support of their actions, I provided the participants with T-shirts with the HRF logo at the front, and the University of Pretoria/Mnisi Community Programme logo at the back (Photograph 4.30), which they wore during most of the subsequent meetings.

Photograph 4.30: Participants showing off their new HRF T-shirts

Session 6 consisted of two meetings only. At the first meeting, the group decided to prioritise the REC, as some of them had been doing door-to-door campaigning in the interim and had found that people were suspicious of their motives. Participants, as a result, wanted some documentary proof of their attempts and authenticity of their initiative. When the online assessment for the REC has been passed, one receives a “Rabies Educator Certificate”, which proves that one is qualified to talk about the topic. As a result, Meeting 1 was spent on going through Module 1 of the online REC. Participants decided that an educational play would be their next priority. While PM and I went to fetch lunch, the participants spontaneously started planning a plot for the play (Photograph 4.31).



Photograph 4.31: Planning Mbali's Story (bottom half of the poster)



Photograph 4.32: Section of initial stage plan for the play, produced by the participants

Meeting 2 subsequently entailed the creation of a theatrical rendition of *Mbali's Story*. One of the participants had prepared a plot for the play on paper (Photograph 4.32) that served as basis from which the play could take shape. It involved the story of Mbali, a young girl, who is bitten by a dog that has fortunately been vaccinated against rabies, resulting in a positive outcome. Mbali's father washes her wound immediately after being bitten, the state veterinarian vaccinates the other dogs that are not yet vaccinated, and Mbali learns about dog bite prevention.

The participants decided to present the play to primary school learners in Shangaan. They rehearsed the play a few times while I timed them and made a few suggestions relating to stagecraft. The final version was about seven minutes long. Participants were excited and enjoyed the activity (Photographs 4.33 and 4.34). I merely observed them without being actively involved. For the last part of the meeting we worked through Module 2 (of 5) of the REC. At the end of Meeting 2, the regional state

veterinarian joined us for lunch. He was very impressed with what the group was doing, and invited them to perform the play during the World Rabies Day celebration they had planned for Hluvukani in September. The group, however, decided to present the play to the local primary school as soon as possible and PM was delegated to arrange a visit to the school to coincide with my next planned visit to them three weeks later.

Photographs 4.33: A participant pretending to be a rabid dog as part of their play "Mbali's Story"

Photographs 4.34: Participants rehearsing the play

We started the first meeting of PRA Session 7 with a creativity exercise (Research Journal, Part 6, p. 13). One of the clinic veterinarians mentioned that a group of children from another nearby village would visit the animal clinic the following day, and asked whether the participants would like to present their play to these learners. The participants agreed, and PM confirmed that he had also made arrangements at the local school for the play to be performed on the day of our last planned meeting. This would give the group two opportunities to rehearse their play. They worked out a programme for the week and we reflected on where the project had started and where it was then, similar to the reflection done during PRA Session 4. I asked the participants to consider the effect on them personally, but also think of any potential effects on the broader community. After concluding this activity, participants spent the rest of the time rehearsing their play.

The next morning, the play was staged one more time before the learners arrived. It was performed on a patio in front of the state veterinarian's office. The performance went very well, and was followed by a question-and-answer session during which the learners asked many questions that were answered by the participants. The participants asked the learners questions in return to test their understanding of the

topic. A principal of a nearby primary school happened to be at the clinic with his sick goat at the time, and was invited by the participants to watch the play. He subsequently invited the group to present their play at his school too. We all viewed the video of the performance afterwards and the participants made some mental notes for improvement for the next performance. Following this event, we spent the remaining time of the meeting on the REC.

For Meeting 3, we met earlier than usual to be on time for the primary school's early break, which was the time the school principal had allocated for the play to be performed, under a huge marula tree in the school grounds (Photographs 4.35 and 4.36). This performance was also very well received, with a long question-and-answer session afterwards. Upon reflection, the participants indicated their satisfaction with the session. We spent the rest of the morning working on the REC and on getting some of the participants registered for the course (Photograph 4.37). One participant even attempted to complete the final assessment, for which he got 83%; however the pass mark is 85%, implying that he had to re-attempt a week later. Just before lunch I distributed certificates of attendance (Appendix J) to all the participants and thanked them for their contribution to the study (Photograph 4.38).

Photograph 4.35: Theatre under the marula tree

Photograph 4.36: Mbali making friends with the "dog" (participant wearing a dog mask) under supervision of the veterinarian

Photograph 4.37: Working on the Rabies Educator Certificate

Photograph 4.38: Receiving certificates of attendance

4.6 DATA ANALYSIS AND INTERPRETATION

I conducted thematic inductive analysis, following a process of discovering patterns, themes and categories in the data, leading to findings that represent my interpretation of the themes I identified (Patton, 2015). Induction refers to inferring general rules from specific examples (Terre Blanche et al., 2014), in this study thus focusing on the utilisation of PRA in facilitating rabies awareness in a rural community. Although thematic inductive analysis is time-consuming, it provides a suitable method of obtaining and providing a detailed description of a phenomenon when utilising a case study design and/or interpretivist paradigm (Creswell, 2013; Flick, 2014).

In line with Stake's view (1995, p. 71) that, "there is no particular moment when data analysis begins", I started the data analysis process during data generation activities by making notes in my research journal and coming to working assumptions and ideas (Silverman, 2014; Yin, 2014). In this process, I took heed of Patton's (2015) advice to revisit my research questions continually, immerse myself fully in the data, continually reflect on my thought and decision-making processes, and document the process of analysis.

In conducting thematic inductive analysis, I followed the steps recommended by Creswell (2013). These are organising the data for analysis (ensuring that all audio-visual data is transcribed and that all data sources are properly filed and accessible); reading the raw data a few times while attempting to sift the trivial from the significant (Patton, 2015; Schurink et al., 2012); coding the data; identifying themes; and finally interpreting the meaning of the themes. I include a more detailed summary of the steps

I completed in Table 4.3 and illustrate the manner in which I completed these steps in Appendix K1.

Table 4.3: Steps of data analysis

Step 1	Assigning codes to extracts of the data in the margin (handwritten)
Step 2	Naming categories based on codes, and listing possible categories
Step 3	Assigning a category to each code in the raw data
Step 4	Grouping data from the same categories (copy and paste)
Step 5	Refining categories – merge, delete, re-name
Step 6	Re-grouping categories to align with research questions
Step 7	Refining themes – developing sub-themes
Step 8	Allocating categories to refined themes
Step 9	Re-arranging data and categories to align with themes and sub-themes
Step 10	Formulating final themes following consultation with supervisors

I initially identified 20 categories, which increased to 39, as I worked through the data several times. In completing the analysis, once I had identified possible categories, I clustered individual codes in categories by writing a category number in the margin next to the code (See Appendix L1 and L2) (Terre Blanche et al., 2014) and then populating the list of categories with relevant data excerpts (See Appendix K2). A process of merging, deleting duplications and re-arranging data extracts resulted in a second version of data allocated to categories. After repeatedly working through the data and codes, I re-named some categories, merged some categories and eventually ended up with 26 categories listed in Appendix K1.

I then reshuffled the categories into themes that fitted together, and subsequently further refined the themes by adding sub-themes (Creswell, 2014). I identified five main themes with some related sub-themes, which is within the guideline of the number of themes provided by Creswell (2013) as well as Terre Blanche et al. (2014) when conducting qualitative research. Finally, after consultation with my supervisors and further refinements, I re-arranged the categories into four final themes and related sub-themes.

In reporting on the results and findings of this study, I carefully checked for weak points such as contradictions, over-interpretations, inadequate interpretations and biased interpretations (Terre Blanche et al., 2014). I strove not to represent my own interpretations, but rather those of the participants (Stake, 1995) by ensuring that the results I present in Chapter 5 are not mere pieces of data but are accurately represented in the context of the study (Silverman, 2014).

4.7 MY ROLE AS RESEARCHER

When reflecting on my role as researcher, complexity and a variety of roles come to mind. My role required of me to learn different skills at a practical level and also fulfil my role at methodological level. My role as researcher furthermore entailed fulfilling the dual roles of interventionist and investigator. In addition, guided by the PRA-process, I placed myself in the position of observer-as-participant in an attempt to understand the phenomenon from a partially insider perspective, thereby taking on an emic approach. However, as a reporting researcher, I also adopted an etic position, looking in from the outside (Lichtman, 2013; Mertens, 1998; Patton, 2015), stepping back and considering the study from my own conceptual framework, analysing and synthesising the data during interpretation as an outsider (Cohen et al., 2000; Creswell, 2013). As such, I had to balance these integrated, yet also different, roles.

As interpretivist researcher, I was the primary instrument in generating, documenting and analysing the data (Terre Blanche et al., 2014). In my role as instrument of inquiry, I thus had to be reflective about my own voice, potential bias and perspectives (Terre Blanche et al., 2014). Just like the participants, I too held a meaningful perspective, and by relating my own reality to that of the participants and constantly reflecting on

this, I attempted to maintain authenticity and trustworthiness, using my research journal to record my reflections (Liamputtong, 2013; Lincoln & Guba, 1985).

In my role as participant researcher, I was closely involved with the participants and the study's research activities. This allowed me to experience the intersubjective nature of PRA-methodology (Chambers, 2013; Patton, 2015) and immerse myself in the context I was studying (Cohen et al., 2000) to obtain thick descriptions that are required in qualitative research (Mertens, 1998). The risk, however, was to become too immersed or overwhelmed by the cultural experience, thereby potentially losing perspective (Angrosino, 2016; Patton, 2015). I managed this challenge through introspection and reflexivity throughout the study.

Reflexivity implies reflection on one's biases and prejudices (Cohen et al., 2000; Lincoln, 2010; Mertens, 1998). Reflection is an active and iterative process, which includes processes of closely monitoring one's interactions, reactions and roles, and requires a high level of self-awareness (Cohen et al., 2000). I regularly reflected on the differences between the participants and me, and how these differences and my past experiences, beliefs and culture could influence my choices in data generation, analysis and interpretation (Creswell, 2013; Creswell, 2014). The aim was not to exclude any influence, but to acknowledge it within the context of my study. As a result, I repeatedly tested my findings and conclusions against possible subjective influences to ensure that these were based on the data and not on my subjective perceptions or expectations (Kelly, 2014a; Patton, 2015). Having been involved in community veterinary work for a considerable time as volunteer, I had some preconceived ideas about community involvement in veterinary primary health care. As such, I had to maintain an open mind and rely on the data to inform my findings and recommendations, being open to alternative interpretations and guarding against preconceived ideas (Yin, 2014). Throughout, I engaged in reflections and debriefing sessions with my supervisors and colleagues (Mertens, 1998).

Furthermore, as interventionist researcher, different practical roles emerged that I had to fulfil − those of organiser, communicator, facilitator, learner, advisor, observer, empathetic listener, scribe and PRA-practitioner (Chambers 1992; Covey, 1990). As investigator, I had to plan, adapt, manage data, manage time, interpret, reflect, intellectualise and write. These roles required a variety of skills, some of which I

already possessed, yet some I developed during the process, and others I had yet to master. Having been a practising veterinarian for many years enabled me to adapt to changing situations when required, which is a hallmark feature of a participatory project. Due to my training as an educator (having obtained a postgraduate certificate in higher education) I also found it easy to communicate and to facilitate learning with a group of people whom I did not initially know. Finally, as a university lecturer who subscribes to the philosophy of learning and learner-centred teaching, which focuses on deep and transformational learning and on learners constructing their own meaning (Gravett & Geyser, 2004), I found it easy to progress towards PRA and utilise the interpretivist approach.

4.8 ETHICAL CONSIDERATIONS

In the context of participatory research, the researcher has an ethical responsibility towards the participants, co-researchers and other partners, as well as the discipline of science to report findings in a trustworthy manner (Strydom, 2012a). In this section, I discuss how I respected ethical principles. I specifically attend to informed consent, voluntary participation, confidentiality, anonymity, trust, safety and non-deception. I also describe how I shouldered my ethical responsibility towards the discipline of science, both from the perspective of an academic and a veterinarian.

4.8.1 Ethical considerations towards participants

As a researcher, I had to demonstrate respect for the dignity and autonomy of others. The research participants had freedom of choice in terms of their participation, they had the right to be informed about all the aspects of the research project and they had the right to self-determination (Wassenaar, 2014).

4.8.2 Permission to conduct research

I obtained permission to conduct this research from the Ethics Committee of the Faculty of Education, University of Pretoria in June 2016 (Appendix M). As a next step, I obtained approval to conduct the study from the research coordinator of the Mnisi Community Programme of the Faculty of Veterinary Science, University of Pretoria. I then met with the clinic veterinarian in Hluvukani, the study site, and the state veterinarian responsible for the area to inform them of my proposed study, before commencing with data generation activities.

4.8.3 Informed consent and voluntary participation

Informed consent implies that participants understand the risks and benefits of participation in a study. Informed consent can only be given by a person competent to do so, after being adequately informed and understanding that participation is voluntary (Flick, 2014). I concur with Ebersöhn et al. (2015), Patton (2015) as well as Wassenaar (2014) that a research process and consent procedures need to be discussed in detail with participants to ensure a proper understanding of mutual expectations, before participants commit to participation in a study.

Voluntary participation means that participants cannot be coerced to participate in a study and may withdraw from the process at any point without incurring any negative consequence (Creswell, 2013; Strydom, 2012a). This was ensured with a written invitation to potential participants (Appendix N) which explained the background to the study, and a verbal explanation of the written consent form (Appendix O). I informed participants clearly that they had no obligation to participate and that they could withdraw from the research process at any time. No participants withdrew their consent at any stage.

4.8.4 Confidentiality and anonymity

Confidentiality implies that the identity, private details and information of an individual are not made public in any way during a study or dissemination of the findings. In research, individuals have the right to decide for themselves about the extent to which their privacy may be encroached upon (Strydom, 2012a). To respect privacy and confidentiality, anonymity should be ensured during data generation and reporting of findings. Although I, as a participant researcher, was aware of the identity of the participants, I attended to anonymisation in two ways (Flick, 2014) by firstly ensuring that participants' real names are and will not be used in any publication; and secondly, for visual identification, by offering participants the option to indicate whether or not they wanted to have photographs taken of them, and also if they wanted their faces to be blurred out for publication (Creswell, 2013). All of the participants indicated that they preferred their faces to be exposed in photographs, not disguising their identities.

4.8.5 Honouring trust and avoiding any deception of participants

Trust depends on a mutually beneficial relationship between the researcher and participants, and enables the researcher to establish credibility with the participants (Patton, 2015). My early contact with the interpreter (PM) and chairperson of the CDF that acted as gatekeeper, allowed me to be introduced to the participants by "insiders" and supported relationship building. To further build trust between the participants and myself from the start, I used a few Shangaan phrases in my initial greetings, made a point of being open and honest about myself and the study throughout the course of our interactions, and did not make any promises I could not honour. The issue of compensation was addressed early in the process and I explained that the only benefit I could offer participants, apart from their own learning experience, was meals that would be provided at the end of each meeting, and certificates of participation at the end of the intervention (Silverman, 2013; Strydom, 2012a; Wassenaar, 2014). I made it clear from the start that I was unable to provide any gifts or financial benefit to the participants.

The prolonged time period over which the study took place contributed to the trusting relationships between the participants and me. In addition, I emphasised that the interests of the participants would be honoured throughout and that they were welcome to make inputs into the process at any time (Lincoln & Guba, 1985). I also remained honest at all times. Deception implies "misleading participants, deliberately misrepresenting facts or withholding information from participants" (Strydom, 2012a, p. 118). I thus actively avoided any form of deception by not misleading participants or misrepresenting any facts. I did not withhold any information relating to the study from the participants and undertook to share the findings of the study with them, as suggested by Creswell (2013), Patton (2015) as well as Strydom (2012a). In order to address unintended deception that might have occurred, I encouraged the participants to ask questions about the research process, or any related aspect, both during and after the intervention (Silverman, 2013).

4.8.6 Protection from harm

In keeping with the principle of autonomy and respect for the dignity of human beings, research participants may not be harmed or wronged as a direct or indirect consequence of any part of a study (Wassenaar, 2014). In order to ensure safety**,** I

had to avoid any incident where participants would be exposed to any form of risk. To this end, I anticipated possible risks that the participants could face (Flick, 2014; Creswell, 2013; Strydom, 2012a; Wassenaar, 2014; Yin, 2014), yet could only identify the time commitment that the participants had to make as one possibility. Participants were subsequently encouraged to inform me of any challenges they experienced as a result of participating in the study, and were also provided with the contact details of a colleague in Mnisi (the research coordinator for the Mnisi Community Project) whom they could contact if they wanted to report any issue. No issues were raised during the course of the study.

4.8.7 Ethical considerations towards science

I conducted this study wearing two professional hats – that of an academic and that of a veterinarian. As an academic, I appraised myself regarding the ethical requirements for performing research at a higher education institution. The first step once my proposal had been approved, was thus to obtain permission to conduct this study, which was granted by the Ethics Committee of the Faculty of Education, University of Pretoria in mid-2016. In keeping with ethical principles, I did not undertake any data generation activities prior to this date. Throughout the course of the study, I remained cognisant of the need to protect the integrity of data and disclose all evidence as honestly and accurately as possible. No data, evidence, findings or conclusions were fabricated and all text submitted in this dissertation is my own writing and not plagiarised. I also followed a rigorous analytical process to be able to reach valid conclusions (Creswell, 2012; Strydom, 2012a).

Although this study did not involve any activity normally included in the scope of work of a veterinarian, I nevertheless maintained the professional standards of a veterinarian. This required of me to treat all stakeholders of my study with respect and dignity, not disclose sensitive or confidential information and not make value judgments about the community I worked in or of its culture (Wassenaar, 2014). The funding I obtained from the South African Veterinary Foundation towards completion of this research was spent in accordance with the Foundation's expectations and proper financial records were kept.

4.9 QUALITY CRITERIA

The aim of sound research is to achieve understanding and build new knowledge that can contribute to the existing body of knowledge on the topic researched. Any research project must therefore comply with certain standards. In qualitative research, these standards can be measured against the so-called trustworthiness criteria of credibility, transferability, dependability, confirmability and authenticity (Guba, 2004; Lincoln, 2010). The first four concepts parallel the concepts of internal validity, external validity, reliability and objectivity of positivist or quantitative research. In this section, I describe how I attempted to achieve these criteria.

4.9.1 Credibility

Credibility refers to the degree to which research findings are convincing and believable, accurately representing the phenomenon that is studied. This means that a study will satisfactorily represent the multiple constructed realities included in its scope (Lincoln & Guba, 1985). Rigorous methods for fieldwork can be utilised to enhance credibility, of which I relied on prolonged and substantial engagement, persistent observation, triangulation and rival explanations (Patton, 2015).

Prolonged engagement allowed me and the participants to get to know one another, identify any misinformation (due to e.g. distortions introduced by me or by the participants) and build trust within the community (Lincoln & Guba, 1985). Persistent observation continued until adequate data had been generated, and guided me to terminate field visits at the point when saturation was reached (Kelly, 2014b; Mertens, 1998). Multiple engagements with the participants over a period of 10 months contributed to trust between the participants and me, which allowed for more accurate observations and may have assisted me in reaching meaningful findings and conclusions. The number of planned engagements increased as my study progressed, based on the PRA-principles I relied on, and allowed me to conclude the study at the point of saturation.

The use of triangulation to corroborate evidence from different sources and methods can add to the credibility of a study (Creswell, 2013; Kelly, 2014a; Lincoln & Guba, 1985). I included a variety of data sources, and relied on PRA-based activities, field notes, photographs, observations and documents to compare data sources and re-

confirm statements and different viewpoints (Patton, 2015). I actively pursued my aim of faithfully representing the multiple views of the participants and allowing their voices to be heard rather than focusing on my own voice. To this end, I applied member checking (Lincoln & Guba, 1985) to ensure that my understanding of what the participants had said accurately represented what they meant.

Furthermore, credibility can be enhanced by considering alternative explanations for findings and consciously seeking evidence that is discrepant to the conclusions being developed (Creswell, 2013; Lincoln & Guba, 1985; Patton, 1999; Patton, 2015; Silverman, 2014). I actively sought for evidence and explanations for my findings, and reported on these. Finally, the credibility of the researcher is important for the credibility of a study (Patton, 2015). Since the researcher is the primary instrument in qualitative studies, any factor that affects a researcher's state of mind may have an impact on a study. It is therefore important to provide information on the researcher – both as background but also in terms of information that may have affected any part of the research process. In order to reveal more about myself as the instrument of research, I provided contextual background to the current study from a personal perspective in Chapter 1, reflected on my role as researcher earlier in this chapter, and utilised a research journal (See Appendix B to G) to reflect on all issues emanating from my role as researcher, that may have affected the research process.

4.9.2 Transferability

The ability of a study to provide answers in similar contexts is referred to as transferability (Kelly, 2014b). To enable another researcher to apply the findings of one study to another context, the original study should be clearly described in sufficient detail, enabling other researchers to determine the degree of similarity between the two sites (Mertens, 1998; Lincoln & Guba, 1985). Lincoln and Guba (1985) refer to "fittingness" as the degree of similarity between two research contexts. Where the degree of congruence or fittingness is high, it may be possible to apply aspects of one context to another. This can be achieved through rich, thick descriptions (Mertens, 1998; Lincoln & Guba, 1985) and by making the research process transparent (Silverman, 2014). I include comprehensive descriptions of the research process in this dissertation, justify my decisions about the methods and methodology, and provide

detail on the context of the study (Kelly, 2014a). I also include a trail of evidence in the relevant appendices.

Transferability should not be confused with generalisability, since the aim of interpretivist studies following a case study design is not to generalise but to provide detailed descriptions of a particular phenomenon, with all its perspectives (Patton, 2015; Stake, 1995). By providing thick descriptions in a transparent manner, I strove to enable the reader to identify how some aspects and findings of my study may be applied to other similar settings.

4.9.3 Dependability

A high level of dependability in a qualitative study implies stability and consistency of the research process (Lincoln & Guba, 1985; Mertens, 1998). This implies that results may be repeatable if the study is conducted in another similar study (Mertens, 1998; Lincoln & Guba, 1985; Van der Riet & Durrheim, 2014). In a qualitative approach and interpretivist paradigm, it is accepted that research questions and designs may change as a study progresses, and that such an emergent character of a qualitative study is desirable, as long as the changes are documented (Lincoln & Guba, 1985; Mertens, 1998; Van der Riet & Durrheim, 2014).

An audit trail indicating dependability may include evidence or descriptions of sampling decisions, triangulation processes, whether or not methodological decisions during the research process were adequately identified and appropriate, whether or not all data have been accounted for, whether or not adequate data have been obtained, to what extent an inquiry was influenced by arbitrary decisions dictated by convenience or inappropriate interests, and whether or not premature judgments may have been made (Kelly, 2014b; Lincoln & Guba, 1985). In my study, I relied on detailed, rich descriptions (Van der Riet & Durrheim, 2014), augmented by visual images of the process, methods used and decisions made during the course of the study in order to provide a potential reader-auditor with adequate material to be able to follow the operational processes of the study.

4.9.4 Confirmability

High confirmability in qualitative research implies that conclusions are internally consistent and confirmable by the data obtained (Lincoln & Guba, 1985) and that the researcher can convince the reader of the accuracy of the findings (Van der Riet & Durrheim, 2014). In the positivist paradigm confirmability relates to objectivity; hence the absence of researcher bias as portrayed by intersubjective agreement of multiple observers. To this end, it is important to remain aware of the potential influence of researcher bias and guard against this when undertaking qualitative research. A so-called confirmability audit can be used to determine to what extent findings can be traced to raw data (Kelly, 2014b; Lincoln & Guba, 1985; Mertens, 1998), focusing on the nature of original data sources; and deciding whether or not data were logically analysed and appropriately categorised, thereby producing a confirmable chain of evidence. Finally, it is also important to determine whether or not the researcher had adequately reflected on the analytical process (Lincoln & Guba, 1985).

In applying these guidelines to my study, I attempted to describe all data sources and the analysis procedures I completed clearly (Van der Riet & Durrheim, 2014). I attempted to demonstrate how I aligned my findings, interpretations and conclusions by including relevant examples, based on the data, trying to avoid my own biased views. As an interpretivist researcher, I could not claim complete absence of researcher bias (Welsh & Piekkari, 2017), yet I continually reflected on my actual and potential biases, and aimed to acknowledge these, remaining aware of how my own opinions, experiences or beliefs could potentially have affected my findings and interpretations (Lincoln, 2010; Patton, 2015). In addition, I sought confirmation from the participants that my understanding was in fact an accurate reflection of their reality and views, by employing the member checking strategy (Lincoln & Guba, 1985).

4.9.5 Authenticity

Authenticity captures aspects of fairness, ontological authenticity, educative authenticity, catalytic authenticity and tactical authenticity (Guba, 2004; Lincoln, 2010). Fairness implies a balanced view in which all the perspectives and insights of the participants are accounted for and provided (Guba, 2004; Lincoln, 2010; Mertens, 1998). This can be achieved by thorough consideration of all the data on an equal level, involvement of participants in all parts of the research process, and documenting

their personal accounts of change and experiences of empowerment. I aimed to achieve fairness by thoroughly explaining how data were generated, identifying the participants, listening carefully to them, exploring their levels of empowerment, doing member checking, employing reflexivity and including rich contextual descriptions to ensure that the true perspectives of the participants are represented (Guba, 2004; Lichtman, 2013; Lincoln 2010; Mertens 1998).

Ontological authenticity refers to the extent to which participants and the researcher learn, and to what extent their views mature during a research process. Ontological authenticity can be achieved by comparing early perspectives with later views, and asking participants about their personal growth (Guba, 2004; Lincoln, 2010; Mertens, 1998). I explored the participants' experiences of growth as the study progressed, reflected regularly, and attempted to maintain a chain of evidence that demonstrates the changes experienced in myself and by the participants during the course of the study (Yin, 2014). *Catalytic authenticity* indicates the extent to which action is stimulated and facilitated by a research process. This is usually demonstrated by the level of responsibility taken for action by participants (Guba 2004). My study demonstrates catalytic authenticity in the sense that the participants did not only formulate an action plan to address the rabies problem in the community, but also physically took action by hosting an educational theatre.

A high level of *tactical authenticity* implies a high degree of participant empowerment to take action, as required by a study. This can be accomplished by involving participants during all stages of an inquiry, doing member checking, maintaining confidentiality, including follow-up activities, and through the testimony of participants. My study enabled social action and even though time will tell whether or not sustainable activities had been established, participants seemed enthusiastic to continue with their formulated action plan (Guba, 2004; Lincoln, 2010; Mertens, 1998). Finally, *educative authenticity* indicates to what extent individual participants and a researcher gain enhanced understanding of, and tolerance for other stakeholders' perspectives. This is evident when open and democratic sharing of knowledge occurs, which can be demonstrated through an audit trail. I utilised member validation, included thick descriptions, relied on reflexivity and provided a clear chain of evidence in order to ensure educative authenticity (Guba, 2004; Lincoln, 2010).

4.10 CONCLUSION

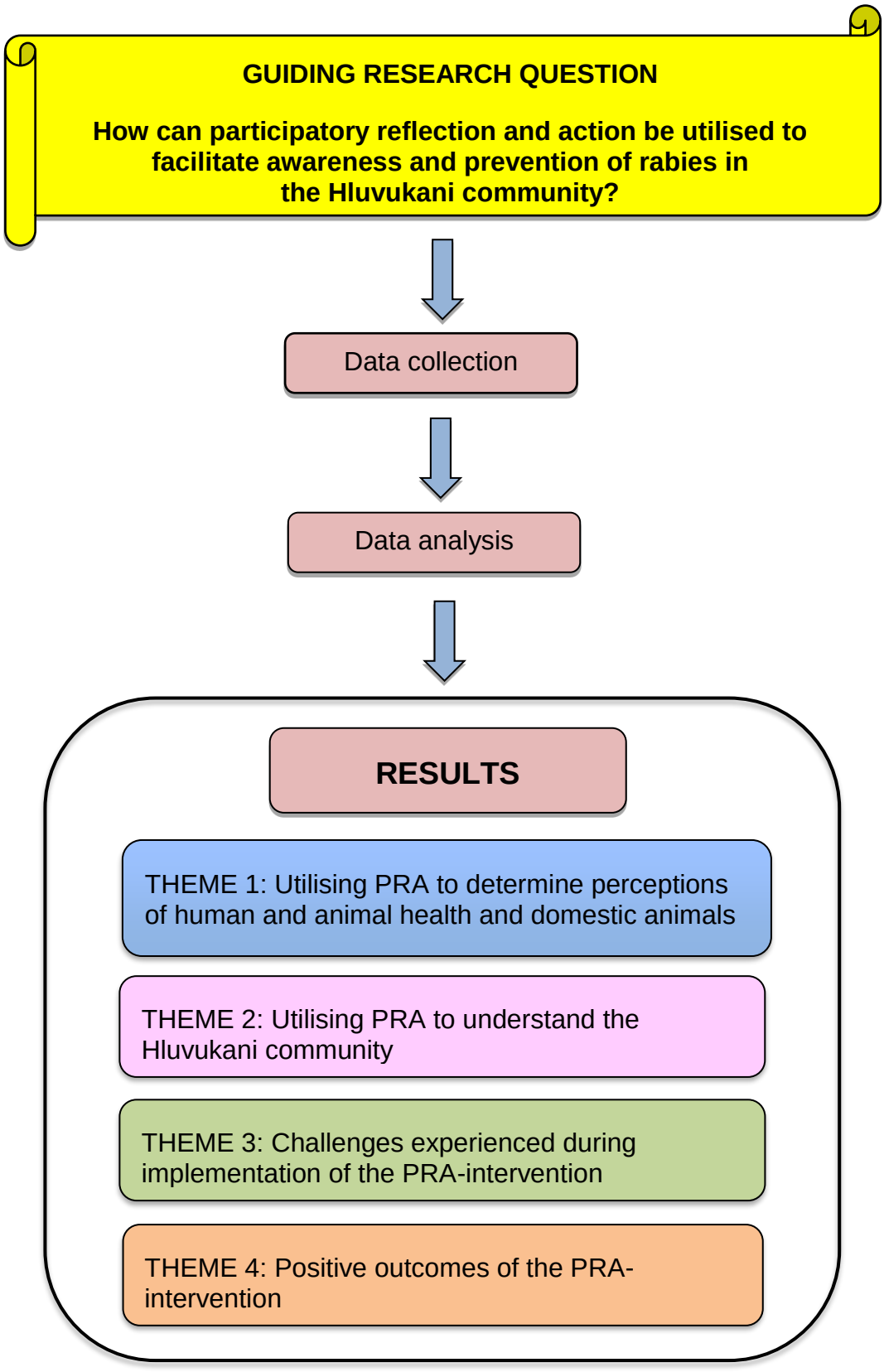
In this chapter I discussed the case study design I implemented, guided by PRA principles and strategies. I provided a detailed description of the research process, discussing the case, research site and participant selection, data generation, documentation and analysis, and how I perceived my role as researcher. I concluded with a discussion of the ethical guidelines I followed and the quality criteria I strove to adhere to.

In the next chapter, I present the results of the study. Based on the thematic inductive analysis I completed, I identified four themes with related sub-themes. In discussing these themes, I include extracts from the data to support the results I present.

CHAPTER 5

RESULTS OF THE STUDY

OVERVIEW OF THE CHAPTER



5.1 INTRODUCTION

In Chapter 4, I discussed the selected research design and described the implementation of the PRA process in detail. I explained how I selected the case and participants, which data sources were used and how I analysed the data. Following thematic inductive analysis, I identified four main themes.

In this chapter, I discuss these themes and their related sub-themes, and support my discussions with extracts from my research journal, the documents produced by the participants as part of the PRA-activities, transcripts of recordings as well as photographs. As an overview I present the themes and sub-themes in Table 5.1.

Table 5.1: Overview of themes and sub-themes

Theme 1: Utilising PRA to determine perceptions of human and animal health and domestic animals
Sub-theme 1.1: Perceptions of human and animal health service provision in Hluvukani
Sub-theme 1.2: Views on domestic animals and their purpose in society
Sub-theme 1.3: Initial views on rabies and rabies-related aspects
Theme 2: Utilising PRA to understand the Hluvukani community
Sub-theme 2.1: Challenges faced by the community
Sub-theme 2.2: Strengths and assets of the community
Theme 3: Challenges experienced during implementation of the PRA-intervention
Sub-theme 3.1: Limitations in terms of participants' contributions
Sub-theme 3.2: Challenges related to group dynamics
Sub-theme 3.3: Challenges related to perceived power differences
Theme 4: Positive outcomes of the PRA-intervention
Sub-theme 4.1: Increased awareness and knowledge of animals, animal health care and rabies
Sub-theme 4.2: Increased participation and willingness to take action and promote positive change in the community
Sub-theme 4.3: Role of individuals in taking the lead and motivating other group members

5.2 THEME 1: UTILISING PRA TO DETERMINE PERCEPTIONS OF HUMAN AND ANIMAL HEALTH AND DOMESTIC ANIMALS

This theme captures the perceptions that the participants had at the start of the study of human and animal health, domestic animals in general, and what rabies and rabies-related aspects entail. In Table 5.2 I summarise the inclusion and exclusion criteria I applied in identifying these sub-themes.

Table 5.2: Inclusion and exclusion criteria for Theme 1

Theme 1: Utilising PRA to determine perceptions of human and animal health and domestic animals			
Sub-theme		**Inclusion criteria**	**Exclusion criteria**
1.1	Perceptions of human and animal health service provision in Hluvukani.	Data related to knowledge and perceptions of health, traditional healers, animal health and veterinary services in the Hluvukani area.	Data related to the views on domestic animals including dogs, or any knowledge on rabies.
1.2	Views on domestic animals and their purpose in society.	Data referring to the roles of domestic animals, including dogs, and the way in which participants view such animals.	Data related to views on human and animal health service provision, or any existing knowledge on rabies.
1.3	Initial views on rabies and rabies-related aspects.	Data related to participants' existing knowledge of rabies and related issues.	Data related to participants' views on domestic animals, and perceptions on human and animal health service provision.

5.2.1 Sub-theme 1.1: Perceptions of human and animal health service provision in Hluvukani

This sub-theme captures the participants' perceptions of disease in general as well as the relation between human and animal health. The role of traditional healers as well as an awareness of and perceived need for animal health services in the area are also represented. In this regard, participants displayed a general awareness of valuable health-maintaining practices, such as the need for hygiene, as expressed in comments

such as, *"washing after having been to the toilet"*[12] (Participant PM, RJ 2, p. 6) and, *"we must make sure that we take [a] bath everyday morning"* (PRA-WD, 8/11/16, p. 6). Participants furthermore seemingly understood the link between human and animal health regarding the consumption of animal products. To this end, a participant noted: "We get meat from them so to get us health[y] we must eat health[y] meat and milk" (PRA-WD, 8/11/16, p. 6). Nutritional knowledge seemed evident in references made to, for example, vegetables being *"rich in carbohydrates and vitamins which is health in our body and also lucern[e] for our cattle"* (PRA-WD, 10/11/16, p. 8).

With regard to the participants' views on traditional healers, I reflected as follows: *"Disease is viewed with a mixture of spirituality and tradition"* (Field notes, 10/11/16, RJ 2, p. 17). In support of my observation, a strong belief that ancestors will affect one's daily life and have to be appeased was evident in referrals to the use of traditional healers as communication channel with the ancestors. To this end, I noted: *"Forefathers' spirits operate in their own way and we don't necessarily see that – we need traditional healers to help see it and understand it. It's what the ancestors want to tell you"* (Field notes, 10/1/17, RJ 3, p. 6). As further clarification, participants reported that they would consult sangomas[13], when the medical clinic did not provide satisfactory service, or when a challenge appeared to be of a psychological nature. In such instances, participants apparently preferred traditional methods, as captured in my notes: *"For soul problems you go to the traditional healer, for body problems you go to the clinic"* (Field notes, 10/1/17, RJ 3, p. 7). To this end, participants believed that, *"if a child is crying and the clinic does not find any reason, the child may be bewitched. In such a case, they would seek the help of a traditional healer"* (Field notes, 10/1/17, RJ 3, p. 6). I furthermore noted the following: "Traditional healers can tell you about the future" (Field notes, 10/1/17, RJ 3, p. 6) and importantly, *"witchcraft comes into play when people have certain symptoms, or if people die in an unusual way"* (Field notes, 10/1/17, RJ 3, p. 6).

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[12] Henceforth the following abbreviations will apply: TS = audiovisual transcripts; PRA-WD = written document (contributions of participant EM), and RJ = research journal, followed by the journal number (the journal is divided into 6 parts). Individual participants are indicated with the word "Participant" followed by the initials of his/her name and surname.

[13] Sangoma is an alternative term for traditional healer.

Participants indicated that it was not necessarily expected of a traditional healer to provide medicine for a particular malady, as captured in my field notes: "Very often, simply knowing what is wrong (for example, the ancestors are telling you this or that), fixes the problem" (Field notes, 10/1/17, RJ 3, p. 6). One of the participants shared a personal story illustrating this point, which I captured as follows: "EM said he did not use his voice as a baby – he would have tears but no voice" (Field notes, 10/1/17, RJ 3, p. 6). His parents reportedly took him to a traditional healer who indicated that this was because of the name his parents had given him, which was his grandfather's name, who allegedly also took some time to start using his voice as a baby. The participant's voice apparently came along following this visit to the traditional healer (Inferred conversation, 10/1/17, captured in field notes, RJ 3, p. 6).

Participants shared a number of traditional beliefs related to human beings. I captured some examples in my field notes, including the following: "If you wash a child in baobab water, the baby will grow well, but if the water touches its head, it will grow an oversized head"; "if you put a twig of a certain tree in your pocket, it will bring bad luck to your partner", and "don't borrow salt from your neighbour at night" (Field notes, 23/2/17, RJ 4, p. 21). They did not mention anything relating to animal health in their conversations about traditional healers and beliefs.

Despite several reports on traditional healers, it was evident that not all participants believed in ancestral spirits, superstitions and the powers of traditional healers. The majority of the participants did not, for example, believe that the presence of a woman in a cattle kraal could lead to the animals becoming ill. When reflecting on PRA Session 3, I noted: "The younger people in general do not make use of traditional healers much" (Field notes, 10/1/17, RJ 3, p. 6). In explaining this move away from traditional beliefs, the participants said, "Sometimes these beliefs are made up in order for people to behave in a certain way" (Field notes, 23/2/17, RJ 4, p. 21). In addition, they mentioned practical reasons, "such as that the belief that one should not borrow salt from one's neighbour at night probably originated simply because one is more likely to trip and fall, and then spill the salt when walking outside at nighttime" (Field notes, 23/2/17, RJ 4, p. 21).

With regard to the participants' knowledge of veterinary services in the area, at the start of my study, "participants were aware of the existing dip tank in the village, and

knew that cattle could be taken for dipping on Mondays*"* (Field notes, 22/2/17, RJ 4, p. 14). During PRA Session 2, when discussing possible community projects, participants proposed a "koöperasie" (a farmers' co-operative), referring to "a place where we gonna get a medicine to take care of the animals*"* (Participant EM, TS, p. 12), as well as renovations to the existing dip tank. In this regard, a participant said: "As well as a dip tank and also to improve our veterinary services if we going to have that dip tank so the services would be improved" (Participant EM, TS, p. 12).

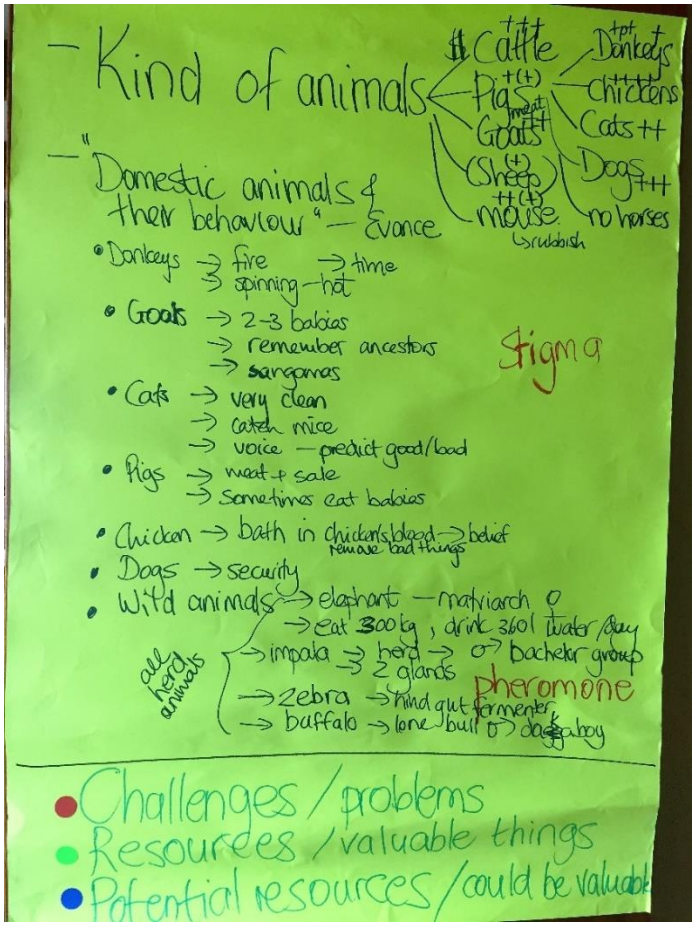
As such, participants seemingly experienced the need for improved veterinary services in the area, particularly with regard to the timely provision of services. They mentioned that the current animal clinic was not always able to service all the clients, saying, *"*They only take time … my cow was sick that side where we are staying for example, they gonna say we're gonna come, we're gonna come. They took time*"* (Participant KM, TS, p. 18). Another participant confirmed this, by saying, "Yes, they are keeping you waiting" (Participant SN, TS, p. 18). Participants furthermore expressed a need for more trained professionals, presumably animal health technicians and explained, *"*A trade experience person is a[n] important useful thing – he play an important role to our livestock owners, he tells me if one of my cattle is not well" (PRA-WD, 10/11/16, p. 8). Similarly, a chicken farmer we visited during PRA Session 4, "expressed the need for assistance from a chicken expert" (Field notes, 22/2/17, RJ 4, p. 12).

Following initial discussions on the services available in the area, the participants appeared keen to visit the Hluvukani animal clinic. I observed them to be impressed with what they saw when taken on a tour of the facility during PRA Session 2, noting, "When I showed them red blood cells and white blood cells, they were certainly impressed, also with the worm ova" (Field notes, 10/11/17, RJ 2, p. 16). It was evident that they had not been inside the clinic prior to our visit.

5.2.2 Sub-theme 1.2: Views on domestic animals and their purpose in society

In this section I report on the participants' views on the different types of domestic animals present in Hluvukani, the functional uses of the various species and how these relate to some traditional beliefs. Traditional practices involving dogs in particular are also discussed.

Participant EM acknowledged that “animals are very much useful to people in different ways” (PRA-WD, 8/11/16, p. 6). In terms of the perceived numbers of animals in the community, participants indicated chickens to be the most prolific animals in Hluvukani, followed by cattle, dogs and goats. Participants reported that some pigs “and cats … and some donkeys, but not many sheep, [and] no horses” (Field notes, 10/11/16, RJ 2, p. 1) could be seen in the community. The feedback provided by participants was summarised on a poster, as depicted in Photograph 5.1.



Photograph 5.1: Information provided by participants on the animals in Hluvukani

Participants associated the different species of animals with different roles. To them, cattle, for example, represented wealth, goats were seen as useful for meat and cultural purposes, pigs were also regarded as useful for meat, yet to sell for a profit too, and donkeys were regarded as a means of transportation. To this end, participants, for example, stated during PRA Session 2 that cattle were like a traditional

bank helping people to maintain their families. On the transect drive during PRA Session 4, this idea was confirmed when participants showed me

> *a cow and a bull in a small paddock, with a small shelter, where they were apparently being kept permanently. Their physical condition seemed very good. They were being fed what seemed like mealie remains, grass and marula fruits. Not for slaughter apparently – part of the 'bank'* (Field notes, 22/2/27, RJ 4, p. 14).

As stated, goats were reportedly widely used for meat and for cultural purposes, such as communicating with the ancestors. Participants considered goats as important in remembering the ancestors and during certain traditional rituals. Other species were seemingly also used to communicate with the ancestors at events such as funerals. The type of animal and its colour were apparently determined by a traditional healer after consultation with the ancestors, often being: "… usually a white or brown chicken, goat or cow – not black" (Field notes, 10/1/17, RJ 3, p. 7). The uses of pigs and donkeys, as perceived by the participants, are captured in the following contributions: "Pigs are for meat" (PRA-WD, 8/11/16, p. 3) and "during the old ages they used [donkeys] as their transportation" (PRA-WD, 8/11/16, p. 1). In support, I observed a donkey cart in use in the village during one of my visits (Photograph 5.2).

Photograph 5.2: A donkey cart in use in Hluvukani

Regarding the purpose of dogs in society, participants viewed them as important mainly for security purposes. To this end, participants stated during PRA Session 2 that "dogs act as securities in our families" (PRA-WD, 8/11/16, p. 3), and "dogs are

important because they guard our families at night [and] act as a security. Maybe to avoid thieves" (Participant DK, TS p. 5). However, the expectation apparently existed that a dog should be aggressive to thieves, but should not bite family and friends, noted as follows: 'Yes, it's nice when the dog is good security and keeps away the thieves, but he mustn't bite you and your family'" (Field notes, 10/1/17, RJ 3, p. 8).

In addition, participants referred to the use of dogs for hunting during PRA Session 2 when they discussed objections to vaccinating dogs against rabies. They stated that "it reduces the speed of hunting" (Field notes, 10/11/16, RJ 2, p. 14). While dogs were valued for guarding properties, they were, however, also perceived as a problem due to issues such as "egg stealing, chicken stealing and biting" (Field notes, 10/1/17, RJ 3, p. 8).

Acquiring a dog for the sole intent of having it as a companion, was evidently unheard of in Hluvukani. I summarised my observations as follows: "I ask if they know of anyone who simply keeps a dog as company and they don't" (Field notes, 10/1/17, RJ 3, p. 8). Some people seemed scared of dogs, saying, for example, "The first time I came here, I was scared of the dogs [at the animal clinic]" (Participant SN, TS p. 27). In line with the participants' reports, I observed most of the dogs in the village to be free-roaming and did not see much close contact between people and dogs. The state veterinarian confirmed this observation when he mentioned that he and his colleagues were challenged when handling dogs during vaccination campaigns, "as the dogs were not used to being handled" (Field notes, 8/6/17, RJ 5, p. 23).

Although dogs were thus not specifically valued as companion animals, they seemed to be present and accepted as part of the environment. My reflection during PRA Session 3 links this observation to the visual image captured in Photograph 5.3. I noted: "The picture of the dog in the road with the school kids around, to me symbolises the life of a dog in Hluvukani – isolated, nobody cares, yet part of the landscape" (Personal reflection, 23/2/17, RJ 4, p. 19).

Photograph 5.3: A dog in Hluvukani

Cats were considered as not useful ("Cats are not useful to me as a human being", PRA-WD, 8/11/16, p. 2) yet it was mentioned in the same breath that "they control mice and reptiles at home", and that they are clean animals that "hide their faeces" (PRA-WD, 8/11/16, p. 2). Although chickens, goats and pigs seemed to be the species most widely consumed for meat, participants mentioned that "Shangaans don't eat cats as some other cultures do" (Field notes, 10/1/17, RJ 3, p. 7) and that donkey meat is also consumed by some, as noted in my field notes: "KM says donkey tastes good" (Field notes, 10/1/17, RJ 3, p. 7).

As indicated, the main use of chickens, according to the participants, was as food for the community. During the transect drive in PRA Session 4, I met a chicken farmer who said that it was "a full-time job and that he was making a profit" (Field notes, 22/2/17, RJ 4, p. 12). In support of this, "I observed several small businesses selling barbecued chicken and mieliepap [maize porridge] on a daily basis and sold as take-away meals" (Field notes, 5/10/16, RJ 1, p. 14). Chickens were furthermore reported to be used for traditional purposes, as stated by participant EM in his written contribution: "It is a belie[f] of Shangaan people that when you take a bath in the blood of chicken, you remove the devil spirit from your body" (PRA-WD, 8/11/16, p. 3).

Traditional beliefs relating to domestic animals and their uses were mentioned a few times during field visits. For example, the chicken farmer whom we visited, "did not allow the two young female participants into a certain section of his establishment

because he believed that doing so could harm the chickens" (Field notes, 22/2/17, RJ 4, p. 11). After a subsequent discussion of this aspect, I noted that "it was not entirely clear what the exact belief was, yet the majority of the participants stated that they did not believe these beliefs to be true" (Field notes, 23/2/17, RJ 4, p. 20).

Participants shed light on some traditional practices with regard to dogs in their village, more specifically in terms of cutting out the so-called "worm in the tongue" and methods of killing dogs when they became a problem. Even though the interpreter at the start of the intervention indicated that "no hanging of dogs and cutting of the tongue happens here anymore – it used to happen in the past" (Field notes, 1/9/16, RJ 1, p. 10), participants knew about these practices and reported having witnessed them. I captured a participant's report on this in the following manner:

> *The participants said that although it was not done as much as it used to be, it was well known and approved of. They believe that it is necessary especially during the rainy season. Participant PM recounted as follows how his father used to cut out the tongue: 'I once had to assist with this task. My father pulled out the tongue, placed a stick as a gag in the puppy's mouth, and removed the worm under the tongue with a razor blade. It was very painful for the puppy'. He maintained that there was a white worm there, which 'comes out when you remove it'* (Field notes, 10/1/17, RJ 3, p. 7).

Regarding the killing of dogs, it seemed evident that people in the community took it upon themselves to kill dogs that posed a problem to them. I noted as follows: "I asked what type of problems dogs got rid of or killed for. 'Egg stealing, chicken stealing and biting'" (Field notes, 8/11/16, RJ 3, p. 8). Three methods of getting rid of dogs were mentioned, namely to hang the dog from a tree, feed it fish bones or trap it. The hanging of dogs from trees seemed to be less common than in the past, as captured in the following field notes: "I asked about the practice of hanging dogs from trees. They said, 'Yes, people do it, but it is done less than before'" (Field notes, 10/01/17, RJ 3, p. 6). I also noticed an awareness that the practice is frowned upon in responses such as, "They reported that the SPCA says they mustn't do it, but they maintained that if you are the owner of the dog, you have a right to decide what happens to it, and if it causes you problems, you need to get rid of it" (Field notes, 10/1/17, RJ 3, p. 6). Upon enquiring whether or not anyone had actually witnessed such a hanging, I noted the following:

> *KM did a caricature of a dog struggling and howling. I asked him what was used to hang the dog and he said wire was used. I asked how long it takes before the dog dies, and he replied, 'An hour or so'. TK said that she had seen someone do it, but left before the dog died, as she didn't want to look anymore because it was upsetting* (Field notes, 11/1/17, RJ 3, p. 12).

Participants shared that another way of getting rid of a dog, was by feeding it fish or fish bones. In this regard, I noted: "SN explained the following belief: 'When a dog steals your chickens or eggs, if you throw fishbones at it, it will start losing its hair until there is no hair left and the skin gets crusty and the dog dies'" (Field notes, 9/11/16, RJ 2, p. 8). When revisiting the same issue a few weeks later, I was told that "within two weeks of feeding fish bones to a dog, it would start shedding its hair and subsequently die" (Field notes, 10/1/17, RJ 3, p. 7). Finally, the trapping of dogs was mentioned by the interpreter at the start of the intervention. According to him, "dogs were being trapped due to them catching goats, and were then sometimes strangulated by the trap" (Field notes, 1/9/16, RJ 1, p. 9).

Other traditional beliefs regarding animals included that cats "… cry with a loud … voice which means things are coming to that family and it can be good or bad" (PRA-WD,8/11/16, p. 2) and that "donkeys can cause fires by kicking with their forelegs – then fire comes out if the grass is long and dry and takes the fire easily. Donkeys can indicate the time – they cry every hour" (PRA-WD, 8/11/16, p. 1). A surprising story that everybody seemed to know about, and most participants appeared to believe, related to a cow in a nearby village allegedly having given birth to a human baby, twice (Field notes, 23/2/17, RJ 4, p. 21). Participants indicated that "the man shot the cow, and shortly afterwards he died" because **"**the cow put a curse on him" (Field notes, 23/2/27, RJ 4, p. 21). While the participants seemed willing to question the veracity of a cow giving birth to a human baby ("This could have been a prank or a case of a severely deformed calf", Field notes, 23/2/17, RJ 4, p. 21), they seemed convinced that the man had died due to the cow's curse (Field notes, 23/2/17, RJ 4, p. 21). I noted in this regard: "They vehemently disagreed …" when I suggested "that just because two events occur close to each other, does not in itself mean that the one caused the other to occur" (Field notes, 23/2/17, RJ 4, p. 21). I subsequently reflected on this as follows: "So it is interesting that while there is definitely a trend to question traditional

ideas, associations between events that are not necessarily associated, are easily made" (Personal reflection, RJ 4, p. 21).

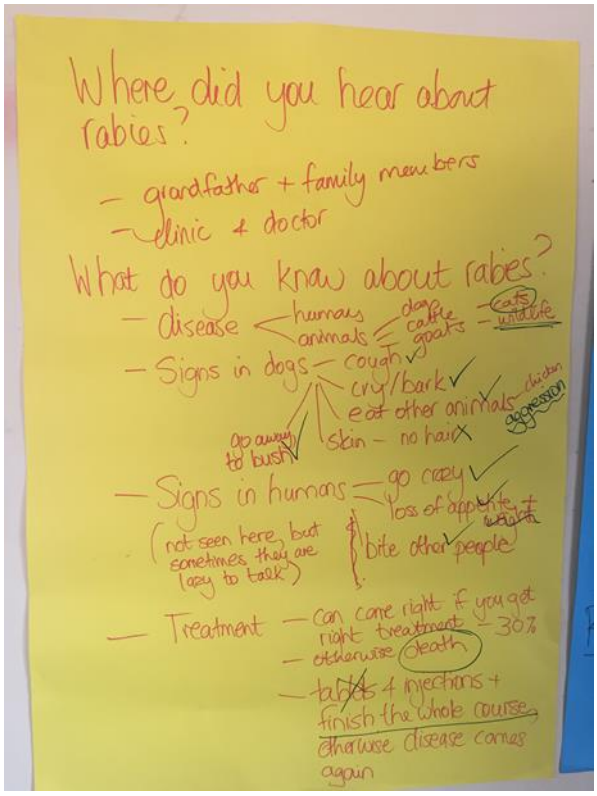
Finally, participants demonstrated a fair amount of practical knowledge about animal husbandry and in particular, reproduction. Their knowledge is evident in the following extract taken from a written contribution by a participant:

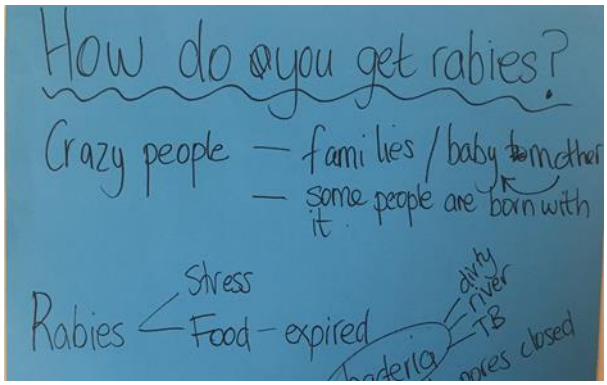
> *When a bull is castrated we call it an ox (no production), female gives birth once a year, sometimes the female aborts*; *goats give birth twice a year and sometimes give birth by two or three*; *pigs give birth in multi-number and sometimes they eat their babies after birth … and chicken gives birth in large numbers* (PRA-WD, 8/11/16, p. 1).

5.2.3 Sub-theme 1.3: Initial views on rabies and rabies-related aspects

In this section, I report on how rabies was perceived by the participants early on in the study. In this regard, during PRA Session 2, several perceptions, including misconceptions, about rabies were revealed.

Initial views on rabies were captured on two posters (Photographs 5.4 and 5.5) that recorded participants' contributions during a group discussion. Misconceptions relating to rabies, as reported by the participants, included that "loss of weight and appetite" were signs of rabies in humans, and that "hair loss" was a sign of rabies in dogs (Poster, Photograph 5.4). More incorrect understandings about how rabies is transmitted, were evident in contributions of participants who reported that the disease could be passed on "by eating the animal's meat" (PRA-WD, 8/11/16, p. 8), and "from mother to baby, some people are born with it, if you eat expired food, stress" (posters, Photographs 5.4 and 5.5.).





Photographs 5.4 and 5.5: Notes made during a discussion exploring initial perceptions of rabies[14]

The treatment of rabies was misunderstood as it was suggested that tablets or injections could be helpful: "You must finish the whole course, 30% can come right with the correct treatment" (Poster, Photograph 5.4). Another participant regarded general hygiene as central, stating, "… we must make sure that we take [a] bath everyday morning, day and night…" (PRA-WD, 8/11/16, p. 6). Participants furthermore indicated that people had some objections to having dogs vaccinated against rabies, for example. I reflected on this during PRA Session 4 in the following manner: "People believed it would harm their dogs, even kill them, and hunters believed that it sapped their dogs' energy" (Field notes, 23/2/17, RJ 4, p. 24).

When participants were asked for ideas to create awareness of rabies in the community, the following suggestions, which reflect an incorrect understanding of rabies, were made: "Visit cattle [dip tank] to check if there is water and other substances", "visit schools, clinics and crèches to check if the place and children are

[14] Initial perceptions were recorded in red on Photograph 5.4, and notes following a subsequent discussion on rabies were added later in black.

clean" and "have meetings with the cattle owners and game reserves quarterly to teach them about rabies" (PRA-WD, 10/11/16, p.10). The misconception that cattle are important in rabies prevention was repeated during a telephone conversation with participant EM after PRA Session 2. He did not seem to understand the role of dogs in preventing rabies as his proposal for the name of the rabies awareness project was "One Health and Livestock Theft Awareness Campaign", which did not relate to rabies prevention (Field notes, 8/11/16, RJ 2, p. 17).

During my pre-intervention visit to the local human clinic, the nurse on duty "displayed a high level of understanding of rabies" (Field notes, 1/9/16, RJ 1, p. 8), but according to the participants, later during the intervention, staff in a smaller clinic in a neighbouring village had no knowledge of rabies. I captured their explanation as follows: "DK and PN told me that they were at a human clinic, and found that the sisters there did not know much about rabies" (Field notes, 7/8/17, RJ 6, p. 1).

5.3 THEME 2: UTILISING PRA TO UNDERSTAND THE HLUVUKANI COMMUNITY

In this section, I describe the results related to an understanding of the broader community through the utilisation of a PRA-intervention. I report on two sub-themes, the challenges faced by the community, and its strengths and assets. Table 5.3 details the inclusion and exclusion criteria I utilised to identify these sub-themes.

Table 5.3: Inclusion and exclusion criteria for Theme 2

Theme 2: Utilising PRA to understand the Hluvukani community			
Sub-theme		**Inclusion criteria**	**Exclusion criteria**
2.1	Challenges faced by the community.	Data related to community challenges and needs in general, and also specifically with respect to animals.	Data related to community and participant assets, solutions, support, including animal-related assets.
2.2	Strengths and assets of the community.	Data related to community and participant assets, solutions and support, in general and with respect to animals.	Data related to community challenges and needs, including those related to animals and animal health.

5.3.1 Sub-theme 2.1: Challenges faced by the community

I discuss community challenges in terms of limited service provision, crime, dependence on Government, poverty, unemployment, quality of education, and animal-related challenges, as reported by the participants. As Hluvukani is a rural community, the challenge of limited service provision was mentioned regularly during the contact sessions. The first part of the intervention took place during a severe drought, with the result that a lack of water was foremost in the minds of most people, as captured in the following contribution: "Shortage of water is a challenge" (PRA-WD, 10/11/16, p. 8). Some houses were reportedly connected to a water system, yet many were not, as expressed during PRA Session 3 in the following way: "In this community we need a pipe, I mean house to house pipe, then the granny won't take a wheelbarrow to fetch water far away" (Participant KM, TS, p. 9). Not everyone in the community had electricity either, as evident from my observation that the chicken farmer had bulbs for heating the young chickens but was unable to utilise these (Field notes, 22/2/17, RJ 4, p. 12), and of the many women I observed cutting and carrying wood (Personal observation, 31/8/16, RJ 1, p. 7). It was, however, not clear to me whether the chicken farmer had access to electricity and could not afford it, or whether there was no access to electricity, since I observed electrical equipment as well as a generator, but none of these was evidently being used. I also did not get an opportunity to ask the farmer for clarity on this matter.

With regard to other services in the community, the lack of dustbins in public areas was identified as a challenge in the following manner: "We had a challenge of dirt around here because we don't have dustbins on the streets" (Participant DK, TS, p. 4). The paucity of postal services was also mentioned: "We have one post office here and small villages near Hluvukani use that one" (Participant DK, TS, p. 6) as well as the lack of sufficient fuel stations: "We have one filling station here in Hluvukani and most of the small villages depend on that one … we struggle, so we need more garages" (Participant DK, TS, p. 6).

Closely related, several references were made to reliance on the national government to provide certain necessities. Participants said: "So the government can supply us with dustbins" (Participant DK, TS, p. 4), "I think Government could assist us with that one [more garages]" (Participant DK, TS, p. 6) and "Government must assist that guy

with a machine to bake bricks" (Participant DK, TS, p. 6). In some instances where resources were provided by the state, their utilisation seemed to be insufficient. As an example, during the transect drive of PRA Session 4, I was shown some buildings that had reportedly been earmarked for a retirement home and later for a children's home, but were still unused at the time (Field notes, 23/2/17, RJ 4, p. 20).

Poverty was evident in several participant contributions such as: "We don't have money" (Participant EM, TS, p. 1) and "[Those] who pass matric and don't have money to further their education" (Participant DK, TS, p. 5). In addition, one of the participants who was studying online stated that he "didn't have money for the internet" (Field notes, 12/1/17, RJ 3, p. 15). In a more indirect sense, poverty was reflected in a comment by a life orientation teacher of learners who were visiting the animal clinic in Hluvukani, referring to the lack of employment opportunities in Hluvukani. In this regard, I noted that "she asked what careers do you teach children about in Mnisi, and how do you expose them to opportunities when there are so few?" (Field notes, 1/9/16, RJ 1, p. 10). This observation is supported by a comment by a participant who reportedly held a tertiary qualification, but "cannot get a job here with that qualification" (Field notes, 11/1/17, RJ 3, p. 11).

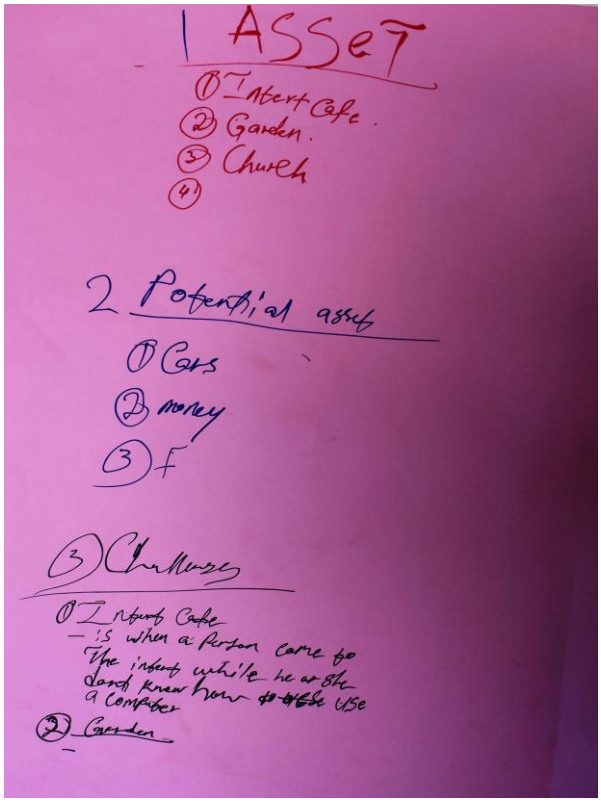
A related challenge that the participants identified, was crime. The following concerns were expressed during PRA Session 1 and I noted these as follows:

> *The participants mentioned the following issues as concerns: housebreaking (by boys who are not at school), people considering themselves a failure, smoking nyaupe, people being killed for their blood [apparent satanic practice], stock theft, women being assaulted when walking alone on communal land and xenophobia* (Field notes, 6/10/16, RJ 1, p. 21).

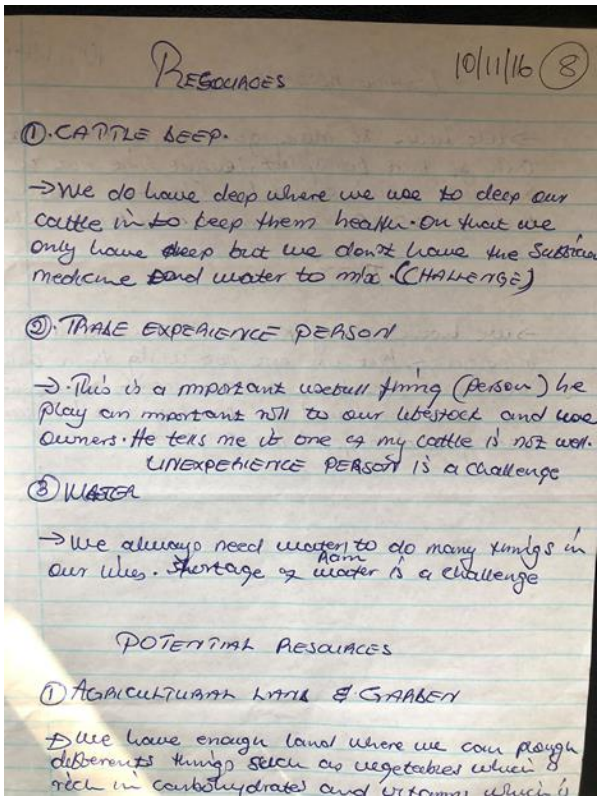
Related to their concerns about unemployment, participants identified job creation, the improvement of sports skills and the establishment of a sewing school as needs in the community when asked about their dreams and aspirations (Field notes, 6/10/16, RJ 1, p. 21). Quality education was also perceived as a challenge by the participants, who said, "They mentioned how all the focus is on matric when the actual schooling process from pre-school is being neglected, the poor quality of teachers … and how a matric certificate doesn't necessarily mean much" (Field notes, 11/1/17, RJ 3, p. 11). The need for good quality pre-school education was voiced when an English-medium pre-school was identified as a dream for the community, noted as follows: "Participants

mentioned the following dreams: … English-speaking crèche" (Field notes, 6/10/16, RJ 1, p, 21). Participants furthermore referred to limited computer literacy as a challenge: "… when a person comes to the internet while he or she does not know how to use a computer" (Photograph 5.6).

In terms of animal-related challenges, participants highlighted limited resources at the dip tanks, more specifically referring to limited availability of dip products and water for dip tanks: "… but we don't have the sufficient medicine and water to mix" (PRA-WD, 10/11/16, p. 8 and Photograph 5.7). In addition, participants emphasised the perception that the local animal clinic was not able to deal with all potential clients, stating that "they are too tight to come, so that's why it's important to have another koöperasie" (Participant SN, TS, p. 17).



Photograph 5.6: Poster depicting computer illiteracy as a challenge



Photograph 5.7: Participant's written document pointing out the challenges experienced in the community

5.3.2 Sub-theme 2.2: Strengths and assets of the community

As part of the PRA-based intervention and discussions, participants identified physical community assets that I also observed, such as local businesses, service providers,

institutions, and resources related to agriculture and animals. In addition, some more intangible assets were identified, including how the people in the community assist others, how they find solutions to everyday problems, as well as the perceptions of participants of their own assets.

Local businesses in Hluvukani that were identified by the participants include businesses that supply building materials, for example timber, as captured in the following extract from the data: "Our resource where they sell timber … we use timber to roof our houses" (Participant DK, TS, p. 5). In addition, businesses supplying bricks, as well as concrete pillars were indicated in the following way: "Pillars – valuable to some … because they use it to decorate their houses" (Participant DK, TS, p. 7, and Photograph 5.8). Other local businesses referred to include taxis, a car mechanic, take-away food shops, taverns, a gymnasium (Participant DK, TS, p. 5), massage parlours, and various community-based shops (Field notes, 5/10/16, RJ 1, p. 14).

Photograph 5.8: Concrete pillars for sale in Hluvukani

Assets in the form of institutions that were identified by the participants and that I also observed, include the human clinic, several nursery schools, four primary schools, two high schools (Field notes, 6/10/16, RJ 1, p. 17 and Photograph 5.9), the library that also provides free internet (Field notes, 10/1/17, RJ 3, p. 3), several churches (Photograph 5.10) and eight soccer fields (Field notes, 6/10/16, RJ 1, p. 17). Participants also showed me a training facility where local residents were studying

programmes in catering, waitering, hospitality and massage therapy (Field notes, 22/2/17, RJ 4, p. 13).

Photograph 5.9: One of the local primary schools in Hluvukani

Photograph 5.10: A church in Hluvukani

In terms of agricultural resources, participants identified land as a valuable resource, stating, "We have enough land where we can plough different things such as vegetables …" (PRA-WD, 10/11/16, p. 8) and "… we got 5 hectares … because we consulted the CDF and so they gave it to us" (Participant EM, TS, pp. 20 & 21). Another natural resource identified by the participants was water. They said: "Water we do have – she's got a borehole" (Participant EM, TS, p. 18) and "… we've got furrow irrigation …" (Participant EM, TS, p. 19). One of the participants reported on his own vegetable garden (Field notes, 10/1/17, RJ 3, p. 4). In addition I observed a nursery school that had planted its own peanuts and mealies (maize) to feed the children (Field notes, 22/217, RJ 4, p. 16), as captured in Photograph 5.11.

Photograph 5.11: Small peanut plantation at a local nursery school

Regarding assets related to animals, participants indicated the dip tank, cattle crush and chicken farm during PRA Session 4. Participants foregrounded these assets by saying: "We do have a dip which we use to dip our cattle in to keep them healthy" (PRA-WD, 10/11/16, p. 8). In support, I noted, "The dip tank and cattle crush" (Field notes, 22/2/17, RJ 4, p. 14 and Photograph 5.12) and in terms of chicken farming observed: "The building … is rented out to G who farms chickens in it" (Field notes, 22/2/17, RJ 4, p. 11 and Photograph 5.13). When compiling a solution-focused proposal during PRA Session 3, participants identified the utilisation of animal by-products as a potential asset. They explained: "… manure we do have because we have got the decomposing faeces of cattle … and of chicken" (Participant EM, TS, p. 18), and proposed that cattle and chicken manure be utilised as fertiliser for a vegetable garden.

Photograph 5.12: The dip tank and cattle crush in Hluvukani

Photograph 5.13: The local indoor chicken production facility

The value of community-based support was first demonstrated during PRA Session 2 when participants "told a story about Hluvukani" by compiling a poster and including the photographs they had taken during the previous session, as depicted in Photograph 5.14. One group's story involved the death of a community member, providing the following two examples of community-based support: "There by Kahlela they donate with cattle and also a hall for the service" (Participant EM, TS, p. 1) and "… school donated with this cement" (Participant EM, TS, p. 2). Closely related, during PRA Session 3, an idea for a possible project demonstrated commitment to learner support as explained in the following way: "… so we have to support them by helping

our children with their homework and influence them to read and how to write" (Participant KM, TS, p. 9).

Photograph 5.14: Story of the death of a community member, with assets and potential assets indicated with green and blue stickers respectively

The strength of finding solutions to problems was demonstrated in a poster activity as part of PRA Session 2, in expressions such as "… we came across with an agreement that our granny she has to go and look for a donation" (Participant EM, TS, p. 1) and "… we decided to get a car as transport … the engine didn't start so we decided to get donkeys" (Participant EM, TS, p. 1). Another example of finding solutions to problems was mentioned during a discussion on littering when the following practical suggestions were mentioned "... dig some small pit where we can put all the unneeded resources – we can burn …" (Participant PM, TS, p. 7). The manner in which cattle enclosures were built by utilising dry wood (Personal observation, 31/8/16, RJ 1, p. 7 and Photograph 5.15) was also a clear indication of an innovative solution to the lack of fencing.

Photograph 5.15: Utilisation of wood to build cattle enclosures

Another example indicating participants' willingness to solve problems, relates to their suggestion that crime could be addressed through supervised sports activities. They said: "… our children … could play soccer there … so that they can avoid crime" (Participant KM, TS, p. 8). Similarly, planting vegetables was mentioned as a way of saving and making money during PRA Session 3 in the following ways: "… buy seeds to plant, after growing we sell it and even at home we eat, we'll save the money" (Participant SN, TS, p. 11) and "we have enough land where we can plough different things such as vegetables … and we can sell to those who don't have at various villages" (PRA-WD, 10/11/16, p. 8). The idea of fixing things when broken was illustrated by examples such as "… this cement is to renovate the house" (Participant EM, TS, p. 2; Photograph 5.16), "… they got water here to make the cement" (Participant EM, TS, p. 2) and a suggestion by participants for "a renovated dip tank" (Participant EM, TS, p. 12).

Photograph 5.16: Home improvements by local residents of Hluvukani

Participants expressed their personal assets in the form of the skills and abilities they perceived themselves to possess. These personal assets included cooking skills, sport skills (especially related to soccer), cultural skills such as dancing and singing, practical skills such as sewing and modelling, business skills including computer skills and a tertiary qualification in labour practice, and communication skills, for example knowing different languages and preaching the Word of God (Field notes, RJ 1 p. 22). During PRA Session 6, when I started with a creativity exercise, I noted that "having them [participants] make something creative showed up some of their skills and abilities" (Personal observation, 29/8/17, RJ 6, p. 13), as participants demonstrated the ability to make useful objects out of pieces of paper as seen in Photograph 5.17.

Photograph 5.17: Participants making boxes and toys out of paper

5.4 THEME 3: CHALLENGES EXPERIENCED DURING IMPLEMENTATION OF THE PRA-INTERVENTION

In this section I report on the challenges experienced during implementation of the intervention, in terms of limitations related to participants' contributions, those related to group dynamics, and finally, challenges related to perceived power differences. The inclusion and exclusion criteria for this theme are presented in Table 5.4.

Table 5.4: Inclusion and exclusion criteria for Theme 3

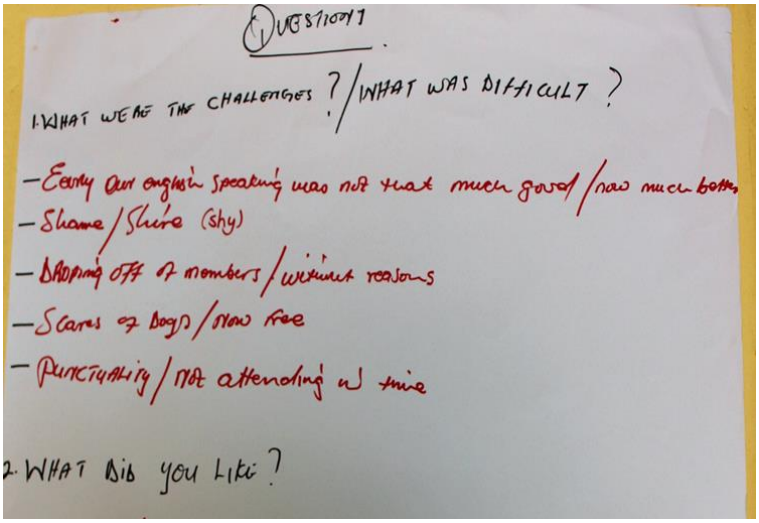
Theme 3: Challenges experienced during implementation of the PRA-intervention			
Sub-theme		**Inclusion criteria**	**Exclusion criteria**
3.1	Limitations in terms of participants' contributions.	Data related to challenges encountered during the PRA-process due to participants' shyness and uncertainty, language barriers, lack of interest in the topic, and their not being used to having a voice.	Data related to challenges encountered during the PRA-process related to group dynamics or perceived power differences.
3.2	Challenges related to group dynamics.	Data related to challenges encountered during the PRA-process due to limited group cohesion, limited communication and joint decision making, and a dominating individual.	Data related to challenges encountered during the PRA-process due to limitations in terms of participants' contributions and those related to perceived power differences.
3.3	Challenges related to perceived power differences.	Data related to challenges encountered during the PRA-process in terms of participants' and outsiders' views on power and who holds power, and not understanding the value of collaboration in PRA-initiatives.	Data related to challenges encountered during the PRA-process due to limitations in terms of participants' contributions and those related to group dynamics.

5.4.1 Sub-theme 3.1: Limitations in terms of participants' contributions

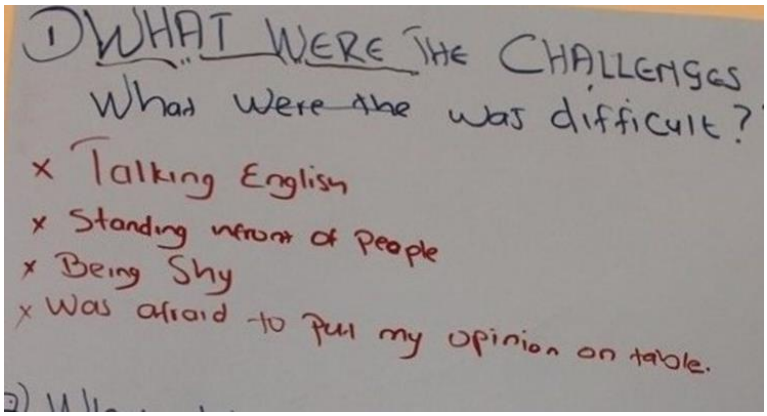
This sub-theme relates to the hesitance of some participants to participate actively in the PRA-process and make their voices heard. In this regard, I discuss shyness and limited self-confidence, language barriers, and the disinclination to focus on the rabies topic. All of these factors seemingly contributed to uncertainty, which in turn impacted on participation.

Tendencies of uncertainty and shyness arose several times during the study. Participants namely reported, "We were very shy" (Participant PM, TS, p. 29) and "we were shy to talk, to eat together; … afraid to put my opinion on the table; standing up in front of people [was challenging]" (Photograph 5.19). Hesitance to speak and make their voice heard in the PRA-context was expressed in combination with a fear of speaking English, during PRA Sessions 4 and 7 (Photographs 5.18 and 5.19). I similarly observed the reluctance to speak in front of others and captured it in the following ways: "The next team (Team Banana) are represented by DK who is initially shy to present in English" (Field notes, 6/10/16, RJ 1, p. 18), "CM presented the first group's poster. She was shy and just read what was on the poster … If I had a question,

she referred it to EM" (Field notes, 10/1/17, RJ 3, p. 2) and "TK is very shy to speak" (Field notes, 8/6/17, RJ 5, p. 17).



Photograph 5.18: Poster listing challenges experienced by participants (PRA Session 4)



Photograph 5.19: Poster depicting challenges experienced by participants (PRA Session 6)

Limited self-confidence seemingly also applied to situations other than the PRA-sessions. During a conversation with the interpreter and two participants, they referred to some of their co-participants' hesitance in sharing the rabies message with other people in the community. They reported as follows: **"**They are afraid to talk alone to the people" (Participant EM, TS, p. 24), "… it seems as if they are afraid" (Participant EM, TS, p. 24), "… because some of them are very shy to make their voice loud" (Participant PM, TS, p. 30) and "… they are very much shy, they don't like have a self-confidence" (Participant PM, TS, p. 25).

In addition to the participants' hesitance to contribute due to shyness and uncertainty, language barriers were evident. This could be observed in misunderstandings relating to the meanings of certain words and phrases, and participants' difficulty in comprehending certain concepts. The meaning of some words used during PRA-sessions was apparently not clear, with the concept *potential resources* being misunderstood, resulting in a dog being characterised as a potential resource when in fact the following explanation seemingly referred to a temporary resource: "[The dog is] a potential resource … because that dog is acting as a security … after the service, the dog will go away so we won't use it … maybe we'll need it another day" (Participant EM, TS, p. 3). Similarly, misunderstanding of concepts was illustrated on the poster presented by the participants during PRA Session 3 where potential assets were presented as being the same as assets. In yet another example, one of the participants misunderstood the meaning of the word *modern* as meaning *old-fashioned*, as I noted in the following way: "I realised today that when EM uses the word "modern" he actually means old – I asked him outright what he means with modern and that is what he said" (Field notes, 10/1/17, RJ 3, p. 6).

As a result, I sometimes found it challenging to explain concepts, for example *message framing* during PRA Session 5. Even though I pointed out how some of the educational material "had a more negative, reactive message … vs. a more positive, proactive approach" I realised that the participants did not comprehend the concept (Field notes, 8/6/17, RJ 5, p. 18). Similarly, during PRA Session 4, I found it difficult to explain the concept of looking at issues from different perspectives (Field notes, 23/2/17, RJ 4, p. 22).

Closely related, one participant in particular experienced difficulty in absorbing the new knowledge presented during PRA-activities. This participant "often seemed to listen intently, but … does not always internalise things. I have learnt that one has to be very explicit with him, as he often just hears or remembers part of the story" (Field notes, 23/2/17, RJ 4, p. 23). The same participant posted a Facebook comment in response to a photograph of dogs in Hluvukani, stating, "These dogs have rabies that's why we hang them to avoid not spreading it from dogs to human beings". This comment reflected incorrect information at a point when I thought all the participants had

mastered the information shared during discussions (refer to the Facebook post in RJ 4, p. 33).

Participants furthermore experienced difficulty to perform some of the PRA-activities. In preparation of PRA Session 5, I, for example, asked them to think of the personal assets they had identified earlier and how they could utilise these to promote rabies prevention. They apparently found this difficult to do, and asked me to provide them with ideas. In one of the activities during PRA Session 3, I made a similar observation, which I captured as follows: "KM said that he was a bit frustrated as he couldn't think of anything" (Field notes, 10/1/17, RJ 3, p. 2). In yet another example of a difficult task having been requested, during PRA Session 2, I reflected,

> *There were 14 different pamphlets/brochures and I had numbered them from 1 to 14. The participants spent a bit of time looking at everything and reading some, but I think it was too much, as they could not come to a conclusion as to which were the most appropriate materials* (Personal reflection, RJ 2, p. 9).

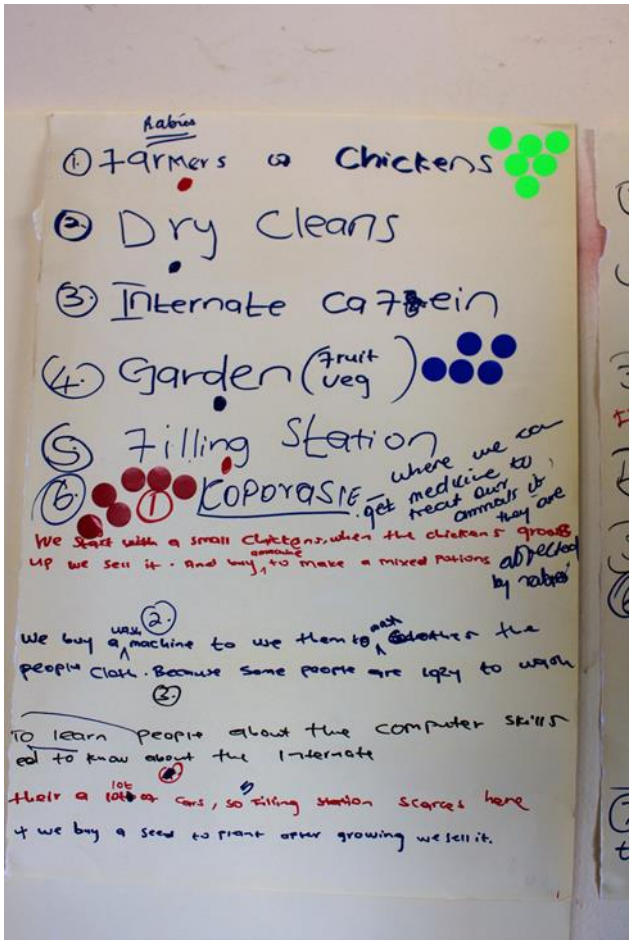
The participants found this hard to do, and in retrospect I realised that it was probably too much information for them to absorb at once. In addition to experiencing some requests as challenging, participants followed my instructions for activities very literally, while I was expecting more creative and lateral thinking. The mapping activity of PRA Session 1, for example, was done very precisely, as captured in my notes indicating that "one group was even using a ruler" (Field notes, 6/10/16, RJ 1, p. 15). A misunderstanding of the instruction occurred during PRA Session 3 when a voting exercise was utilised to rank a number of ideas that had been generated. In this regard, while "I was expecting an individual vote, the participants were voting collectively in their groups" (Field notes, 11/1/17, RJ 3, p. 13).

Regarding the focus on rabies during the PRA-intervention, it appeared as if the participants' limited knowledge of and interest in rabies and related topics contributed to some hesitance to participate. I subsequently found it challenging to obtain a focus on animal health in general and rabies in particular, while adhering to the principles of PRA, more specifically during the first few sessions. I often reflected on this, as exemplified in the following extract: "I'm not sure whether the participants are ready for focusing on animal health when they have so many pressing social issues. They seemed to find it difficult to identify animal challenges and resources" (Personal

reflection, RJ 2, p. 6). To this end, my thoughts reflected a sense of frustration as well as doubt, as captured in the following words: "I felt a bit frustrated because I was unable to get to the point I wanted to reach, and have a feeling I became too much of a teacher and lost the participatory spirit in the process" (Personal reflection, RJ 2, p. 16) and "I know that based on participatory practice principles I should wait and listen, until they are ready" (Personal reflection, RJ 3, p. 10).

Even when I suggested the inclusion of an animal issue in a PRA-exercise aimed at identifying actions that could be undertaken by the group within the community during PRA Session 3, an animal-focused idea was only added as an afterthought among several ideas not at all related to animals. I noted, "In spite of my suggestion to think about something animal- or rabies-related, the participants still presented mainly ideas unrelated to these topics" (Personal reflection, RJ 3, p. 15). Photograph 5.20 shows one of the posters produced during this session, indicating the lack of focus on animal-related matters – with the only idea relating to animals being that of a "koöperasie" (farmers' co-operative), which was added by a participant who arrived late, after the group had already completed their list. The word *rabies* written small at the top of the poster, without any specific reference to a rabies-related project, furthermore indicates an awareness, yet the limited level of importance it implied for the participants at the time (Photograph 5.20). In reflecting on this challenge after the session, I concluded the following:

> *Immediately after the last visit, I thought that it could be said that I've been unsuccessful because this group has not yet developed rabies awareness. But I've learnt that you can't artificially create an interest in a topic that is not important to someone – it first has to come to the foreground and become important in that person's mind and this requires a process over time* (Personal reflection, RJ 4, p. 1).



Photograph 5:20: Poster depicting limited priority of rabies to the participants

When some of the participants did take rabies-focused action after PRA Session 4, I unfortunately had to stop them. Even though some members had decided to initiate a door-to-door campaign, I requested them to wait until our next session for reasons I explained as follows: "The reasons I am asking you to stop for a while are: 1) Because the state vet needs to approve our plan first; 2) We need to work out a plan that will involve the whole team; 3) We need to agree on exactly what information you will be giving out" (Copy of WhatsApp conversation, RJ 4, p. 32). Nevertheless, the aborted exercise did have a positive turn because it exposed a challenge that could then be addressed constructively for future door-to-door campaigns, as captured in my field notes in the following way: "Some of the people [in the community] distrusted them and their motives … they wanted some sort of certificate to show that they knew what they were talking about" (Field notes, 8/6/17, RJ 5, p. 17).

5.4.2 Sub-theme 3.2: Challenges related to group dynamics

In this sub-theme, I report on some challenges related to group dynamics I identified, more specifically in terms of limited group cohesion, limited communication and joint decision-making, and the challenge of a dominating individual. Although the group worked well together, some instances of inter-group conflict occurred that negatively impacted the group cohesion. One such instance occurred during a discussion when the whole group was not present, when one member reported that all the group members had not participated in a group activity during a period between PRA-sessions, I noted this as follows in my field notes: "EM stated that some of the other participants were not serious and not participating properly" (Field notes, 12/1/17, RJ 3, p. 16). Some time later, again during a period between PRA-sessions, communication took place *via* WhatsApp messages, indicating that one part of the group initiated their own activity without inviting the others along. In response to the following message: "Door-to-door campaign is continuing will end on Friday though others are not attending only SN, TK and I" (Participant EM, copy of WhatsApp conversation, RJ 4, p. 32), another group member stated that, "You didn't tell us, I only [saw] a post on Facebook saying you, TK and SN are going door to door campaign" (Participant DK, copy of WhatsApp conversation, RJ 4, p. 32).

Lack of sufficient teamwork was furthermore expressed by a participant indicating regret about not making progress, saying, "The chickens – we planned, but we didn't come to an end because we never met all of us" (Participant EM, TS, p. 22). Closely related, the facts that some participants had stopped attending sessions and that some who did attend were often late seemingly had a negative effect on the group dynamics. Participants captured their experiences in this regard in the following way: "… dropping off member without reasons – the people that just didn't come back" and "… worried about punctuality" (Poster; refer to Photograph 5.18 on p. 155).

One of the participants, the oldest of the group and a male, was notably more interactive and confident than the others. This presented an additional challenge, yet also had some positive outcomes. In terms of challenges associated with this participant, other participants tended to refer questions to him instead of doing their own thinking or taking action themselves. During PRA Session 2, for example, when I had asked the participants to look at a number of rabies educational materials and rank

them, they declined and "delegated EM to take them all home and then decide which are the best" (Field notes, 9/11/16, RJ 2, p. 9). During PRA Session 3, I noted, "EM's group was finished fairly quickly with him giving the most input" (Field notes, 10/1017, RJ 3, p. 2). Participant EM seemingly took responsibility for the whole group and appeared distressed that he had not yet completed written notes (a self-imposed duty) for the group to help them with the door-to-door campaign, saying, "… we planned to have some notes so that we can talk one thing all of us. But I started but I never finished [he is fidgeting, looks uncomfortable]" (TS, p. 20). Later, he regretted not having been able to lead the group to action, noting, "… the problem it was I because I had too many things to do" (TS, p. 22). During PRA Session 4, I reflected on this in the following way: "I need to find a way of keeping EM involved without him doing everything" (Personal reflection, RJ 4, p. 17).

5.4.3 Sub-theme 3.3: Challenges related to perceived power differences

This sub-theme relates to challenges associated with perceived power differences, addresses the participants' and outsiders' views on power and who holds power, and attends to the challenge of some stakeholders not understanding the value of collaboration during PRA-initiatives. The participants revealed views of power relationships in two examples: Firstly, in the way they seemingly perceived white people, and secondly in the way an older, male person was perceived by the younger members of the group.

With regard to participants' views on white people, I observed a few instances where participants were submissive, seemingly due to their perception of power differences between themselves and white people. At the beginning of PRA Session 3, I, for example, decided to phone some participants to confirm their attendance. One participant, who had only attended PRA Session 1 by that time, seemed to put the phone down each time I phoned her. The interpreter then phoned and spoke to her, and later explained to me that "she was afraid of speaking to a mhlungu [white person]. [She had not recognised my voice]. When white people phone, he says, people expect trouble such as debt collecting" (Field notes, 10/1/17, RJ 3, p. 9). Another incident was shared by two of the participants during the feedback session of PRA Session 4, as an illustration of how their communication skills had improved (refer to Theme 4). They related how they had to run a meeting (one as chairperson and one as secretary) in

the presence of white people, saying, "The white people was there … so some white one was stating that I will not run that meeting" (Participant SN, TS, p. 29). A third example transpired when I was introduced to the crèche teacher and learners, as captured in the following field notes: "The kids laughed when I greeted their teacher in Shangaan … they did not seem to be used to a white person speaking in Shangaan" (Field notes, 22/2/17, RJ 4, p. 15).

In terms of external stakeholders, possible power differences were revealed regarding the state veterinarians. More specifically, participants were notably shy when introducing themselves to the visiting local state veterinarian (a middle-aged, white male) during PRA Session 5, as captured in my notes: "I noticed how very softly some of them spoke when introducing themselves. They seemed to feel intimidated, even though VA spoke gently" (Field notes, 8/6/17, RJ 5, p. 23). It was not clear whether they felt intimidated because VA[15] was white, or because of his position as a government official. Another incident could be observed in the interaction between the participants and another visitor, the regional state veterinarian (an older, black male). Reportedly, hostile interaction occurred between the group and the visitor in my absence, which I only became aware of later. I summarised this incident as follows:

> *We went inside and I introduced the group to VB. Their body language was notably non-interactive – they all looked down, avoiding eye contact with VB and most had their arms folded in front of them. Only when I had handed out the food and drinks, and asked them to tell VB about what they had been busy with, did DK look at him and tell him about the play and the Rabies Educator Certificate … After they left, I asked the group why they were so uptight when I introduced them to Dr VB. They told me that he had come into the venue when PM and I were out and in a hostile way had asked who they were, what they were doing and who chose them. They said they did not answer him and he left again* (Field notes, 31/8/17, RJ 6, p. 6).

In terms of outsider views of power relationships, the state veterinarians appeared to appropriate the function of rabies prevention to themselves, to the extent that they seemingly attempted to exert control over other role players' involvement. I met with the local state veterinarian prior to commencing with recruitment of the participants,

[15] VA refers to the local state veterinarian (Veterinarian A) and VB to the regional veterinarian (Veterinarian B).

and again during PRA Session 5, and corresponded with him between Sessions 4 and 5 to provide an update of how the intervention was progressing. The perception that rabies control is the "sole mandate" of the state, was evident during these interactions and communicated to me *via* e-mail where the state veterinarian noted, "… it needs though, to be considered that this is a state-controlled animal disease, whose control is the mandatory duty of the state vet services …" (E-mail from VA, RJ 4, p. 29).

Closely aligned, the local state veterinarian seemingly had limited insight into the collaborative nature of PRA at the time of the intervention, and as a result, expressed concern with regard to my participant group's activities being aligned with those of state veterinary services. He voiced his concern as follows: "Therefore, any respectively planned activities by the group (as part of its applied / practical research component?), should be aligned with already existing and planned programmes and activities (by the local sv [state veterinarian] services or DoH), to rather strengthen such, contribute to and make them more effective, than to duplicate or dilute efforts, or even cause other counterproductive outcomes …" (E-mail from VA, RJ 4, p. 30) and "… planned awareness activities by the group should be planned (and implemented) jointly with local AHTs / the local sv [state veterinarian's] office" (E-mail from VA, RJ 4, p. 31). In the same correspondence the concern that the research intervention could be perceived as a response to failure by the state was expressed by the state veterinarian, and later articulated by the regional state veterinarian who, in a verbal exchange with me at a congress, noted that there had been "… researchers from the university who had depicted state vets in a bad light" (Personal reflection, RJ 6, p. 8). He was, however, referring to unrelated studies and publications of which I had no knowledge.

Despite his initial concerns and apparent limited awareness of the value of PRA-collaborations, the local state veterinarian was impressed and more positive after meeting the participants during PRA Session 5 and listening to what they had achieved. Several possibilities for how the participants could become involved in rabies control were identified and the veterinarian seemingly "liked the idea of community awareness through drama, which by this time had been identified as primary project by the participants, partly because he recognised it as something his own staff would not be doing" (Field notes, 8/6/17, RJ 5, p, 25). I captured his opinion that "the biggest

challenge for him in preventing rabies by vaccinating dogs, is the difficulty handling many of the dogs, as the dogs were not used to being handled. If they [the participants] could find ways of helping him with that it would be very useful" (Field notes, 8/6/17, RJ 5, p. 23).

5.5 THEME 4: POSITIVE OUTCOMES OF THE PRA-INTERVENTION

In this section, I report on the positive outcomes of the PRA-intervention, including sub-themes related to increased knowledge and awareness of animals, animal health care and rabies; increased participation and willingness to take action and promote positive change in the community as well as the role of individuals in taking the lead and motivating other group members. Table 5.5 lists the inclusion and exclusion criteria for Theme 4.

Table 5.5: Inclusion and exclusion criteria for Theme 4

Theme 4: Positive outcomes of the PRA-intervention			
Sub-theme		**Inclusion criteria**	**Exclusion criteria**
4.1	Increased awareness and knowledge of animals, animal health care and rabies.	Data related to increased awareness and knowledge of animals, animal health care and rabies among participants.	Data related to increased participation, willingness to take action and promote positive change in the community, and the role of leading individuals in the PRA-process.
4.2	Increased participation and willingness to take action and promote positive change in the community.	Data related to increased participation, and the willingness to take action and promote positive change in the community by the participants.	Data related to increased awareness and knowledge of animals, animal health care and rabies, and the role of individuals in the PRA-process.
4.3	Role of individuals in taking the lead and motivating other group members.	Data related to the role of individuals taking the lead and motivating other group members in the PRA-intervention.	Data related to increased awareness and knowledge of animals, animal health care and rabies, and increased participation and willingness to take action by the participants.

5.5.1 Sub-theme 4.1: Increased awareness and knowledge of animals, animal health care and rabies

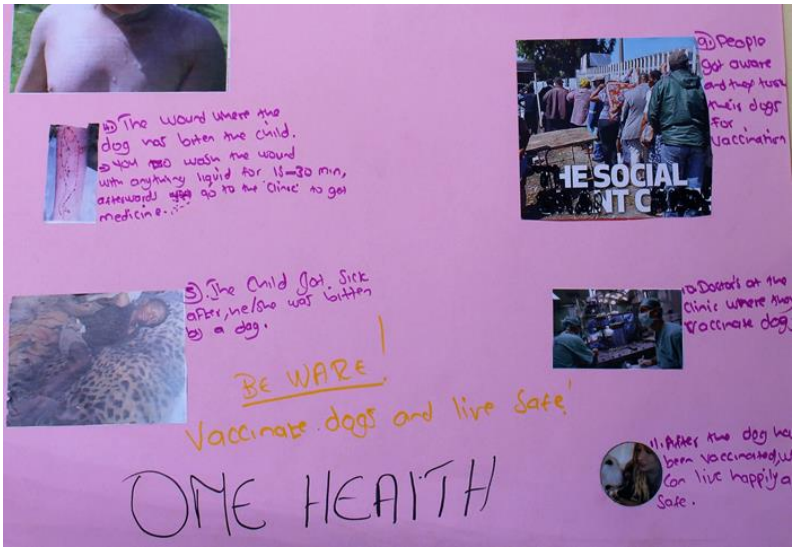
I discuss the positive outcomes of the PRA-intervention in terms of increased awareness and knowledge of animal- and rabies-related topics among the participants in this section. The initial perceptions of participants regarding animals, animal health care and rabies are set out in Theme 1, yet as the intervention progressed, some changed attitudes to animals became evident. To this end, during PRA Session 3, I reflected in my research journal as follows:

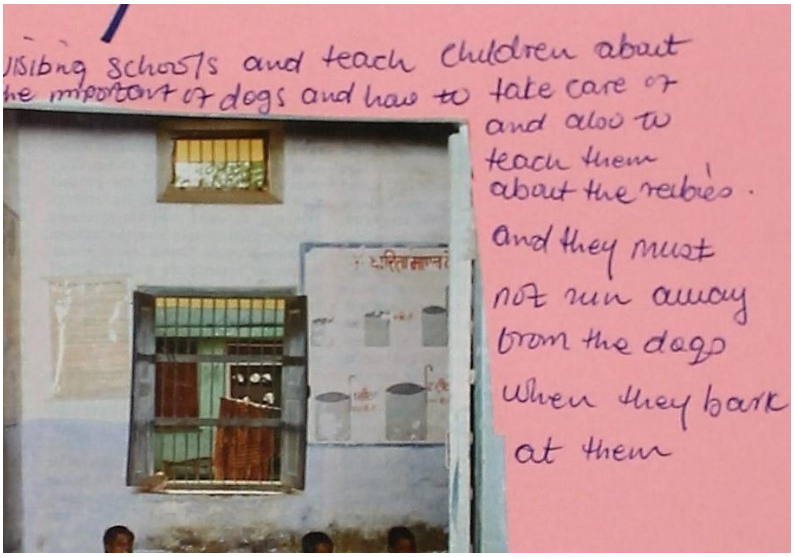
> *I noticed that the one clinic dog[16], Lady, today was allowed to be in the room where we were having lunch. The other day the dogs were unceremoniously chased outside. KM even fed her his leftovers and showed her some affection, stroking her and alerting me to a tick on her back … KM was very adamant the other day about a dog owner having the right to decide when to hang a dog or not and seemed to find it funny that the dog may suffer during such an event. Today he looks at this dog with empathy* (Field notes, 12/1/17, RJ 3, p. 19).

During PRA Session 5, the posters created by participants provided evidence of a change in perceptions among the participants, particularly of dogs. The three posters, two of which are shown in Photographs 5.21 and 5.22, contained the following phrases:

- *Vaccinate dogs and live safe!*
- *After the dog has been vaccinated, we can live happily and safe.*
- *Provide dogs with good and comfort shelter or kennel and feed them with fresh food.*
- *Visiting schools and teach children about the importance of dogs and also to teach them about the rabies and they must not run away from the dogs when they bark at them.*
- *I love my dog.*
- *Responsible pet ownership.*
- *Five Freedoms*

[16] The animal clinic has two resident dogs, Lady and Danger, who are looked after by the clinic staff.





Photographs 5.21 and 5.22: Sections of the "rabies story" told by the small groups

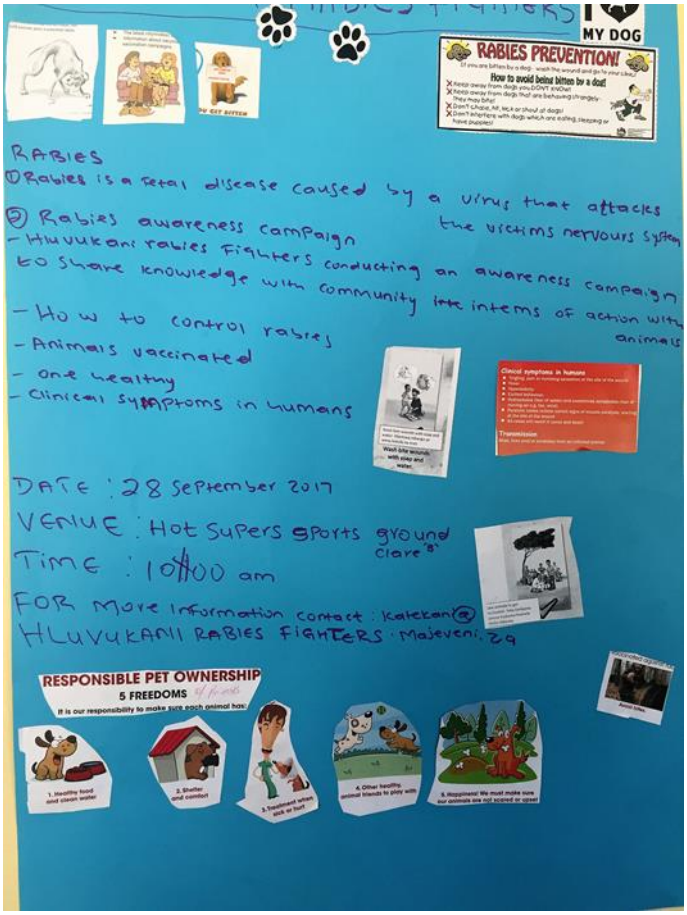
In reporting on the information for the proposed pamphlet, participant KM explained the phrase *one healthy* as follows: "Dogs take care of people, people take care of dogs. People must treat them well so that dogs will treat people well" (Field notes, RJ 5, p 21). In further support, a discussion during PRA Session 5 provided additional evidence of changed perceptions, including the following statements (Field notes, RJ 5, p. 3):

- *A dog has the right to live and be protected.*
- *Humans are also animals, we must take care of each other (people and animals) and interact with each other.*
- *Animals are part of the environment and we must care for the environment.*

In the final feedback session of PRA Session 7, two participants directly reported that their family's attitude to dogs had changed as a result of the intervention. Participant PM said that his family had acquired a puppy, stating, "My family fell in love with a dog" (Field notes, 28/8/17, RJ 6, p. 16) while participant PN related how their dog, Spunky, was bathed and allowed to sleep inside the house, saying, "We love dogs" (Field notes, 28/8/17, RJ 6, p. 17).

In the course of the intervention, the participants' levels of rabies-related knowledge improved. After the first introduction of the topic in PRA Session 2, participants reported that they had learned "about rabies and how to prevent it, must wash the wound for 10 - 15 minutes" and were aware of "the signs of rabies in people [such as] behavioural changes" (Field notes, 7/11/16, RJ 2, pp. 14-15). However, some of the ideas presented for addressing rabies control as reported in Theme 1, did not represent accurate facts. This apparent discrepancy between rabies and the action required to address it, was evident in the following statement made by participant EM during PRA Session 3: "… because koöperasie is a place where we're gonna get a medicine to take to take care of animals which has been affected as our main aim of us to be here is the rabies" (TS, p. 12). This contribution indicated how the participant acknowledged the need to focus on rabies, yet at the same time inaccurately believed that the disease can be treated with medicine.

During PRA Session 4, the rabies message − action that needed to be taken − was more clearly articulated by the participants, as noted in my field notes: "It became evident to everyone that there were two messages: How to deal with a dog bite [and] to vaccinate dogs" (Field notes, 23/2/17, RJ 4, p. 24). Next, during PRA Session 5, the participants produced posters "telling the rabies story" of which Photographs 5.21 and 5.22 (refer back to p. 166) provide examples. These posters, as well as a poster they made on what they thought was important to be included in an educational pamphlet or brochure for distribution in Hluvukani (Photograph 5.23), provide evidence of the knowledge the participants gained as the intervention progressed. All these posters, which the participants produced in the latter part of the intervention, contained accurate information on rabies and its prevention.



Photograph 5.23: Concepts to consider when designing a pamphlet

In this regard, I noted:

> *We then considered the three main questions that I had introduced them to right in the beginning: Why is animal health important to people? What is rabies and how does it affect people and animals? What can we do to protect people and animals from rabies? Everyone agreed that they had come a long way in answering these questions and [they] offered some good answers* (Field notes, 6/6/17, RJ 5, p. 2).

In addition to gaining knowledge, participants seemed aware of the insight they had gained. They referred to their increased knowledge, as evident in the following data excerpts, which represent the direct contributions of participants: "Made me realise that I know more and am gaining more knowledge" (Field notes, 6/6/17, RJ 5, p. 7); "So now I have the knowledge that when the dog bite[s] me, I have to go and get some water and soap and wash it. After that I can go to the clinic" (Participant SN, TS, p. 28) and "… gained knowledge and experience" (expressed as personal benefit) (Field notes, 6/6/17, RJ 5, p. 7). In support, in the course of PRA Session 6, one of the

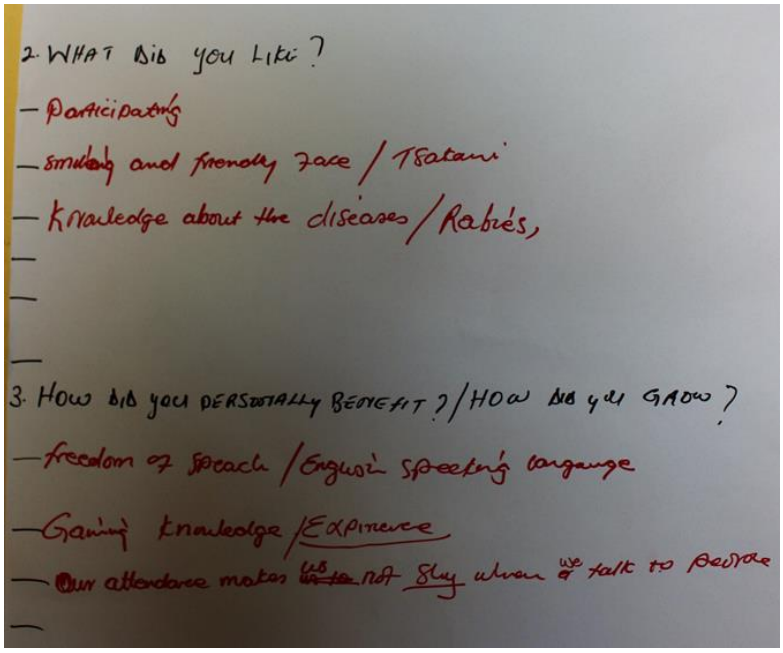
participants who had not been able to attend all the preceding meetings, stated, "It is important that we should tell people that dogs are dangerous and kids can get killed by a dog's bite and teach kids not to play with dogs". This was immediately corrected by another participant who said, "Kids should not play with unvaccinated dogs and people must vaccinate their dogs" (Field notes, 7/8/17, RJ 6, p. 2).

Further evidence of participants' increased knowledge and awareness was provided when the group performed their play for the first group of learners. As part of the session, they conducted a question-and-answer opportunity with the learners. One of the questions was whether or not it was true that when dogs eat fish bones they would die. The participants replied that it is not the truth, upon which I reflected as follows: "… this to me is significant – this is a widely believed story [which they themselves had related to me earlier on] … it reflects real transformation in their thinking" (Field notes, 30/8/17, RJ 6, p. 18). In addition, the participants were actively involved in the Global Alliance for Rabies Control's online "Rabies educator certificate" course. One participant completed the assessment, even though he was not successful as he obtained 83% instead of 85%. I reported in my field notes that "I was surprised that KM did so well in the Rabies Educator course and was proud of him" (Field notes, 31/8/17, RJ 6, p. 22).

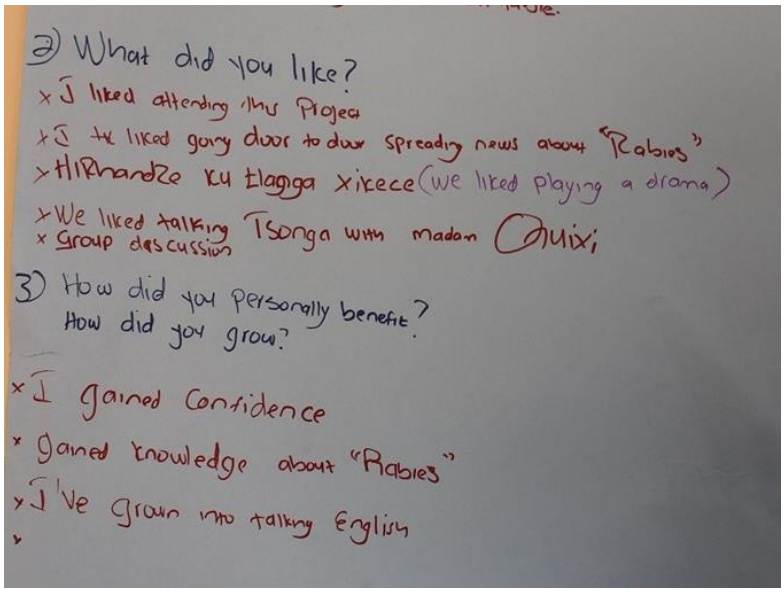
The participants' improved knowledge of rabies was furthermore evident in the way they started thinking about educational material during later stages of the intervention. At first, when shown examples of rabies educational material during PRA Session 2, participants expressed a preference for a pamphlet with a loss-framed message such as: "Beware! Rabies is a killer disease!" (Field notes, 10/11/16, RJ 2, p. 12). They specified requirements for a rabies educational leaflet, which would be appropriate for Hluvukani, indicating that the message "should be in Shangaan and English, should be colourful and easy to read (font not too small)" (Field notes, 7/11/16, RJ 2, p. 13). However, when asked again to highlight what should be included in an educational pamphlet during PRA Session 5, several gain-framed messages emerged, for example, "Animals must be vaccinated; I love my dog; how to avoid being bitten by a dog" (Field notes, RJ 5, pp. 19-20). As such, the One Health message was foregrounded, as can be seen in Photograph 5.23 (refer back to p. 168).

5.5.2 Sub-theme 4.2: Increased participation and willingness to take action and promote positive change in the community

This sub-theme addresses positive change as a result of the PRA-intervention in terms of increased participation, taking action and promoting change in the community. Participant feedback on the process was elicited twice, first during PRA Session 4 and again during PRA Session 7 as depicted in Photographs 5.24 and 5.25.



Photograph 5.24: Poster indicating positive aspects of the intervention as perceived by participants (PRA Session 4)



Photograph 5.25: Poster indicating positive aspects of the intervention as perceived by participants (PRA Session 7)

In both instances, the main benefit described by the participants related to their having gained more confidence in speaking, and particularly speaking in English. Evidence of this is found in the following contributions:

- *Freedom of speech – we have been saying like before we came here our English it was very much poor and when we stood up to try to illustrate or tell our colleagues about what we would practice we were very shy, but now it's much more easier for us and our English it started to improve much more better than earlier* (Participant PM, TS, p. 29).
- *Because that's where I gained something, like improving my English. So that's why I like [participating]* (Participant SN, TS, p. 27).
- *Didn't know how to answer the questions … but now I'm fine* (Participant PN, TS, p. 27).
- *Our attendance makes us not shy when we talk to people* (Photograph 5.24).
- *We won't be shy to stand in front of people to address them* (Field notes, 6/6/17, RJ 5, p. 7).
- *I gained confidence* (Photograph 5.25).
- *I've grown into talking English* (Photograph 5.25).

Personal empowerment was emphasised by statements such as, "I feel more confidence like a doctor" (Participant PM, TS, p. 28) and "… because knowledge is a power, no one can take it" (Participant PM, TS, p. 28). During PRA Session 6 participants DK and PN reported on their sharing knowledge about rabies with other people. They commented that "they felt good about having done this" (Field notes, 7/8/17, RJ 6, p. 1), as captured in my field notes. This experience of feeling empowerment is supported by the following excerpt (TS, p. 29):

> *PM: Ja, she was chairing the meeting. With the full confidence.*
> *SN: So some white one was stating that that I will not run that meeting …*
> *EM: And as the secretary I was writing the minutes.*
> *QS: You were writing minutes?*
> *EM: Yes - in English.*

As such participants' confidence to share their opinions and contribute in English thus increased as the intervention progressed. Participant SN reported that her fear of dogs also subsided, once again resulting in her feeling empowered. She said (TS, p. 26):

> *QS: And you're not scared of the dogs?*
> *SN: Yes, I'm not.*
> *QS: Very nice!*
> *SN: But the first time I came here I was scared.*

Participants indicated that they liked participating interactively (refer back to Photograph 5.24, p. 168), and that they enjoyed the group discussions (Photograph 5.23). It was, for example, mentioned during PRA Session 5 that "collaborating like this is better than working alone" (Field notes, 6/6/17, RJ 5, p. 7). In this regard, participant PM stated during PRA Session 4 that "… while you participate, it means you'll gain more, you'll learn more, learn some things you didn't know, and then you'll know by participating" (TS, p. 27). In further support, during PRA Session 6, the participants independently started collaborating to plan the educational play, with minimal involvement from me.

Participants were willing to take action on many other occasions too, such as the door-to-door campaigns they undertook, the formation of the Hluvukani Rabies Fighters (HRF), their active interest in engaging with the learners during the school visit with the veterinary students during PRA Session 5, their willingness and enthusiasm in getting involved with the Rabies Educator Certificate, the creation of a Facebook page for the HRF and their participation in the educational play. More specifically, the participants undertook two spontaneous door-to-door information campaigns − one after PRA Session 3 and another one following PRA Session 5. When reporting on their experiences, the first group stated that the community members were "… saying thanks, we didn't know about this" (Participant SN, TS, p. 31). The second group reported that they had done door-to-door visits to convince people to have their dogs vaccinated, and subsequently confirmed that the dogs had indeed been vaccinated. They also established that the nurses at a human clinic in a small neighbouring village were not knowledgeable about rabies and reportedly requested help to have their dogs vaccinated, as captured in my field notes: "DK and PN told me that they were at a human clinic in another village and that the sisters did not know much about rabies,

and wanted the HRF to arrange for their dogs to be vaccinated" (Field notes, 7/8/17, RJ 6, p. 1). Participant PM shared the following experience during feedback on the intervention in PRA Session 4:

> *Even though the dog hasn't bited me but maybe one of my colleagues or maybe my neighbour, so I will go and assist and tell them how they will do this because I am having an experience and a knowledge of it so then I will advise them to take whoever has been bitten by the dog then take them to the hospital. So then they will be malaria free and rabies free* (TS, p. 28).

Participant EM echoed these sentiments during the same meeting by committing to "going around the village, visiting others, telling them about the danger" (TS, p. 30). When asked during the feedback session of PRA Session 7 what effect the participants thought they had had on other people in Hluvukani due to their rabies knowledge, they replied as follows:

> *We helped some people in the community – they vaccinated their dogs*. *Shared information with my family*. *We've told them about rabies now they are aware. Some wish they could be like me (part of this project)*. *Worked a lot, went out to other people, spoke at meetings, telling people to vaccinate and to notice what dogs do, not throw stones or run away from a dog, when a dog bites you roll up in a ball, get dogs and vaccinate them, they were happy, told them about World Rabies Day* (Field notes, 28/8/17, RJ 6, pp. 16-17).

5.5.3 Sub-theme 4:3: Role of individuals in taking the lead and motivating other group members

In this subtheme, the role of individual participants in leading and motivating other group members is discussed, specifically relating to two individuals, namely a dominant participant and the interpreter. One of the participants was very interactive, confident and spoke better English than the other members of the group. He was respected by the others and often took the lead in activities when the others were slow to participate. More specifically, participant EM seemed very dedicated, pledging his commitment to the project, as captured in the following words: "EM came afterwards and told me that he would go all the way with me through this project" (Personal reflection, RJ 2, p. 6).

This participant often took the initiative, for example, during PRA Session 4 when we did the transect drive, by writing down the proposed route in my notebook and getting everyone else to sign to confirm their attendance. During PRA Session 3, he also took the lead in planning the chicken farm project. I noted this as follows: "While PM and I

were away to fetch lunch, the participants had spontaneously started planning for the chicken farm under EM's leadership" (Field notes, 12/1/17, RJ 3, p. 19). He motivated and supported other participants, as captured in the following notes: "The next team (Team Banana) are represented by DK who is initially shy to present in English, but is encouraged by EM who says … that it is a learning experience so she shouldn't be shy" (Field notes, 6/10/16, RJ 1, p. 18) and "CM presented the first group's poster. She was shy and just read what was on the poster. She had been encouraged by EM to do the speaking" (Field notes, 10/1/17, RJ 3, p. 2). In referring to participants who seemingly did not want to do the talking during door-to-door visits, EM stated, "We go together – it seems as if they are afraid" (Participant EM, TS, p. 24).

EM took the initiative to produce unsolicited written "assignments" (as he referred to them). I would sometimes ask the participants to think about a particular topic so that we could discuss it the next day, and then EM would present me with a document written of his own volition. These documents are included in Appendix U and provide valuable data on his insight and development during the intervention. In addition, participant EM apparently saw himself as the leader of the group and took this responsibility seriously. During PRA Session 2 he explicitly mentioned in connection with the group members who were shy to talk to community members that "… I will go to lead the group" (TS, p. 24). As further evidence of his commitment to the intervention, he phoned me after PRA Session 2 to discuss his plans for a rabies campaign. I noted this in the following manner: "EM phoned me in early December with a report of how his planning for the campaign is going" (Field notes, 10/11/16, RJ 2, p. 17).

The interpreter, PM, also played a leading role in that he often motivated the participants, by, for example, encouraging others to attend all the sessions so that Hluvukani can build up a good reputation. In this regard he stated: "To get the self-confidence or to participate from day 1 up to the last day, it will give us some more power … they will be thinking of Hluvukani first" (TS, p. 32), and "In future we need to attend thoroughly so then it motivate those bringing some projects around to us, so it will give them much more power to consider Hluvukani" (TS, p. 33). During PRA Session 3, he made an appeal to the participants to speak English during meetings, as captured in the following field notes I compiled:

> *PM asked if he may say something to the participants, and appealed to them in Shangaan to try and make an effort to speak English to me as that would improve their English and give them better opportunities, for example when doing job interviews. He doesn't want to have to interpret everything. They do speak good English, they are just afraid to practise it* (Field notes, 12/1/17, RJ 3, p. 16).

At the end of that meeting, participant SN said, "Today we did the right thing by speaking English" (Field notes, 12/1/17, RJ 3, p. 19). PM's role was thus not exclusively that of interpreter – he was also a participant due to his preference for getting involved in the activities.

5.6 CONCLUSION

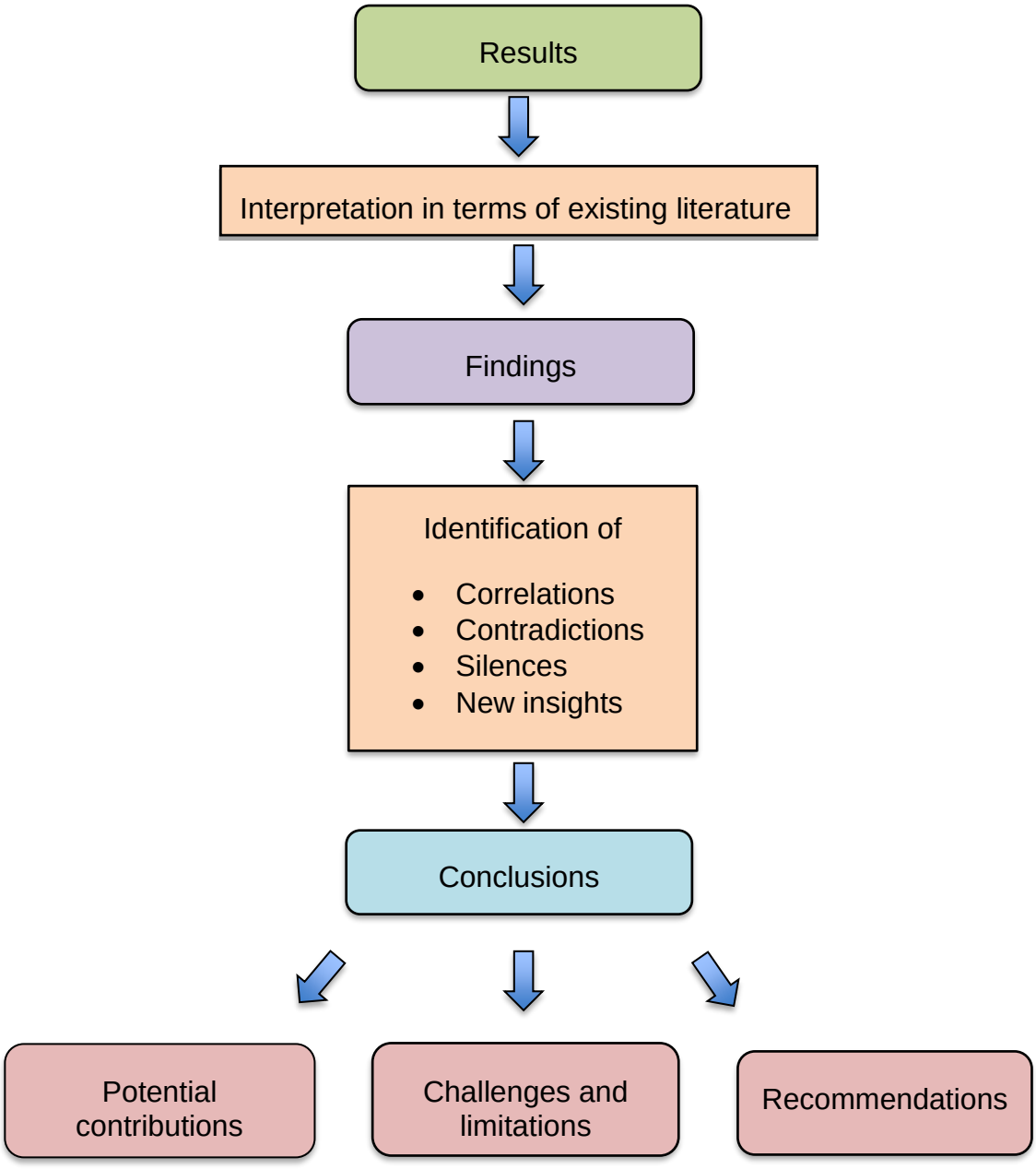
In this chapter, I presented the themes and sub-themes I identified during thematic inductive data analysis. I enriched the discourse by including examples of the data that were generated.

In Chapter 6, I compare the results I obtained to the existing body of knowledge, present the findings of the study and then draw conclusions in terms of the research questions I stated in Chapter 1. I reflect on challenges and potential limitations of the study, highlight the contributions and make recommendations for training, practice and further research.

CHAPTER 6

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

OVERVIEW OF THE CHAPTER



6.1 INTRODUCTION

In the previous chapter, I presented the results of the study after identifying four themes and their related sub-themes during thematic data analysis. This final chapter of the dissertation includes an overview of the previous chapters, and my discussion of the findings in terms of the utilisation of PRA to facilitate rabies control in a rural community. For this purpose, I situate what I found within existing literature, and highlight contradictions and correlations, identify silences in the data and present new insights stemming from the study. Based on the findings I obtained I then draw conclusions in terms of the research questions, reflect on possible limitations, contemplate the contributions of my study and conclude with recommendations for future training, practice and research.

6.2 OVERVIEW OF PRECEDING CHAPTERS

In the first chapter of the dissertation I introduced my focus and provided the background context on the study I conducted. I stated the problem, and formulated primary and secondary research questions. I also provided a broad outline of the selected theoretical, paradigmatic and methodological choices that guided me.

In Chapter 2, I focused on the literature review I completed. I discussed existing literature on the epidemiology of rabies, formulating and communicating the rabies message, and addressing rabies prevention through community-based intervention. In my discussion, I also addressed aspects of rabies control, the One Health approach in rabies prevention, message framing, veterinary community engagement in South Africa, and following a strengths-based approach when engaging in community development.

In Chapter 3, I discussed my theoretical, paradigmatic and methodological choices in more detail. To this end, I explained empowerment theory, participatory reflection and action (PRA) and the qualitative approach I followed. I related these choices to my study, justifying them in terms of the research questions and purpose that directed my study.

Following on the discussion included in Chapter 3, I explained the research design and process of the study in detail in Chapter 4. I discussed my selection of the case and

participants, against the background of the case study design I utilised. Next, I provided detail on how data were generated, documented and analysed. I then explained the research process in terms of the introductory, focusing and ownership phases. Furthermore, I reflected on my role as researcher, and concluded with an explanation of the ethical considerations I attended to, and the quality criteria I attempted to achieve.

In Chapter 5, I presented the results of the study, based on the thematic inductive data analysis that I completed and explained in the preceding chapter. I presented the results in terms of the four themes identified. I illuminated my discussions by including references and excerpts from the raw data.

6.3 FINDINGS OF THE STUDY

In this section, I present the findings I obtained, based on my interpretations of the results presented in Chapter 5, against the background of existing literature. I focus on correlations, contradictions, silences and new insights. In Table 6.1, I provide a summary of the main findings of this study, as background to the discussions that follow.

Table 6.1: Summary of main findings of the study

Finding 1	Community's limited knowledge of human and animal diseases and veterinary service provision at the start of the study: • Participants' limited knowledge of diseases, particularly rabies. • Participants' limited knowledge of veterinary services.
Finding 2	Community's initial views on the functional roles of domestic animals: • Community's views on the roles of production animal species. • Community's views on the role of dogs in society.
Finding 3	Barriers to foregrounding the rabies topic during the PRA-intervention: • Participants' hesitance to freely participate in PRA-activities. • Effect of cultural beliefs and superstitions.
Finding 4	Effect of stakeholders' perceptions on collaboration.
Finding 5	Transformative effects of PRA: • Empowerment of individuals and the community. • Development of empathy with dogs. • Mutual transformation of participants and researcher.

6.3.1 Community's limited knowledge of human and animal diseases and veterinary service provision at the start of the study

In this section, I discuss the findings related to the limited knowledge of participants at the onset of the PRA-intervention with regards to diseases in general and rabies in particular, as well as their limited knowledge regarding veterinary services in the community.

6.3.1.1 Community's limited knowledge of diseases, in particular rabies

Berrian et al. (2016) found that the respondents in their study, which was conducted in the same general area as the current study, had misunderstandings of animal and human diseases in spite of the respondents being aware of several diseases. In line with the findings of Berrian et al. (2016), I found that the participants in my study had a basic understanding of human health relating to hygiene and healthy nutrition at the start of the study, yet detailed knowledge of diseases was not evident. While participants were aware of certain causes, signs and treatments for diseases, they would confuse facts related to different diseases, for example, citing signs or treatments pertaining to HIV/AIDS or tuberculosis as being applicable to rabies. I concur with Berrian et al. (2016) that such limited knowledge of health risks will prevent participants from driving behaviour change in their communities, without an intervention that can serve as catalyst and guide for change.

With regard to knowledge about rabies, household surveys in rural parts of Ethiopia and Tanzania (Jemburu et al., 2013; Sambo et al., 2014) indicate limited knowledge of rabies among people in rural communities. Thys et al. (2013) whose study was conducted in the same general area as the current study, however found that accurate knowledge of rabies exists in the community to a small extent, yet that many misconceptions also prevail. For example, these authors found an understanding that vaccination of dogs could prevent rabies but also identified a belief in the community that vaccination can kill dogs to exist. In a similar way, recognition that a dog bite can transmit rabies existed at the time of their study, but also a contention that rabies could be transmitted to people by sharing drinking water with dogs. Other misconceptions reported in Thys et al.'s (2013) study include the belief that rabies can be prevented if dogs are not allowed to eat elsewhere than at home, that the rabies vaccination can cure dogs after they have bitten somebody, that vaccination is a poison that game

lodges use to kill hunting dogs, that vaccination makes dogs weak, and that if dogs are trained not to bite, they do not need to be vaccinated against rabies.

The findings of my study support Thys et al.'s (2013) findings in terms of the participants' knowledge of rabies at the beginning of my study. While they displayed a vague awareness of rabies, several misconceptions about the disease were evident. More specifically, participants had an understanding that rabies can cause aberrant behaviour in people but also named weight loss as a possible symptom, which is not the case, and may have been confused with human diseases such as tuberculosis and HIV/AIDS. Similarly, participants were able to mention some of the signs in dogs correctly (for example increased vocalisation), yet others were incorrect (for example that rabies will cause hair loss).

Misconceptions existed particularly in terms of the transmission and treatment of rabies. Participants for example expressed the belief that rabies can be transmitted by eating an affected animal's meat, from mother to child, or by eating expired food items. They furthermore believed that a rabies patient should complete the whole course of oral medication, which may indicate confusion with tuberculosis, where it is of the utmost importance to complete the course of oral treatment. The participants were furthermore not aware that rabies is virtually always fatal and had no apparent knowledge of how rabies could be prevented at the onset of my study. Finally, they indicated that people in the community believed that vaccinating dogs could be harmful to their dogs and could render hunting dogs weak and slow. These findings concur with Thys et al.'s (2013) study, yet also build on it and add some additional insights in terms of how rabies is perceived in the specific rural South African community.

6.3.1.2 Community's limited knowledge of veterinary services in the community

With regard to awareness of veterinary service provision, Berrian et al. (2016) found that respondents in their study were satisfied with the (state) veterinary services they had access to. The participants in my study, however indicated the opposite, expressing a need for more accessible veterinary services. The dissatisfaction reported by the participants in the current study may reflect limited contact and experiences of the local veterinary clinic and state veterinary team. It should also be noted that the study of Berrian et al. (2016) involved a quantitative survey of 262 respondents that would be more representative of the larger community than the small

group of participants in the current study. My study, however, concurs with Berrian et al. (2016) with regards to the expressed need for better management of the government dip tank for cattle. The participants in the current study identified inadequate dip products for the dip tanks as a challenge, as well as insufficient water supply. This reference to a lack of water, having been made during a time of severe drought, is perhaps less relevant as the drought has since ended.

The participants in the current study were furthermore not fully aware of the extent of veterinary services being provided by the animal health team when the cattle came in for dipping. This contradicts the work of Hesterberg et al. (2007) who found that the majority of livestock owners interviewed in their study knew what the function of provincial veterinary services was. Their study, however, focused on cattle farmers who brought their cattle to the dip tank on a regular basis, whereas the participants in my study were not cattle farmers and thus possibly not exposed to the functions of provincial veterinary services to the same extent as the farmers in the other study. The findings I obtained do, however, concur with the finding of Beinart and Brown (2013) that, in spite of years of dipping, veterinary staff had seemingly not successfully transmitted a great deal of scientific knowledge about animal diseases and animal health care. The latter study also involved livestock owners specifically, but not only those who utilised the dipping service in the community. Based on these similar, yet also seemingly contradictory findings between the current study and what is already known, it is clear that perceptions of veterinary services (private and public) by the South African public is an area requiring further study, as this may assist in the planning of veterinary community engagement initiatives.

6.3.2 Community's views on the functional roles of domestic animals

In this section, I discuss the findings I obtained pertaining to the role of the various animal species in Hluvukani, with regards to production animal species in general and dogs in particular, as perceived by the participants.

6.3.2.1 Community's views on the roles of production animal species

People in resource-poor rural communities in South Africa typically own a variety of domestic animal species, all of which have well-defined roles. To this end, Berrian et al. (2016) found that 72% of the households surveyed in the Mnisi study area for their

study, reported owning at least one animal. Of these, 68% owned livestock species which included chickens (76%), cattle (35%), goats (22%) and pigs (7%). Forty two percent of respondents owned dogs and 12% owned cats. This is in accordance with what the participants in the current study reported, confirming the abundance of chickens, followed in numbers by cattle, dogs and goats as well as some pigs, cats and donkeys, but no horses.

Regarding the roles of the various species, Beinart and Brown (2013) identified cattle as being considered an investment, and to a lesser extent used in traditional ceremonies or as a source of meat, while goats, in particular white goats, were used for food as well as ceremonial purposes. Similarly, according to the participants in the current study, cattle are considered as a symbol of wealth and are not widely slaughtered for meat. Chickens, goats and pigs are more widely used as a food source. In addition, goats, chickens and cattle are often used as a spiritual medium to communicate with the ancestors, especially during events such as funerals. These findings all concur with those of Beinart and Brown (2013).

6.3.2.2 Community's views on the role of dogs in society

The main role of dogs in rural and developing areas in South Africa appears to be for security and, to a lesser extent, as hunting animals as indicated by Hohn et al. (1992); McCrindle et al. (1999); Minnaar and Krecek (2001); as well as Thys et al. (2013). Thys et al. (2013) identified specific ways in which dogs were perceived to provide security in the Mnisi area when conducting their study, including that dogs protect people and homes from criminals, protect men while hunting and protect livestock from thieves and wild animals. This concurs with what I found in the current study, namely that dogs are primarily considered useful because of their ability to guard property. I more specifically found that, while livestock are viewed as assets, dogs are viewed as assets only if they are useful, for example by guarding property and people. They are also viewed as temporary assets that can be used for specific purposes when needed, but not necessarily on an ongoing basis.

McCrindle et al. (1999), however, identified other reasons for keeping dogs including companionship and fending off feral cats. While feral cats were not identified as a challenge in Hluvukani, by the participants in the current study, my findings indicate that dogs are not kept for the mere purpose of companionship in this village, in

contradiction to the findings of McCrindle et al. (1999) but concurring with Hohn et al. (1992) whose study population was also in a rural area. The additional perceived benefit of keeping dogs as companions in the study of McCrindle et al. (1999) may be linked to the fact that the study was conducted in an urban environment where residents may have been adopting more urban or Western attitudes towards animals. This is, however, a mere hypothesis. As such, the reasons for keeping dogs in different geographical and socio-economic areas in South Africa warrant further investigation.

Problems often associated with dogs in rural communities include dogs killing chickens, dogs biting children, stray dogs being a nuisance, noise, faecal contamination, bitches in season, dogs tearing open rubbish bags, and uncontrolled breeding (McCrindle et al., 1999). In the current study, participants namely identified the killing of chickens, stealing of eggs and biting of people as challenges, all of which are consistent with the McCrindle et al. (1999) study, which was undertaken in Soweto, a peri-urban township in Johannesburg, South Africa. The other problems noted in the aforementioned study were, however, not identified in Hluvukani by the participants in the current study. It is possible that, due to the more rural nature of the environment of my study, challenges such as noise and faecal contamination are less noticeable than in areas where people live in closer proximity to one another. It may also be the case that the people in the Soweto study were more aware of these problems due to having been educated about them by the animal welfare organisations in the area. A further possible explanation is that, since my study did not focus specifically on these aspects and I obtained this information during informal discussions, there may perhaps be more challenges related to dogs than what was reported. It is also possible that dogs in rural areas are naturally quieter and cleaner than dogs kept in an urban context. All these remain mere hypotheses, requiring further investigation before coming to conclusions.

The current study revealed some new insights related to how dogs that pose the problems mentioned above, are dealt with. I namely found that dogs that become too much of a problem, are disposed of either by hanging them from trees, catching them in traps or feeding them fish bones, which local people believe can kill dogs (Discussed in more detail in 6.3.3.2 below). The procedure to hang dogs is done in a manner that would likely cause a lot of suffering to the dogs and presents concerns in terms of animal welfare. However, a sense that if one owns a dog, one has the right to kill it if it

poses a problem, is evident in the Hluvukani community. Related to this, the practice of removal of the frenulum of the tongue, ostensibly to prevent disease, raises welfare concerns. This was referred to by the participants as “cutting the worm out of the tongue”, yet in fact there is no worm in the tongue of a dog, despite the elastic nature of the frenulum tissue creating the impression of a “worm”. Although both this practice and the practice of hanging dogs from trees are reportedly decreasing, it nevertheless does occur and has implications for the well-being of dogs in the community.

It follows that the current study provides insights and may contribute to the knowledge base associated with the killing of dogs, as well as the cutting of the tongue. Both these practices are well known anecdotally, yet I was unable to locate existing scientific literature on these practices. As such, while anecdotal evidence exists of these practices in other parts of South Africa, it may be valuable to obtain and publish data on the true extent to which such practices are prevalent in the country, and how they affect the welfare of animals.

With regards to community members, the current study indicates that dogs in Hluvukani are mainly viewed in terms of practical utility and not as something a human being has a relationship with. Dogs do accordingly not fulfil the role of companions, friends or family members, and are more likely to be perceived as consumable and disposable items. A such, the general attitude towards dogs can be described as primarily indifferent. This finding is in line with the dominionistic orientation towards animals (Blouin, 2013), which concurs with the attitudes described by Hohn et al. (1992) of their veterinary hospital clients in a rural setting in South Africa. Hohn et al. (1992) namely reported that as dog owners in their study became regular clients of the veterinary facility and learned about the needs of their animals, their attitudes changed towards what can be interpreted as a more humanistic orientation. Such a change in attitude was also evident in my study towards the end of the intervention as participants started displaying more empathy to and appreciation of dogs than at the beginning of the study. A study investigating the impact of veterinary community engagement on changes in attitudes to dogs in different settings in South Africa, can elaborate on this finding and inform future veterinary community engagement interventions.

6.3.3 Barriers to foregrounding the rabies topic during the PRA-intervention

Chambers (2002; 2008; 2017) emphasises the manner in which PRA-interventions typically evolve and unpredictably emerge, and the need for patience when the process does not work out according to plan. In the current study, it was challenging to obtain a focus on rabies, as participants initially were not interested in the topic, due to other more important issues, such as a lack of water during the period of drought, and the perceived poor quality of education of their children. This finding concurs with the observations of Catley and Leyland (2001) that topics of interest to the researcher are not necessarily of immediate importance to the participants. As a result, I had to be patient and allow the PRA-process and participants to determine the agenda and time of focusing on the phenomenon.

In this section, I discuss the findings I obtained in terms of the difficulty to establish rabies as the focus of the intervention. Apart from the participants' initial limited knowledge about rabies (Consult Section 6.3.1.1), the difficulty to obtain a focus on rabies was affected by their initial hesitance to contribute freely to the PRA-activities, and by local superstitions and beliefs.

6.3.3.1 Participants' hesitance to participate fully in the PRA-intervention

In the current study, participants were initially hesitant to express their personal feelings and opinions. They exhibited shyness and a lack of the necessary self-confidence to participate actively in the PRA-activities and speak in front of other people, in particular in English. It is possible that the initial concerns expressed by the participants were related to their own schooling and childhood experiences, where perhaps they were not encouraged to voice their opinion. Linked to this, the history of political disempowerment may have contributed to their initial hesitance to have their voice heard.

Chambers (2013) emphasises the need for researchers to acknowledge that the participants in PRA are the experts, and to learn from them. The participants in Hluvukani may have had limited prior exposure to an outsider considering them as experts, and this may have contributed to their initial limited participation. Once participants understood that their opinion was truly valued, they became more participative. This is in line with the PRA-principles of role reversal, participant as

expert, and partnership between researcher and participants (Chambers, 1992; 1994; 2017).

Perceptions of power relationships may have created barriers in terms of the participants' contributions. To this end, the impact of power dynamics was evident in the way participants perceived certain individuals or groups of people, based on their perceived status in the group or in society. This related specifically to the way in which white people and also an older black male professional were perceived, which may in turn be linked to cultural beliefs and the dominant role that older males play in the black culture, or to people who hold professional qualifications or status. It revealed a vulnerability in the participants. Perceptions related to race, language proficiency and socio-economic status of the facilitator may furthermore have played a role in perceived power relationships. Chambers (2008) refers to the power differences that may play out in a PRA-intervention, and advocates awareness and consideration thereof to ensure that participants have the opportunity to make their voices heard.

Another challenge that initially hampered full participation, relates to group dynamics. One of the group members who was older, more informed and a recognised existing community leader, tended to dominate discussions and activities, especially in the early stages of the intervention. He easily complied when other members requested him to provide input, diminishing their own contributions. It was initially difficult to prevent him from doing everything on behalf of the other participants. He accepted responsibility even when the group was unable to complete a task, when in fact it was not his sole responsibility. Even though the dominant participant initially presented a challenge, the overall contribution of the specific participant in the intervention was nevertheless beneficial.

As the intervention progressed, the problem was spontaneously resolved as the other participants became more confident and started participating more actively, at which time the dominant participant's role changed from being dominant to supportive. As such, participants' initial way of keeping back while one took the lead cannot necessarily be ascribed to the latter being dominant but may just as well be linked to their limited confidence to contribute and share ideas, due to being uncertain. More investigation in this area is required.

Language barriers furthermore contributed to the hesitance of the participants to contribute, more specifically at the start of the intervention, when trusting, open relationships were still being established. This stemmed, among other reasons, from misunderstanding by the participants of certain words and concepts. Meanings of concepts such as *potential resource*. *positive message framing* and *modern* were not clear to everyone, and concepts such as, seeing issues from different perspectives, and individual voting as opposed to collective voting were not well understood. On some occasions, the participants found it difficult to suggest ideas related to the PRA-activities. This may have been related to the fact that English was not a first language for any of the participants.

In an attempt to address this challenge, I focused on stimulating creativity (generating ideas) and critical thinking (assessing ideas) as an important goal of a PRA-intervention. When I utilised creativity exercises at the start of meetings, it seemed to stimulate thinking and encourage participation. I found that clear and simple language when asking questions or giving instructions for activities, and requesting feedback in order to clarify words and concepts, enhanced the PRA-process.

In spite of the initial barriers identified above, learning did eventually occur, with the result that the participants felt empowered as individuals and also as a group of community members sharing similar backgrounds and objectives. These challenges, when viewed as part of a participatory veterinary community engagement intervention, represent new insights, since existing literature on the practicalities of a veterinary PRA-intervention, is limited.

6.3.3.2 Effect of cultural beliefs and superstitions on participants' perceptions

Following their study, Hampson et al. (2008) reported that local beliefs and superstitions may result in human rabies cases not being reported. This assertion is supported in my study as participants indicated that, when people die in an unusual manner, it could be the result of witchcraft. This belief furthermore implies that, should a community member die of undiagnosed rabies, it may be attributed to witchcraft rather than the disease itself, with the process of dying of rabies being very distressing (Wilde et al., 2016). This finding furthermore supports the findings of Knobel et al. (2005) as well as of Taylor et al. (2017), indicating that rabies death statistics are likely to be misrepresented in official statistics.

Regarding perceptions of the role of witchcraft in animal disease, two studies (Beinart & Brown, 2013; Luseba & Van der Merwe, 2006) support the notion that the supernatural is not commonly considered as a cause of animal disease in South African rural populations. The current study concurs with this finding as witchcraft was mentioned in connection with human diseases, but not referred to as a potential cause of animal disease. The only mention made of witchcraft in connection with animals in the current study, entailed the cow that had ostensibly given birth to a human baby in a nearby village. Although the participants were sceptical about whether or not the cow had in fact given birth to a human baby, they strongly believed that the cow had put a curse on the farmer, since he died shortly after having killed the cow.

Such a belief that cows can give birth to human infants, has been anecdotally reported in other rural South African areas too. A likely explanation relates to calves born with congenital abnormalities being regarded to be human (Moerane, 2017). Beinart and Brown (2013), in discussing the well-known belief that women may bring disease to animals, found that in practice many people do not subscribe to this belief. This is supported by the current study because, although the belief was mentioned and subscribed to by some individuals for example the chicken farmer, the majority of the participants (notably women) did not give credence to this belief.

With regard to dogs, participants in the current study held the belief that, when dogs eat fish bones, they would start losing their coat and subsequently die. This finding loosely corroborates with the work of Thys et al. (2013) who reported on two related perceptions namely, that dogs can get rabies from eating the bones of tinned fish, and secondly, that rabies is similar to a disease causing hair loss in dogs. It is thus apparent that varying beliefs connecting the ingestion of fish bones by dogs, followed by hair loss and subsequent death, exist. As the study of Thys et al. (2013) specifically focused on rabies, it is also possible that participants may have transferred this general belief to rabies, having been sensitised to the topic.

Based on current veterinary scientific knowledge, it is, however, unlikely that hair loss of dogs is caused by the ingestion of fish. As such, the connection between fish bones and skin disease is seemingly based on incorrect assumptions or beliefs. Contrary to what I found, the death of dogs with severe skin conditions is probably due to the combined effects of chronic disease, poor nutrition and low immunity. This can indicate

the possibility of existing beliefs potentially presenting a barrier to learning about animal disease, thereby pointing to new insights into how local beliefs and superstitions may affect the understanding of aetiology[17] and pathogenesis of disease. Further studies examining the level of knowledge and existing misconceptions of rabies in diverse South African communities, can assist in planning effective future prevention campaigns.

6.3.4 Effect of stakeholders' perceptions on collaboration

Van Dijk et al. (2013), who conducted a participatory study on donkey welfare in Indian villages, illustrated tension between the organisation that implemented the participatory intervention and the veterinary team, where the veterinarians initially believed that animal problems could only be solved by a veterinary intervention. In the current study, similar tension could be observed between the state veterinary team and the participatory process I facilitated. Although this does not compare exactly to the context and focus of the Van Dijk et al. (2013) study, it does illustrate a possible tendency for veterinary professionals to claim exclusive ownership of veterinary issues without appreciating the benefits of community-driven action. While this in most instances represents the passion of professionals for their work, it can nevertheless hamper stakeholder collaboration and prevent the successful achievement of common goals. As such, in the current study, the tension between state veterinary services and the project itself, represents new insight that has seemingly not been previously reported.

The sense of ownership by state veterinarians in the current study, most probably has its origin in the legal mandate of state veterinary services. Rabies, being a notifiable disease in terms of Act 63 of 1977 (refer to Chapter 2, section 2.2.2.1), is taken very seriously by state veterinarians as they are mandated to control the disease in animals. This may at times come across as an appropriation of the responsibility to manage rabies, to the exclusion of other stakeholders. I furthermore sensed a perception among state veterinarians that researchers in this domain present a threat, supported by a concern that researchers may negatively report on the work of state veterinarians

[17] The Concise Oxford English Dictionary (2008) defines aetiology as "the cause or causes of a disease or condition".

causing reputational damage. In the current study, another factor feeding into the tension, was a misunderstanding by the state veterinarians of the nature of qualitative participatory research. The notion that the study did not seek representivity of the larger community but instead sought to describe and understand the views and experiences of a small group of participants in a more detailed and personal manner, was initially misunderstood and contributed to a negative view of the project by the state veterinarians during the first few phases of the study. The tension was, however, resolved by face-to-face engagements during which common goals and mutual assets were emphasised.

6.3.5 Transformative effects of PRA

The beneficial outcomes of the PRA-intervention in Hluvukani included empowerment of the participants at different levels, increased empathy with dogs in the community, and mutual transformation of the participants and facilitator/researcher.

6.3.5.1 Empowerment of individuals and the community

Community-based assets include the strengths and resources of individuals as well as institutions. The identification of such assets often leads to the mobilisation and utilisation of the assets towards a common goal through collaboration as described in numerous studies (Brodsky & Cattaneo, 2013; Cunningham & Mathie, 2002; Green & Goetting, 2010; Kretzmann & McKnight, 1993). In the current study, however, although the participants possessed many personal skills and abilities (self-identified and facilitator-observed), they did not initially seem to appreciate these, nor did they actively utilise them in addressing the challenges they identified or posed to them in terms of rabies prevention. Within the framework of this study, after five PRA-engagements, participants started applying their personal assets to address rabies prevention. This finding may be linked to the participants initially being shy and hesitant to contribute, and at times lacking the necessary self-confidence. To this end, they may similarly not have been able to identify personal strengths and assets before securing firm relationships of trust and gaining confidence in their own value.

Once participants had identified their assets, the PRA-process was enhanced by their willingness to mobilise these and take action related to rabies prevention, their sense of responsibility and the way they supported one another. Some participants turned

out to be natural leaders and others followed with dedication. The multiple role of the interpreter-cum-participant-cum-motivator illustrates the blurring of the lines between phenomenon and context, as is often evident in case studies (Strydom, 2012b; Yin, 2014). This, and the support provided regularly by the "dominant" participant, helped to promote group cohesion and action. Towards the end of the intervention, both initial leaders spontaneously withdrew to an extent, in a sense "handing over the stick" to the other participants.

The identification and mobilisation of assets is an important step towards empowerment, which in turn enhances people's awareness of their own abilities and resources that can be mobilised to effect social change (Bhana, 2014). Empowerment can take place at different levels (Bhana, 2014; Klein 2014) including the individual level where it manifests as self-esteem and internal motivation as I observed in the current study. This is referred to as emotional empowerment by Christens et al. (2013). In addition, empowerment can take place on the structural level, and results in control over resources such as knowledge (Bhana, 2014).

It follows that participants in the current study were empowered at both levels. At an individual level, the PRA-intervention helped them gain self-confidence, particularly in speaking English and making their opinions heard. They reported how they utilised their newly-found confidence in other situations. A participant reported that she had overcome her fear of dogs through her participation in the study. In general, participants reported that they had enjoyed the participatory aspect of the intervention in particular, thereby again confirming the process of gaining self-confidence and being empowered.

At the structural level, the participants felt empowered by gaining knowledge and being able to share this with others. More specifically, they moved from numerous initial misconceptions about rabies to improved levels of knowledge of the topic and eventually sharing their ideas with others in the community in a confident way. This was done by conducting house-to-house-visits informing people about rabies and its prevention, and by planning and staging an educational play with a rabies prevention message to learners at two primary schools. The participants in this study thus gained a new awareness of how they could facilitate change in their community by utilising their personal assets. With regard to the empowerment effect of PRA, my findings

represent new insights, as literature on PRA-application in the veterinary context is limited.

6.3.5.2 Development of empathy with dogs

Positive exposure to animals through learning about their needs, may result in increased empathy with animals, according to Samuels et al. (2016), Taylor and Signal (2005), as well as Thompson and Gullone (2003). The findings I obtained concur with these authors' views. Initially, participants in the current study were impartial to dogs, yet as the study progressed, they became increasingly interested in dogs. One participant acquired a puppy for his family and mentioned that his family now "loved" a dog. The concept of loving a dog was also echoed by another participant, who described how her family's attitude to their existing dog had changed as the dog was allowed into the house as the intervention progressed, and was being bathed regularly as a result. Participants also started having more empathy with the two dogs that sometimes visited the site where the intervention was conducted.

Participants increasingly recognised that dogs needed basic care like shelter and food, and started appreciating abstract concepts such as the Five Freedoms of animals and the acknowledgement that dogs had the right to live and be protected. Participants also understood the One Health concept following the intervention, and recognised that humans and animals shared the same environment and that humans had a responsibility towards promoting the health of animals and the environment. They appreciated that there was a reciprocal relationship between dogs and humans at the end of the intervention, whereas the start was marked by indifference towards and occasional irritation with dogs.

As such, these findings represent a significant shift in the participants' perceptions of the role of dogs in society, from an indifferent to a caring attitude to dogs. This finding supports existing literature on development of empathy with animals through humane education. Existing literature however focuses on the effects of formal education programmes in schools (Samuels et al., 2016) whereas the current study involves adults in an informal setting. The current study thus provides new insight into the development of empathy with animals in adults in the Hluvukani community, but further research is required to compare the effect of humane education in adults and children.

6.3.5.3 Mutual transformation of participants and researcher

Participatory research can result in the transformation of both participants and researchers (Bhana, 2014), in accordance with Chambers's (2013) concept of reversal of roles between the researcher and those being researched. I similarly found that through the PRA-intervention I facilitated, I became more aware of different perspectives related to animals and animal health, and this led to a deeper understanding of others' actions and attitudes. Starting out as an outsider (the etic position), I gradually became more absorbed in the world of the participants and began to gain an insider (emic) perspective.

In defining "enablement", Janse van Rensburg (2014) refers to the concept of mutual transformation in addition to collaboration and participatory approaches. To this end, the current study exemplifies enablement. I did, however, find that mutual transformation did not occur simply because a PRA-process was followed - it required a conscious commitment by the researcher to be open to such transformational change. Chambers (2013, p. 201) perhaps says this best in the following way: "[Try] to experience the world as a poor and weak person". Even though this finding thus supports existing literature on PRA-interventions and associated enablement and change, it also presents new insight into the application of PRA in veterinary community engagement.

6.4 DISCUSSION AND CONCLUSIONS

In this section I draw conclusions, based on the study I completed and the findings presented in the previous section. I first address the secondary research questions (Consult Chapter 1) and then attend to the primary question.

6.4.1 Secondary research question 1: What is the role of animals, and in particular dogs, in the community?

As indicated by the findings, the role of animals in the Hluvukani community portrays a picture that has previously been reported in other studies, namely that cattle are considered as a measure of wealth, and although cattle are usually eventually slaughtered for meat, goats, chickens and pigs are more commonly utilised as a source of food in Hluvukani. Goats, chickens and cattle are furthermore utilised for cultural

activities, such as communicating with ancestors or for spiritual cleansing. Donkeys are generally used as draught animals in order to transport goods such as firewood.

In terms of the community's view of dogs, I present conclusions that relate to general views in the community and not to that of the participants, whose perceptions changed due to their involvement in the intervention. In the Hluvukani community, dogs are seldom considered valuable for any reason beyond that of security or hunting. As such, the primary function of dogs is not that of companion in this particular community. Most dogs roam freely in the community, and as a result scavenge for food from litter along the road, rest or move around of their own accord. Dogs are not considered as part of the household, but rather as property, and although they are fed by people, they also rely on finding their own food by scavenging and sometimes hunting for prey, which may include chickens and young goat.

The main problems caused by dogs in Hluvukani relate to their behaviour, which is often linked to the very same behaviour that makes them useful. For example, a dog that is aggressive towards a potential thief is considered useful, but if that dog were to bite a family member, it would be considered as a problem. Similarly, a hunting dog is expected to chase prey animals in specific circumstances such as when a hunt is controlled by people, but may not kill chickens of its own accord. However, such behaviour is an expression of the same hunting behaviour.

Although the participants reported some practices that represent animal welfare concerns, such as the hanging of dogs and the cutting of their tongues, these are apparently not practised commonly in Hluvukani. Based on the findings I obtained, I posit that dogs are thus not maliciously mistreated in Hluvukani, but that misconceptions about the diseases that may affect dogs and how dogs die have resulted in an indifference in the community to the well-being of dogs. An example includes the belief that the ingestion of fish bones may result in a dog dying slowly as a result of a skin condition – yet my findings do not indicate any concern expressed with regard to the suffering that would be part of such a condition. Similarly, the process of tongue cutting or the hanging of dogs were not found to be a matter of concern regarding animal welfare for most community members. As a result, if a dog presents a problem, such as biting – the wrong – people or killing chickens, it will unceremoniously be disposed of with little or no regard for its well-being. I ascribe this

lack of concern for dogs' welfare to community members not being sufficiently informed about the needs of dogs. I posit that better knowledge of behaviour management and the primary health care of dogs may increase the perceived benefits and reduce the perceived risks associated with dogs in Hluvukani. This in turn may lead to better health care and thus increased longevity of dogs, resulting in a decreased turnover of dogs in the community. A smaller, healthier community of dogs can in turn promote effective rabies control.

In summary, I can conclude that dogs in the Hluvukani community are viewed as "just animals". While dogs are tolerated in the community and not wilfully mistreated, they do not appear to engender much empathy in people. Dogs are not regarded as part of the family and thus do not fulfil the role of companion. They are considered useful in certain circumstances, such as when they protect property or assist with hunting. The value of dogs diminishes when they pose problems in which case they are easily disposed of and subsequently replaced. Limited knowledge of the needs of dogs possibly contributes to the perceived lack of empathy towards this animal species.

6.4.2 Secondary research question 2: How is animal health and rabies control perceived in the community?

I found that the participants had limited knowledge of animal health in general and rabies in particular at the onset of my study. At the time these topics were not prioritised yet other challenges such as the lack of basic services and quality of education were regarded as important. However, over time, the participants started focusing on rabies control in the community.

Several misconceptions of rabies had to be addressed, during discussions as part of the intervention. For example, a loss of appetite and weight were identified as signs of rabies in humans, and loss of hair as a sign in dogs. Furthermore, it was surmised that rabies could be spread genetically and from mother to child. Participants cited eating expired food and stress as potential causes of rabies. It was furthermore evident that vaccinations of dogs as the preferred method of rabies prevention was also not well understood in the community and was perceived as potentially harmful to dogs.

In the same manner, participants did not possess detailed knowledge about the extent and nature of veterinary services in Hluvukani when my study commenced, despite the

presence of the university's animal clinic as well as an active state veterinary team. I contemplate that this lack of knowledge may have been due to limited exposure to the available services, possibly because the participants themselves did not possess animals, or if they did, may not have had the need for veterinary services. It is also possible that the veterinary services that are available, have not been effectively marketed to the community. However, over time, through the PRA-intervention, participants became more interested in the rabies topic and showed interest in learning more about the disease, and related service provision in the community.

Based on the findings of the current study, I can thus conclude that a gap initially existed between the biomedical approach of veterinary professionals and the local understanding of the causes, pathogenesis and prevention of rabies. As professionals are currently primarily trained in the western tradition, I propose that the veterinary science community become more receptive to different views on aetiology and pathogenesis of diseases. I posit that the One Health concept, which holistically considers the health of humans, animals and the environment as interdependent system, can provide a potentially more suitable model for knowledge sharing about diseases in this specific rural community than the traditional pathogen-based approach to medicine.

6.4.3 Secondary research question 3: What are the strengths of the community and how can these be utilised to promote animal health?

As part of the current study, several physical resources and assets could be identified in Hluvukani, in addition to the assets and strengths of community members themselves. They demonstrated a willingness to find solutions in challenging situations and spontaneously helped each other during times of need. Various personal skills and abilities were identified as assets, despite initial difficulty to link these to practical ways of facilitating rabies prevention in the community. The outcome of the intervention, namely the production of an educational play about rabies prevention, however, represents an awareness and act of taking agency by the participants, demonstrating a realisation amongst themselves that their own skills and abilities can enable them to make a difference in the community.

The strengths-focused approach I followed for this study enabled me to facilitate a process whereby the participants could identify and subsequently mobilise existing

assets and potential resources. The application of PRA principles and PRA-based activities also supported the strengths-focused approach as it helped participants become aware of assets they had not recognised before, and gave them the self-confidence to utilise their skills and abilities, in addition to relying on the resources and assets in the community.

As such, the participants were able to identify community strengths yet they initially did not link these to animal health. They for example recognised the dip tank as an asset but at the same time noted that the lack of dip product and water (due to a severe drought in the area at the onset of the study) remained a challenge. As such, I postulate that, since rabies initially was not a priority for the participants, community assets were not fully mobilised for this at the start of my study. The participants were, however, eventually able to involve the community in the form of an educational theatre for primary schools and house-to-house visits in a rabies awareness project by applying the assets they identified. The possibility exists that more community assets can potentially be mobilised in future, for the purpose of rabies awareness and other health/animal health issues.

In conclusion, it is my contention that the success of a participatory engagement intervention largely depends on both the identification and mobilisation of assets and potential assets in support of a common goal. This process can allow individuals and groups to explore possibilities actively and as a result, experience feelings of empowerment, both at individual level by gaining self-confidence, and at structural level by gaining knowledge. As power dynamics are part of empowerment, feelings of empowerment can potentially enable the community to explore who holds power and why more confidently, in turn enabling them to take agency in new contexts.

6.4.4 Secondary research question 4: What are the challenges involved with utilising PRA to facilitate rabies control in the community?

As facilitator of the PRA-intervention, I initially found it challenging to steer the focus of the intervention towards the topic of rabies. I posit that this was due to a combination of factors, including the fact that the community was facing other, important challenges that needed attention; participants' limited knowledge of rabies at the start of my study; hesitance of the participants to openly contribute at the beginning due to shyness, a lack of self-confidence to make their voices heard, power dynamics, group dynamics,

as well as language barriers; and local beliefs and superstitions that were in opposition to the scientific, Western view of disease in general. I can however conclude that the application of PRA-principles assisted me in addressing these challenges and allowed progress to be made with regard to all the factors related to the initial lack of focus as the study progressed.

Another challenge I experienced was to stimulate critical and creative thinking amongst the participants. This challenge was partly the result of a conflict I experienced between the principles of PRA which required me to allow the participants to take control of the process, and the need to intervene when the initial hesitance of the participants to communicate in English, or speak in front of others, resulted in limited participation by the participants. I can conclude that this conflict could be addressed by utilising PRA-based activities to trigger thinking in general, before progressing to more topic-specific PRA-activities. To this end I argue that at the start of a PRA-intervention, some time should be spent on building sound relationships with the participants, before commencing activities, encouraging them to participate and develop their thinking skills. In my study, this fostered mutual trust that was regularly enhanced by affirming that the participants were experts in terms of the topic of the study. As the intervention progressed, participants spoke more freely and gained self-confidence, to the point where they were able to stage a play of their own accord.

Furthermore, stakeholders such as the state veterinarians did not initially understand the underlying principles of the participatory research process. Ongoing communication was thus required to ensure their understanding and garner their support. To this end, I argue that due care and diligence must be exercised to keep local and regional stakeholders abreast of any community engagement process and what it will entail, when undertaking an intervention of this nature. Within this specific context, state veterinarians' buy-in and support was essential for rabies awareness to be fostered and the prevention project to succeed. It is important that stakeholders understand the research methodology guiding an intervention, as misunderstandings in this regard can lead to misconceptions about what is being done in a study, and what can be expected. Regular face-to-face communication appears to be the best way to address such challenges.

6.4.5 Secondary research question 5: How did PRA change the participants' perceptions and actions in general and with regard to rabies control?

Findings of this study demonstrate the positive outcomes and value of the PRA-intervention, in terms of participants' increased awareness and knowledge of rabies, increased participation in the PRA-process, them taking action to promote positive change in the community, and better group cohesion that developed. As the PRA-intervention progressed, participants namely demonstrated improved knowledge and understanding of rabies and its prevention, which could be seen in their contributions and the action plans they developed.

With time, they also contributed with increased levels of self-confidence and spoke English more freely. To this end, participants wanted to learn even more and wanted to share their knowledge with the community at the end of the study. Their performance of an educational play for school learners indicated that they had undergone a significant transformation as a result of their participation in the PRA-intervention, from being afraid to have their voices heard, to taking charge and performing a play to a real audience. Furthermore, there was evidence of a change in attitude to dogs – and participants notably acknowledged that dogs had the right to be looked after properly. In addition, it was evident from the participants' behaviour towards the clinic dogs that they had more empathy with the dogs as the study progressed and they gained knowledge.

In this regard, I argue that the transformative effect of PRA stems from its basic principles – allowing others to speak for themselves and teach the teacher, showing respect for all participants and valuing their opinions, seeking to understand phenomena through the experiences of others, and encouraging others to take control. Based on the way in which I thus conducted this study being guided by PRA-principles, I can conclude that the participants were empowered in the process, and subsequently displayed higher levels of understanding and proposed action in terms of animal health and rabies control in the Hluvukani community.

As such, I posit that PRA was effective in changing participants' perceptions about animals and animal health, and facilitating behaviour change with regard to rabies awareness and prevention specifically. Furthermore, I propose that PRA is likely to be similarly effective in transmitting other animal health and One Health messages. I base

this argument on my findings indicating the possibility to stimulate an interest in a topic (rabies) that was not central in the participants' lives through the application of PRA-principles.

6.4.6 Primary research question: How can participatory reflection and action be utilised to facilitate awareness and prevention of rabies in the Hluvukani community?

When the PRA-intervention commenced, participants displayed limited knowledge of rabies, the needs of dogs, animal health in general, and veterinary services in the community. They were hesitant to participate in the PRA-process, and did not effectively utilise their assets to promote rabies awareness and prevention. During the course of the PRA-intervention, the participants became more confident and knowledgeable. Towards the end of the intervention, they could as a result accurately explain the basics of rabies aetiology, epidemiology and prevention, and took action to share their knowledge with members of the community. They furthermore reflected on and provided input for a rabies information pamphlet to be distributed in the community. They accepted responsibility for further learning by participating in the Rabies Educator online program, and planned and performed an educational play for learners. My findings also indicate that participants' attitudes to dogs changed from being indifferent to dogs to recognising their needs and displaying empathy with dogs.

Based on these findings, I can conclude that PRA was effective in facilitating awareness and prevention of rabies in this particular community. This change occurred through a process of firstly building up trust with the participants to introduce and foreground the rabies theme, and then enabling participants to learn gradually about rabies up to the point where they were ready and motivated to share their newly gained knowledge and skills with the rest of the community. The PRA-intervention facilitated a process whereby participants became aware of challenges and identified strengths in themselves and their community. They consequently found ways of mobilising their assets and resources to plan ways in which to promote rabies awareness and prevention in their community. Ultimately, the participants took ownership of the rabies challenge in the community and were empowered to decide for themselves how to elicit change, and then act on their own decision. If the flexible nature of PRA is utilised to its full advantage, and a researcher reflexively steers the process without impinging

on participants' freedom to express themselves, a PRA-intervention can result in mutual learning by participants and the researcher, and meaningful action, resulting in positive change.

Lessons learnt with regards to the PRA-process include that maintaining an overall focus will always be challenging since PRA in itself is a flexible process, and these challenges are inherent to the PRA-process. Another insight is that obtaining focus requires patience and a mutual process of getting to know one another in order to build trust. Trust and relationship building is a requirement for successful PRA and cannot be rushed. Furthermore, if focus is lost, it should not be regarded as failure, as valuable data may still emanate from the intervention even if the focus is on another topic. In addition, the PRA-approach does not exclude steering the intervention in a particular direction, as long as the basic principles of allowing participants' voices to be heard, retaining a relaxed atmosphere and practising reflexivity, are applied. Finally, maintaining a positive attitude and focusing on strengths and solutions, helps to give direction during the PRA-process.

Moreover, based on these findings, I propose that the PRA-driven rabies awareness and action intervention programme I facilitated with participants in Hluvukani has the potential to result in decreased numbers of rabies cases in both dogs and humans, enhancing the One Health concept. If improved knowledge relating to rabies vaccinations and post-exposure prophylaxis results in people taking their responsibility as dog owners more seriously, it can in turn lead to better overall care of dogs, by improving community awareness and through implementation of primary animal health care. Changed attitudes among the participants to canine health and well-being may be transferred to species other than dogs. This in turn can lead to generally improved levels of animal health and welfare, and possibly enhance the quality of life of humans by reducing the challenges posed by sick or problem animals. Follow-up and further research in this area may shed more light on this hypothesis.

6.5 POTENTIAL CONTRIBUTIONS OF THE STUDY

In this section I discuss potential contributions of the study to existing theory, methodology and practice.

6.5.1 Contributions to existing theory

My study adds to the knowledge base on how rabies and other diseases, the roles of animals, and veterinary service provision are perceived in Hluvukani, or in similar rural communities in South Africa, facing similar challenges. This knowledge can in turn contribute to existing theory on veterinary community engagement, as it may assist in strategising where, when and how engagements on primary animal health care may be contemplated, and which issues such engagements can address.

More specifically, the current study highlights the need to understand local perceptions of animal health and specific diseases before attempting to change perceptions. Existing knowledge and beliefs in a community can be revealed through a participatory process and subsequently used as a starting point when engaging with communities regarding diseases and disease prevention. An understanding of how causes, transmission and mechanisms of disease are perceived in a particular community, and appreciation of the role of local beliefs and superstitions in forming these perceptions, may assist in framing learning in a way that is sensitive to the community's existing understanding of a topic. Furthermore, insight into the roles of different domestic animal species in society can inform decisions relating to where emphasis should be placed in primary animal health care programmes.

A particular area of veterinary community engagement that may benefit from this study, is that of dog population management, where knowledge, attitudes and practices of people are studied prior to implementing action plans for dog population management. This study may furthermore contribute to theory in anthrozoology and humane education, by providing a better understanding of attitudes to dogs in rural, resource-poor areas, and how attitudes and empathy levels may change by following a PRA-approach during interventions.

6.5.2 Contributions to methodology

This study applied PRA in an alternative setting that has not previously been described in terms of methodological detail. Unique aspects of this study relate to the purpose of the intervention, the context for guidance and community support, the approach to veterinary community engagement, and the nature of the participant group. The study

confirms the relevance of the underlying principles of a PRA-approach in this unique setting.

The purpose of the study was to address a public and animal health topic with the objective of promoting health-maintaining behaviour, specifically relating to the zoonotic nature of rabies in a resource-poor, rural community. It adds a new dimension to veterinary community engagement, in particular in terms of participatory and strengths-focused approaches, and contributes to guidance and community support by adding a new context, namely the veterinary community engagement context.

The group of participants was unique in terms of being fairly diverse without an existing strong mutual interest in the topic of the intervention at the start of the study. Furthermore, most of the participants were unemployed and participated completely voluntarily, with no obvious incentive to participate. They were merely residents of Hluvukani, not bound together through any mutual organisation, occupation or specific interest. As such, even before a focus on the topic of the intervention could be achieved, the group had to learn to cooperate and deal with various aspects of group dynamics. The PRA-process allowed group cohesion, and roles, to develop as the process played out.

The study emphasises the importance of applying PRA-principles when conducting an intervention with community members, such as taking time to build trust and confidence, to foreground the relevant topic. Findings confirm that consistent affirmation of the participants as experts and allowing their voices to be heard in a safe, nurturing environment can lead to positive results and change in a community. In addition, the study illustrates the benefits of a strengths-focused approach in the manner in which asset-identifying activities can lead to mobilisation of assets, while also attending to challenges. This in turn led to people being empowered to take action, feeling enabled to take agency, thereby supporting the PRA-principle of “handing over the stick”.

I can thus conclude that PRA-methodology can be applied in the veterinary community engagement field to promote knowledge and behaviour change necessary to ensure better human and animal health, by enhancing knowledge of human and animal health in communities. Simultaneously, this methodology can result in increased self-

confidence and an ability to contribute and initiate change amongst people who may have perceived themselves as powerless in the past. As such, it is suitable for application in rural resource-poor contexts. This may in turn contribute to guidance and community support efforts that can be applied within a multi-disciplinary context.

6.5.3 Contributions to practice

As already indicated, my study facilitated an increased awareness of rabies and its prevention in the Hluvukani community, and should lead to better utilisation of the animal clinic's services in the community. The community has thus benefited from increased rabies awareness in terms of public health. This may decrease the risk of human rabies yet potentially also the overall incidence of dog bites due to the dog bite prevention message that is being conveyed in the community as part of the rabies message. The biggest benefit to the community relates to rabies activists now being present in the community – the Hluvukani Rabies Fighters – who may support the community in staying safe. Changed perceptions about dogs that I observed amongst the participants, could spread to the rest of the community, in turn supporting better care for dogs and a more empathetic society in general.

If re-applied and extended, the possibility exists that the intervention can potentially even lead to job creation, if local people are for example trained as veterinary welfare assistants – similar to the community-based animal health workers (CAHWs) in other African countries. They could possibly be employed in public-private partnership initiatives between, for example, the state veterinary services, universities and the community. Ultimately, increased awareness of the importance of primary animal health care, in rural communities such as Mnisi, may ultimately even contribute to the establishment of one or more private or semi-private veterinary facilities, supported by local clients. Therefore, PRA-based interventions (such as the one I developed and facilitated) can also be applied in other communities in the region and elsewhere, and have the potential to improve awareness and stimulate positive action in terms of animal health issues within the One Health focus.

Finally, the findings of this study can contribute to the development of guidelines for implementation of veterinary community engagement, both for undergraduate students and qualified veterinarians as well as veterinary para-professionals. Ideally, with the increased emphasis on One Health, multi-disciplinary teams can benefit from such

guidelines. In particular, with regard to guidance and community support, the overlaps between animal and public health necessitate an interdisciplinary approach, whereby issues not directly relating to animal health but having an effect on how successfully an animal health programme can be implemented, can be addressed simultaneously with veterinary issues.

6.6 REFLECTING ON CHALLENGES AND LIMITATIONS OF THE STUDY

As a white, female, English-speaking university lecturer, I was very much an outsider when entering the research site and started collaborating with participants who are black, mostly unemployed, without tertiary education and not speaking English as first language. I was, however, able to address communication and potential language barriers through the services of an interpreter. As a university lecturer, there was a potential power imbalance, which could have been partially responsible for the initial hesitance of the participants to participate fully in the PRA-process. My being an outsider and perceived as being relatively well off, furthermore led to frequent requests by the participants for money and gifts, which I had to deny repeatedly to remain consistent and unbiased. As I had to focus on being the voice of the participants and telling their story, I often had to reflect on how I was doing this and how I could improve.

As a result, as an outsider and university researcher, I initially found it difficult to gain access to the community due to all the role-players involved, who had to be consulted first. These included the research committee of the Mnisi Community Programme, the local Community Development Forum and the state veterinarians, who at times required much detail before providing the necessary support. This rather lengthy process of gaining access to the community through all the relevant role-players affected my time management as I had initially envisioned that I would commence with the project soon after obtaining ethical clearance. However, this also allowed for a deeper understanding of what participatory qualitative research in rural communities typically implies.

Next, as most of the participants were unemployed I faced the potential challenge of a participant obtaining employment and then leaving the project. As a result, I started with 12 participants and ended with eight committed people. Four participants withdrew mainly due to finding employment. Some of the remaining participants faced the

challenge of balancing part-time work with being parents and participating in the meetings of the project. Personal challenges experienced by the participants furthermore affected their punctuality and resulted in occasional poor attendance of sessions. On some days children were brought along to the sessions, which made me realise that the participants had to plan carefully to be able to attend the PRA-sessions. The fact that the participants were volunteers also implied that they did not have the luxury of using paid time to attend meetings and participate in activities. Even though I was not able to solve these challenges I acknowledged the participants throughout, and expressed my appreciation regularly.

The fact that the participants had other responsibilities may furthermore imply a challenge in terms of the sustainability of the outcomes of the intervention, as there was no incentive for them to continue with the rabies awareness initiative. To this end, the participants' taking ownership of the project may however be a supportive factor.

At times, being a veterinarian and not a trained psychologist or social worker, added to some uncertainty on my side when discussing issues such as challenges faced by the community, which could potentially imply personal experiences. However, my experience in the field of animal behaviour therapy where the client (pet owner) is the one being counselled and not the patient (animal), as well as my teaching experience, and my experience in community engagement projects in resource-poor communities, assisted me in dealing with this challenge.

During the PRA-intervention, I found it challenging to direct the focus of the participants towards the rabies topic, without compromising the PRA-principles. This challenge emanated in part from the expectations I had created for myself in basing my intervention too precisely on another example. I had an expectation that by PRA Session 2, we should have reached a point where we could formulate and start implementing an action plan. At the same time I was highly committed to adhering to the principles of participation and not forcing the process into a direction that was based on the fact that I considered it favourable. I allowed some discussions and activities to go in a different direction, and then needed additional time to return the focus to where it needed to be. During PRA Session 3, the focus moved away from rabies completely, towards the establishment of a chicken farm and a vegetable garden. At the time I thought that any plan was better than no plan, any action by the

participants better than none. The slow pace in reaching the focus I aimed for caused some level of frustration and self-doubt, but after due reflection, I came to the realisation that providing some direction for the process was not entirely un-participatory. I accepted that this intervention was unique and that it would take longer to achieve results than I had hoped for and that this was acceptable. Even though I had initially planned three visits they eventually turned into seven sessions. In retrospect, I realised that in spite of the deviation in focus during part of the intervention, the engagements during which the deviation took place did produce valuable data.

Finally, the findings of the current study are not generalisable and thus report only on what this specific group of volunteers said and did, not necessarily representing the rest of the community or the population at large. As the group was selected purposefully and not with the view to obtaining a representative view, and due to the methodological choices I made, I did not aim for generalisability. The small group of participants implied the possibility of engaging with the participants closely and building up trust and a strong reciprocal relationship. As trust was essential in getting the participants to engage truly and share their views openly, I spent ample time on this aspect.

6.7 RECOMMENDATIONS

In this section, I make recommendations for training, practice and further research.

6.7.1 Recommendations for training

Based on the findings, conclusions and my experiences during this study, I recommend training in PRA-methodology and strengths-focused approaches in various academic fields, including that of veterinary science. If students are trained in applying PRA, they may be better equipped to engage appropriately with a diverse client base, particularly as practitioners in resource-poor areas. Furthermore, continued professional development for practising veterinarians may include content on PRA and the application thereof. Students in veterinary science will particularly benefit from such training in preparation of their compulsory community service year after graduating, equipping them to utilise a strengths-focused approach where resources for clinical veterinary practice are often limited.

Training opportunities that can develop a multi-disciplinary approach can furthermore boost veterinary community engagement initiatives. To this end, PRA-training may benefit students in all disciplines, across the various faculties at university level. This can lay a foundation for multi-disciplinary collaboration when undertaking community engagement, or setting out to provide guidance on a specific topic in a community context.

Closely related, I recommend that a set of guidelines for veterinary community engagement be formulated. These guidelines can include the theoretical basis of community development as well as practical guidelines for implementation. Topics can include PRA-principles, following a strengths-focused approach to community development, developing appropriate communication skills, stimulating critical and creative thinking, tools and ideas for PRA-sessions, and providing humane education or guidance. All these aspects should form part of student training programmes where community engagement is envisaged.

6.7.2 Recommendations for practice

In terms of community engagement practice, I recommend that, prior to providing veterinary clinical service and guidance in a developing community, a participatory process be conducted within the community to ascertain prevailing perceptions of health, animal health and animals. By listening to the people on ground level first, practitioners can do informed planning in terms of the best veterinary strategy for the particular community, as human compliance is essential to the success of a veterinary intervention. It needs to be considered that a health strategy for animals can never be separated from the humans who need to implement it.

Similarly, before written communication methods such as pamphlets on veterinary topics are printed and distributed, it is advisable to engage with community members first to ensure that printed educational material will result in effectively communicating the formulated message, and providing the intended guidance and support. The pamphlet that was designed for the Hluvukani community as a result of the PRA-intervention, is attached as Appendix P.

It is important to include members of the community in the implementation of the animal health strategy. Where some community members are already empowered, as in the

case of Hluvukani for example, they can be encouraged and possibly be involved in performing some practical functions such as promoting veterinary services and assisting during vaccination drives. A particular function that may form a central focus area entails the training of community members as, for example, dog training instructors, establishing dog training groups within communities. This can assist state veterinary teams who do vaccination campaigns, in handling dogs with greater ease.

Furthermore, I propose a multidisciplinary approach to veterinary community engagement. Collaboration between veterinary professionals, health professionals, social scientists, social workers and others can enhance the One Health concept in developing communities and promote human, animal and environmental health. PRA sessions can, for example, be facilitated by veterinarians themselves or by other professionals who collaborate. Alternatively, a general strengths-focused community mapping exercise could be done by a community development practitioner, who can then identify possible areas for subsequent veterinary involvement.

With regard to stakeholder involvement in veterinary PRA-based interventions, I propose a once-off participatory engagement with all external stakeholders in order to facilitate permission and access prior to commencement of a broader study or intervention. Stakeholders can include the state veterinary team, non-profit organisations, social workers and health clinic staff, separately or together. The purpose of such an engagement would be to ensure that all external stakeholders understand the nature of a proposed project or research, have the opportunity to provide input and feel valued when assisting with the planning.

6.7.3 Recommendations for further research

Based on the findings I obtained, I recommend further research in the following areas:

- A follow-up comparative study of perceptions of private and public veterinary services in Hluvukani and other similar settings.
- A follow-up case study on the reasons for keeping dogs, challenges associated with dogs and the attitudes to dogs in Hluvukani.
- A comparative study on knowledge and misconceptions relating to rabies and rabies vaccination in Hluvukani and other similar settings.

- A comparative study on the prevalence of practices such as tongue cutting and dog hanging in different settings.
- A case study investigating the impact of humane education as part of a veterinary strategy in Hluvukani or a similar setting.
- A case study of a complete dog population management programme including a “knowledge, attitudes and practices” survey of the community, a PRA-engagement on primary animal health care, and a demographic study of the dog population, in a setting where no or limited prior interventions have occurred.

6.8 CONCLUDING REFLECTIONS

I undertook this master’s study in Education with the purpose of investigating the use of a particular methodology, participatory reflection and action (PRA), within the context of veterinary sciences, when aiming to address the challenge of rabies and rabies awareness in rural communities. As no study that I know of has explored this issue, my study can contribute to effective practice in primary animal health care and more specifically, the application of PRA in veterinary sciences in the field of community engagement.

Based on the findings I obtained, it seems clear that PRA enabled the facilitation of rabies awareness and prevention among this group of participants in Hluvukani. In spite of possible challenges related to sustainability, the methodology was effective and if applied according to its principles in other studies, is likely to address other issues that affect human and animal health.

Possible beneficiaries of veterinary PRA-based community engagement include the communities, the veterinary profession, other stakeholders and collaborators, and animals. A multi-disciplinary effort to address different aspects of human and animal health and well-being simultaneously in a healthy environment, when following a One Health approach, can thus empower the people of South Africa to effect meaningful social changes to the benefit of humans and animals alike.

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Appendix A

DAFF rabies pamphlet

What is rabies?

Rabies is a disease that affects the brain and leads to the death of the person or animal involved.

Symptoms vary widely and may include:

- Behavioural changes
- Aggression
- Salivation
- Paralysis.

RABIES AFFECTS ALL ANIMALS!

Spreading of the disease

The virus occurs in great numbers in the saliva of rabid animals.

CONTACT YOUR VET OR ANIMAL HEALTH TECHNICIAN

How to control rabies

- Vaccination is the only protection.
- **Vaccinate** your dogs and cats. Encourage other people to have their pets vaccinated too.
- Do not allow your pet to roam the streets.

- Report all suspect cases to your nearest state veterinarian, animal health technician or to the police.

NEVER TOUCH OR CARESS A STRANGE, INJURED ANIMAL OR ONE WHICH APPEARS TO BE SICK!

If you get bitten

- Thoroughly disinfect the wound.
- Immediately consult a medical doctor or clinic.
- Contact your nearest state veterinarian or animal health technician.

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or

Stamp

Appendix B

Journal Part 1 Intro and PRA 1

Refer to memory stick (available on request from author quixi.sonntag@up.ac.za)

Appendix C

Journal Part 2 PRA 2

Journal Part 2

PRA session 2

Third site visit 7-11 November

Monday 7 November 2016

Day 1: Tuesday 8 November 2016

Today, the first of three sessions, with no participants having arrived by 10:00. In the end 7 people arrived: PN, DK, TK, EM, SS, CM, SN, and of course PM. KM asked to be excused as his "younger mother" (aunt) had died, and they were preparing for the funeral. SM was not available and L was also at a funeral. RC had gone to Jhb.

Late starts (24)

Challenge researcher. (24)

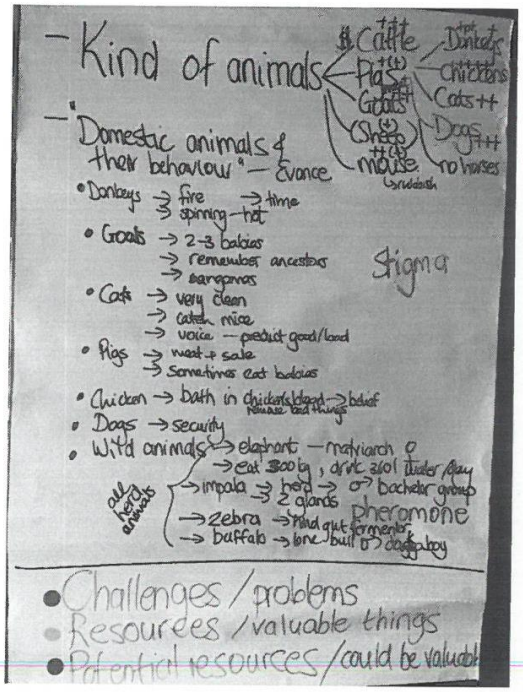
It was a very hot day. As we had started a bit late, I shortened the intended programme and just did a whole group discussion on the animals in Hluvukani. Having asked the participants at the end of the previous session to come back and tell be about the animals in Hluvukani, I asked them for their feedback. This did not elicit any response, but when I started specific questions, the participants started providing information freely. Upon reflection, I realised that rather than ask what they had had learnt in doing their "homework", I should have just started asking questions about the topic under discussion.

PRA - flexibility (22)

PRA - strategy (researcher) (22)

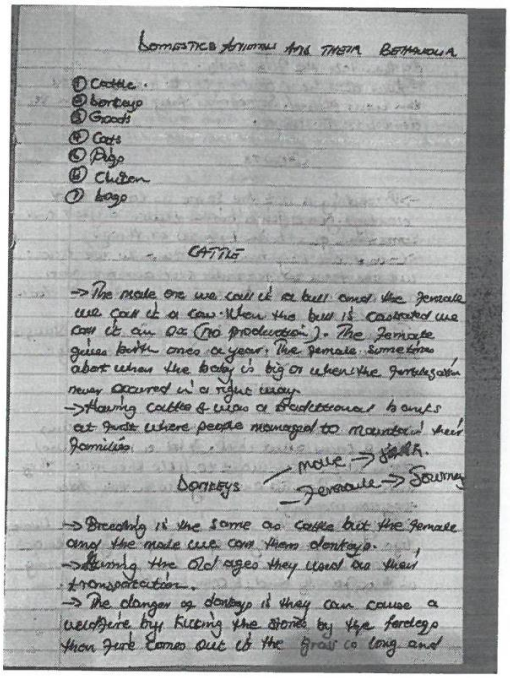
I asked the group about the different animals and more or less how many of each species there were. They told me that chickens were by far the most prolific, followed by cattle and dogs. There were a fair number of goats and cats, quite a few mice, and some donkeys but not many sheep. No horses. I made notes on a green poster of everything that was said.

Animals in H (1)

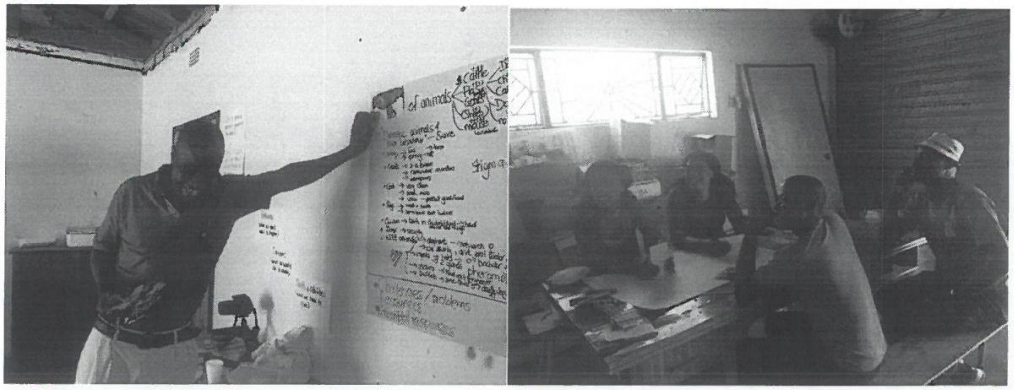


Poster "minutes" of our discussion on animals in Hluvukani

Then EM gave a well-prepared presentation titled "domestic animals and their behaviour" and gave me his notes afterwards. He had clearly taken the task seriously.



Front page of EM's notes on domestic and wild animals.



EM presenting his "homework" and the others listening

laughing - PRA principles 21/22

Next I asked the participants to use the photographs they had taken last time and tell a story about Hluvukani in a poster. They also had to identify challenges, resources and potential resources with different coloured stickers on the posters. I videotaped and audiotaped their reports. As there were only seven participants, I divided them into two groups which they named the Apples and the Bananas.

PRA - active participation 21

Participants preparing the photovoice posters

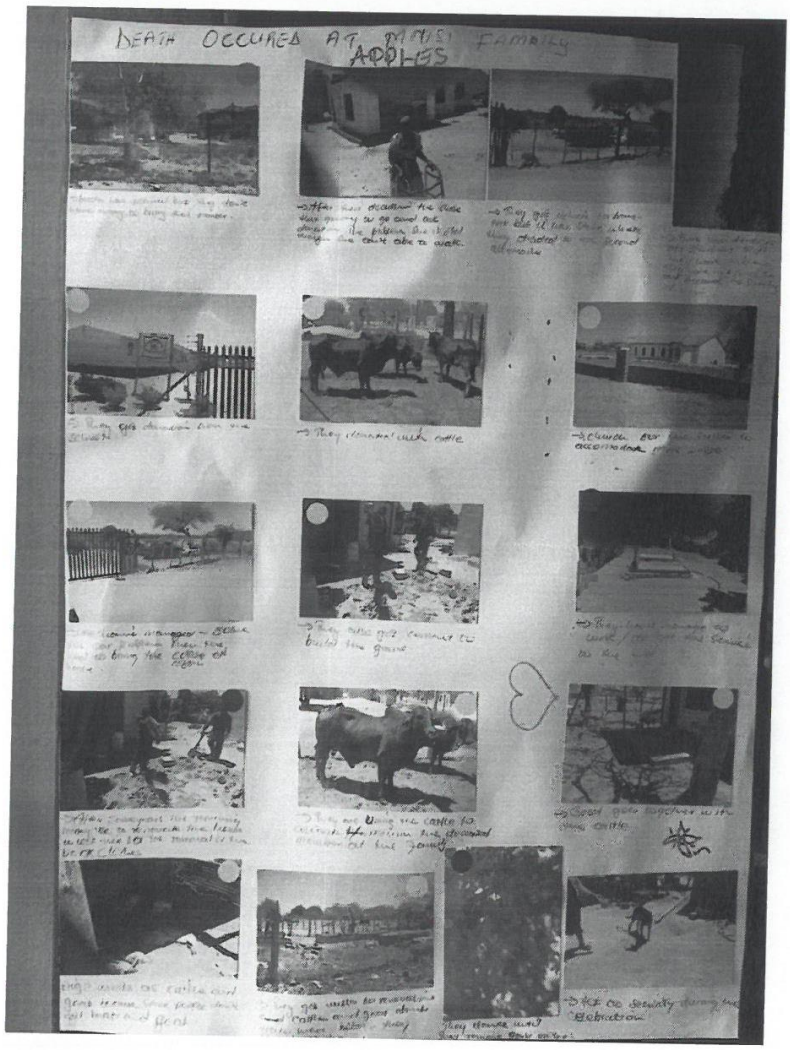
These reports were videotaped and transcribed, what follows here (bracketed) is from my field notes:

Refer to transcript.

The Apples (EM) told us the story of a funeral in the community. "Death occurred at Mnisi Family". There was a thread from the first picture to the last one, telling a story of how the family planned the funeral, encountered several challenges which were addressed and eventually could end the period of mourning. The participants added the stickers indicating resources, challenges and potential resources at the end – all the challenges were in the beginning and then the resources and potential resources were identified towards the end of the story. This is what the poster looked like:

PRA strategy researcher

22



Poster of first group.

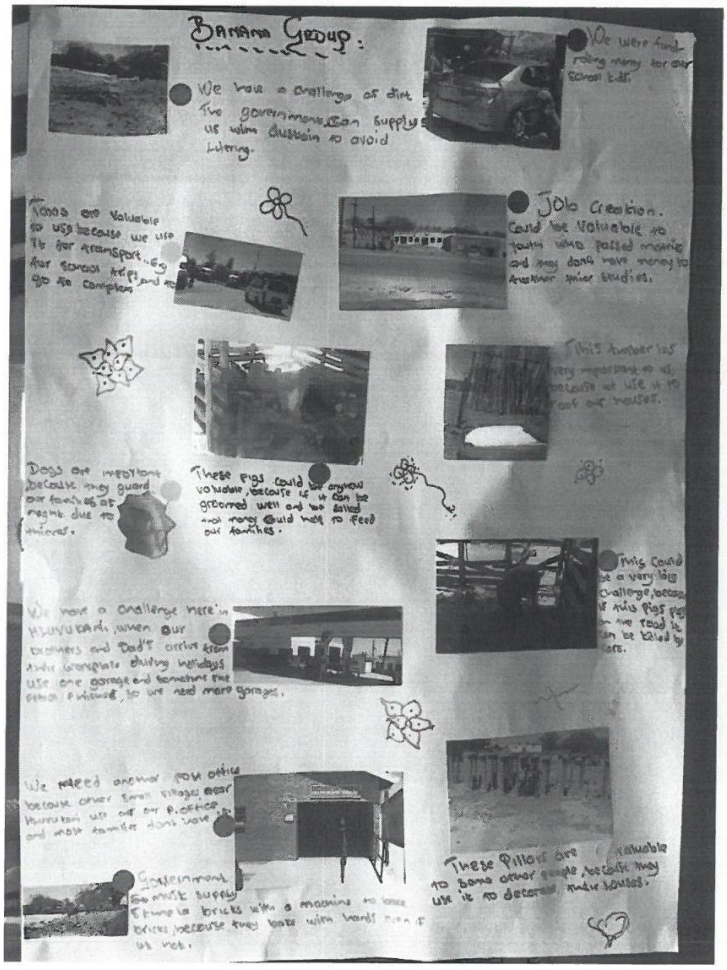
The Apples identified the following resources: The school (gave a donation for the funeral), cattle, goats and pigs (were donated and used for the funeral for meat),water troughs (where the animals could drink before being slaughtered), church (provided additional accommodation), the mechanic (to fix the car), cement (to build the grave). Challenges: Lack of money for funeral, old granny (too slow to walk) and vehicle that got stuck. Potential resources: The finished grave, money that is left over can be used to renovate the house to be ready for the end of the mourning celebration ("to remove the black clothes"), dogs (act as security during the celebration).

Refer to transcript

[The Bananas, represented by DK, took each picture and assigned a sticker / colour to it, explaining in the caption what it meant. This was their poster:

PRA strat - participants

21



The second group's poster

Littering, pigs not properly confined, lack of petrol during holidays, too few post offices and lack of bricks were identified as challenges. Resources were taxis, timber (for roofs), dogs (for security), stone pillars (to decorate houses). Washing cars to raise money for school kids, the new shopping centre being built (job creation) and pigs (source of income) were identified as potential resources.]

At the end of the session after videotaping, PM mentioned that cattle dung can be used as fuel for fire and that they should think about recycling. EM asked if I would help them spread this to the community. I answered yes, but I need their help to help them do it. PM also mentioned basic hygiene, washing when having been to the toilet. Be creative (in the sense of resources / potential resources). EM came afterwards and told me that he would go all the way with me through this project.

When reflecting with PM afterwards, he said the he feels the group is participating well and he tries to motivate them.

Upon reflecting after this meeting, in preparation for the next meeting, I identified the following concerns:

- I'm not sure whether the participants are ready for focusing on animal health when they have so many pressing social issues. They seemed to find it difficult to identify animal challenges and resources. "Government must" (solve problems) came up a few times. Dogs are kept just for security.
- I asked them to find out all they can about rabies this afternoon and come tell me tomorrow. I hope that the link to human health will get them excited about rabies.
- Maybe we should first focus on other social issues?
- I sense a lack of creative thinking and need to think of ways to address this.
- Participatory means I cannot force my own ideas on them i.e. that we must do something for rabies control. People must be passionate about what they do otherwise it will fail.
- EM seems to be taking the lead with the Apple group. I had told PM that he could join the Banana group for the pic poster exercise (to even out the

numbers), but perhaps because these two gentlemen are too influential and may be pushing the others in one direction?

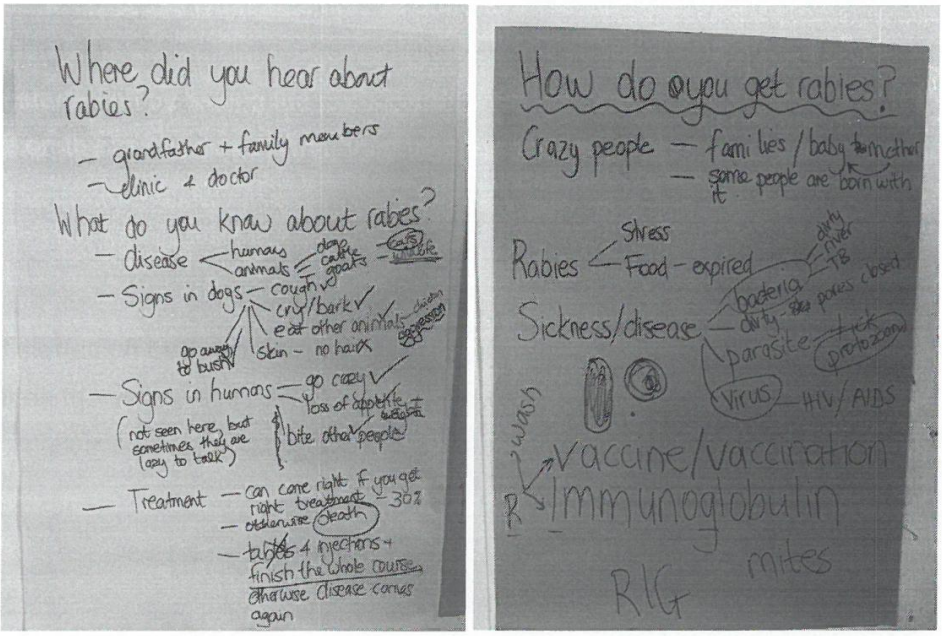
Dominant member (37)
Role of interpreter (19)

Day 2: Wednesday 9 November

The same 7 participants as yesterday arrived again. Programme for the day:

- Whole group discussion on rabies
- Look at rabies educational material
- Select the best examples
- Discuss what else can be done to increase rabies awareness

I started off by asking the participants what they knew about rabies, and then writing it on the yellow poster first, then also the blue poster.



Poster "minutes" of a discussion on rabies

The black writing on the yellow poster is what I added later on when I provided some information on rabies. The blue poster contains a record of the initial discussion at the top, and the bottom half were notes I made when I was informing them about rabies.

Interesting things that emanated from this discussion, as noted in my field notes:

Participants identified the following signs of rabies in dogs:

- Coughing – possible
- Crying / barking – yes
- Eat other animals e.g. chicken – possible (aggr)
- Dogs that have rabies go away to the bush – yes
- They lose the hair on the skin (alopecia) – no

Knowledge of rabies (5)
Misconceptions (2)

SN explained the following belief: When a dog steals your chickens or eggs, if you throw fishbones at it, it will start losing its hair until there is no hair left and the skin gets crusty and the dog dies. I responded by explaining about skin mites causing mange.

Belief (2)

Participants identified the following signs of rabies in humans

- People go crazy – yes
- Appetite and weight loss – no
- Bite other people – possible

Knowledge of rabies (5)
Misconceptions (2)

Treatment for rabies according to participants:

- 30% can come right with the correct treatment – no
- Death – yes
- Tablets / injections – you must finish the whole course – no

Knowledge of rabies (5)
Misconceptions (2)

Transmission of rabies can happen in the following ways, according to participants:

- From mother to child – no
- Genetics – no
- Some people are born with it – no
- If you eat expired food – no
- Stress – no

Knowledge of rabies (5)
Misconceptions (2)

I then told the participants what I know about rabies, and showed them videos of people and dogs with rabies. I tried to keep it as easy to understand as possible and only stuck to basic information. I asked if they would like to look through a microscope at the animal clinic (as we were talking of how certain types of

PRA strat (22)

organisms could be seen under a microscope). They were very keen so I undertook to arrange a visit to the animal clinic the next day.

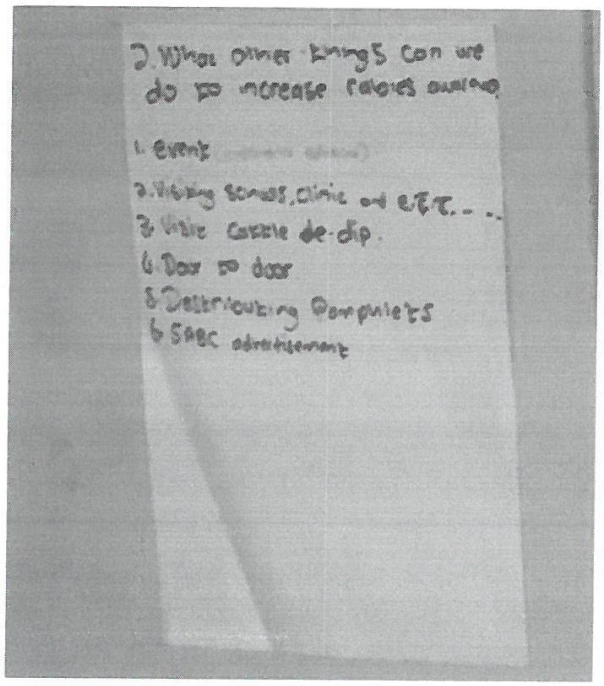
The last task was to evaluate various rabies awareness publications / brochures. I asked them to answer the following questions individually:

1. Which pamphlets or brochures do you think are the best? Rate from 1-3 and give reasons for your choices.
2. What other ideas do you have to increase rabies awareness?

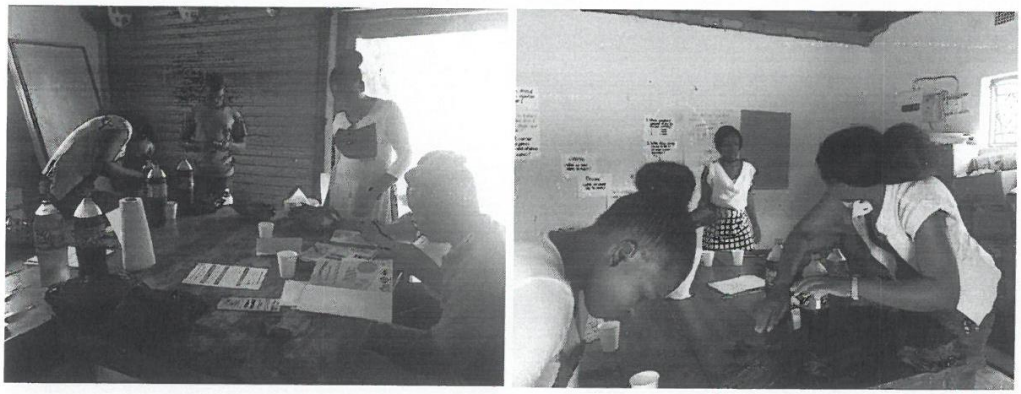
There were 14 different pamphlets/brochures and I numbered them from 1 to 14. The participants spent a bit of time looking at everything and reading some, but I think it was too much, as they could not come to a conclusion as to which were the most appropriate materials. I was surprised when EM read from one pamphlet and said something to the effect of "but this isn't right!" when in fact what he had read was correct. (It was a very basic fact about rabies). The others corrected him though. The participants had a look at the material but then delegated EM to take them all home and then decide which are the best. He was to come back the next morning and tell us what he had decided.

In answer to the second question, they suggested the following:

- Organise a community event
- Visit schools & creches
- Visit clinics
- Visit the cattle dip tanks
- Go door to door
- Distribute pamphlets
- SABC advertisement



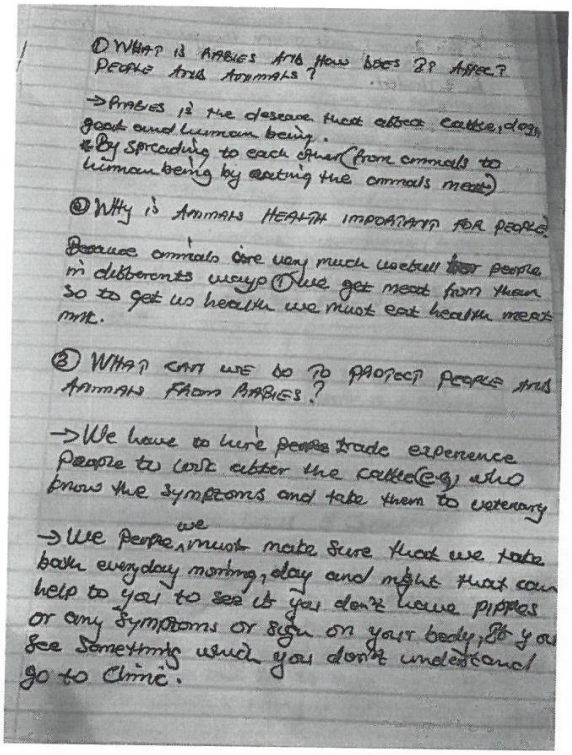
Suggestions for rabies awareness activities



Getting ready for lunch

EM handed me a written "assignment" with his answers regarding the guiding questions of which there were always posters on the walls. The assignment also contains information about resources, challenges and potential resources, relating to yesterday's discussions.

Refer to document



① WHAT IS RABIES AND HOW DOES IT AFFECT PEOPLE AND ANIMALS?

→ RABIES IS THE DISEASE THAT AFFECT CATTLE, DOGS, GOATS AND HUMAN BEING.
* BY SPREADING TO EACH OTHER (FROM ANIMALS TO HUMAN BEING BY EATING THE ANIMALS MEAT)

② WHY IS ANIMALS HEALTH IMPORTANT FOR PEOPLE

BECAUSE ANIMALS ARE VERY MUCH USEFULL FOR PEOPLE IN DIFFERENTS WAYS WE GET MEAT FROM THEM SO TO GET US HEALTH WE MUST EAT HEALTH MEAT MILK.

③ WHAT CAN WE DO TO PROTECT PEOPLE AND ANIMALS FROM RABIES?

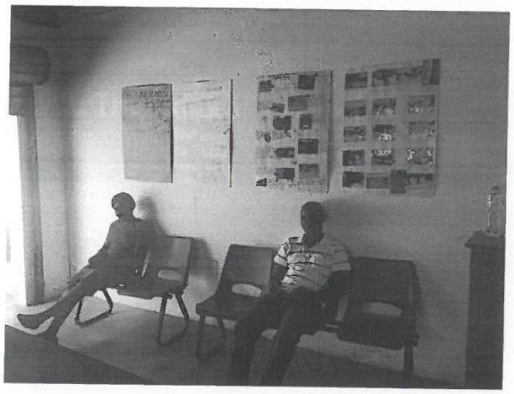
→ WE HAVE TO TEACH PEOPLE TRADE EXPERIENCE PEOPLE TO LOOK AFTER THE CATTLE (E.G) WHO KNOW THE SYMPTOMS AND TAKE THEM TO VETERARY

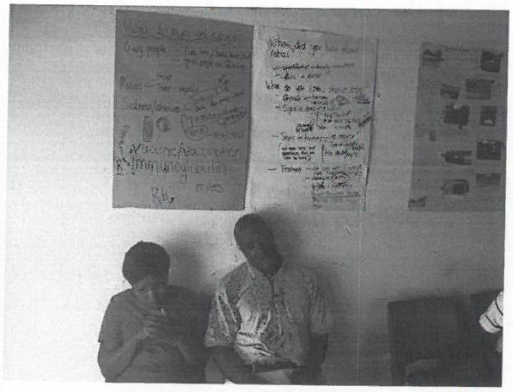
→ WE PEOPLE, WE MUST MAKE SURE THAT WE TAKE BATH EVERYDAY MORNING, EDAY AND NIGHT THAT CAN HELP TO YOU TO SEE IF YOU DON'T HAVE PIMPLES OR ANY SYMPTOMS OR SIGN ON YOUR BODY, IF YOU SEE SOMETHING WHICH YOU DON'T UNDERSTAND GO TO CLINIC.

See separate document for analysis

EM's written assignment

Day 3: Thursday 10 November





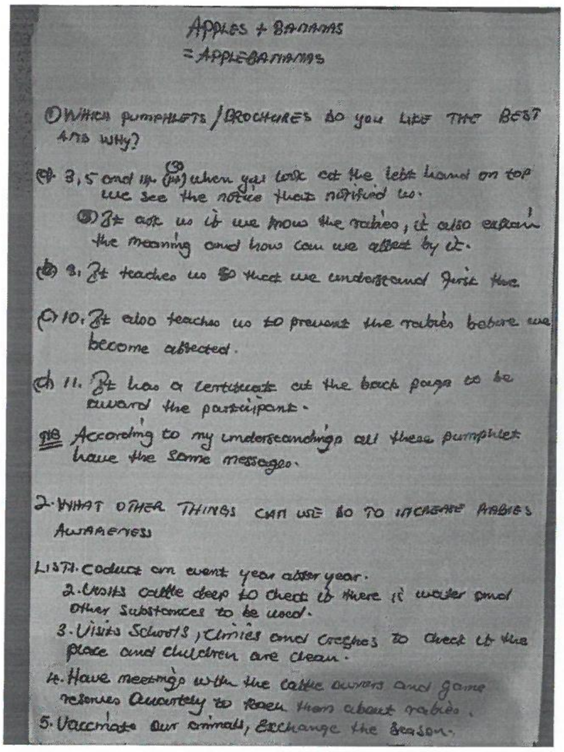
Some participants waiting for the others to arrive

PRA strat. (22)

Today I invited PM to also take some photographs. We started off in one group with feedback from EM, as requested the previous day by the rest of the participants. He was happy to share his written "assignment", which he handed to me, in which he answered both questions from the day before.

PRA strat - participant (21)

Dominant member (37)



APPLES + BANANAS
= APPLEBANANAS

1) WHICH PAMPHLETS / BROCHURES DO YOU LIKE THE BEST AND WHY?

(a) 3, 5 and 14 (3) when you look at the left hand on top we see the notice that notified us.
(5) It ask us if we know the rabies, it also explain the meaning and how can we affect by it.
(b) 8: It teaches us so that we understand just the
(c) 10: It also teaches us to prevent the rabies before we become affected.
(d) 11. It has a certificate at the back page to be award the participant.
According to my understandings all these pamphlet have the same messages.

2. WHAT OTHER THINGS CAN USE DO TO INCREASE RABIES AWARENESS

LIST 1. Conduct an event year after year.
2. Visits cattle deep to check if there is water and other substances to be used.
3. Visits Schools, Clinics and Creches to check if the place and children are clean.
4. Have meetings with the cattle owners and game reserves Quarterly to teach them about rabies.
5. Vaccinate our animals, Exchange the Season.

See separate document.

EM's written comments on the educational material as well as suggestions for rabies awareness

His comments in answer to my question on the brochures were:

See separate document also

- 3, 5 and 14 were his favourites
- On 3 there is a clear notice saying "Beware! Rabies is a killer disease" — Preference for negative framing (28) (duplication)
- On 5, it asks if we know rabies "do you know about rabies?" and it explains the meaning and how we can be affected by it
- No 8 teaches us understanding "Understanding rabies"
- No 11 has a certificate at the back that can be awarded to the participant — Interactive aspect of brochure (28) (duplication)

He felt that all the materials had the same message.

He went on to detail his answer to the second question:

- Conduct an annual event
- Visit the cattle dip to check if everything is right – if the cattle are healthy, the people will be too
- Visits to schools and creches – general hygiene awareness

See separate document

- Meeting with game reserves and farmers to educate about diseases
- Vaccinate twice a year

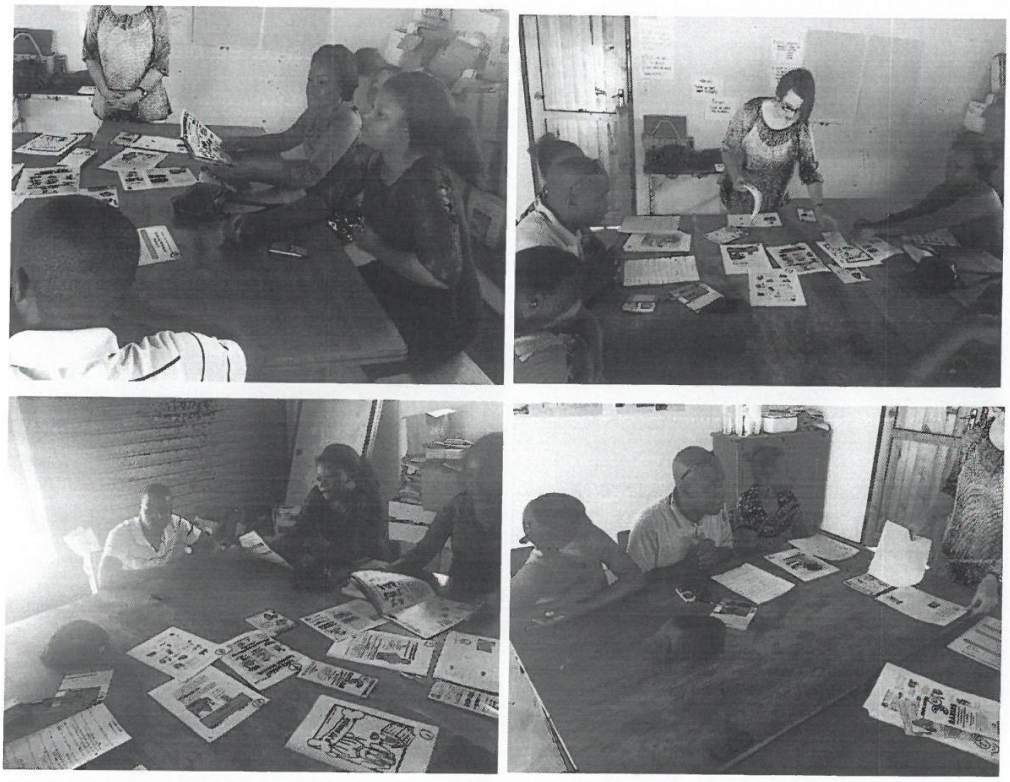
EM also had a written proposal for an "event planning committee" which he handed to me and briefly explained.

We then had a short discussion on the educational material and came to the following conclusions:

- Educational material on rabies for Hluvukani should be in Shangaan and English
- It should be colourful and easy to read (font not too small)
- Brochure format like no 10
- The GARC booklet was popular

Rabies message (28)

PRA outcomes (22)



Facilitator standing in front of "class" (22) not PRA

Participants engaging with material - PRA (22)

Participants considering the pros and cons of existing educational material

I then asked a few feedback questions to ensure that they had understood the important basics about rabies and rabies control. Generally, there was a good

PRA (22)

understanding. DK, one of the young female participants, really impressed me as she knew all the answers.

PRA-learning (2) Rabies knowledge (5)

I noted the following answers that were given to questions:

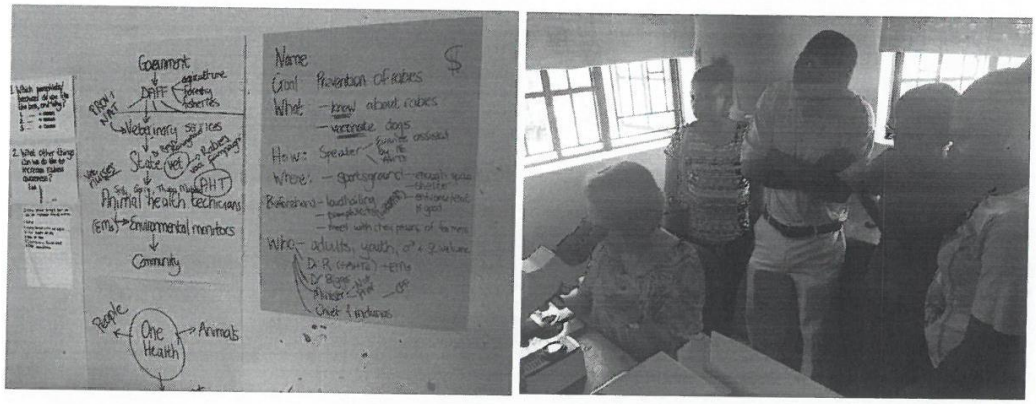
- How do you get rabies? A bite from any mammal that has rabies
- Why do people not vaccinate their dogs?
  - It kills dogs
  - It reduces the speed of hunting

Rabies knowledge (5) Beliefs/misconceptions (2)

PM explained the concept of One Health. I also explained the structure of veterinary services and that the AHTs must be informed when a dog is suspected of having rabies. This was noted on the pink poster.

Interpreter as participant + facilitator (19)

We then went to the clinic nextdoor to look under the microscope where I showed them a blood smear and some worm ova.



Poster "minutes" of our discussions (left) and visiting the animal clinic (right)

On our return, we discussed all the options for what can be done for rabies awareness. We discussed the main proposal, a public event, briefly and I recorded everything on the green poster (see photograph above).

In conclusion, I asked each participant what they had learned in the past 3 days and this is a summary of their responses:

- Learnt about rabies and how to prevent it
- Must wash wound for 10-15 minutes

Rabies knowledge (5)

- Signs of rabies in people e.g. behavioural changes, videos

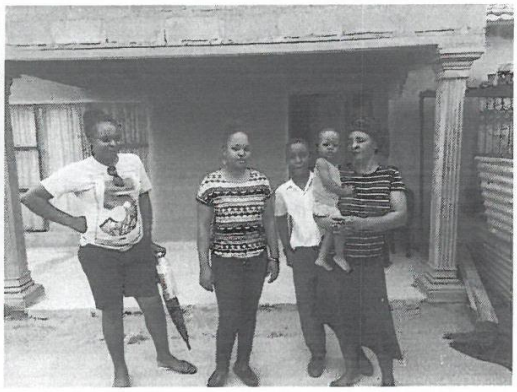
What would you like to learn more about or do?

- Learn about health and diseases
- Organise an event
- Meet the veterinary team
- Go on a rabies campaign

We agreed to meet again in the week of 9 January.

Participants listening intently

Afterwards I gave TK, SN and SN's son a lift home. I found SN's "garage" for the blue bakkie very interesting (see photo below). Her mother came with the baby and they all wanted a photograph.



SN's garage for her car and a group photograph

Solutions

Reflection after Day 3:

I had mixed feelings about this week. I felt a bit frustrated because I was unable to get to the point I wanted to reach, and have a feeling I became too much of a teacher and lost the participatory spirit in the process. I also felt that I had perhaps been biased, for example I didn't think that the event idea was as good as some of the other ideas. I realised that I needed to be completely open-minded and go with the flow, not enforce my own ideas. I was also not sure that I should have responded the way I did to SN's story about the fish bones and dogs getting mange, by "lecturing" about mange. I found it really difficult to know when to stop listening and start saying something. I was concerned that if it appeared as if I didn't believe what I was told, that it may affect the trust relationship between us.

I felt that the feedback on the educational material was superficial – I'm not sure that this group really has the ability to judge the material in detail and it is perhaps asking too much. Nevertheless, we came down to two "products" they all really liked.

Interestingly, the one ranked no 1 by EM, did not feature in the end. I did ask him why he picked that on and he said it had good content. In retrospect, I'm also not sure whether he mentioned his first three choices in numerical order or in order of preference.

With the lab visit I wish I had been better prepared for example to show them something visible to the eye like a hair first, so that they can get an idea of the magnification concept. When I showed them red blood cells and white blood cells they were certainly impressed, also with the worm ova. But I think it's a big paradigm shift to think at that small scale.

EM had prepared a whole plan for planning of the event. I have a feeling that the others are going along with it because they trust him (he is a past CDF chairman) but I wonder if it doesn't in a sense suppress their own creative thinking. EM will think of a name for the event.

Postscript: EM phoned me in early December with a report back of how his planning for the event is going – we must decide on when to have the planning meeting when I go back in January – and his proposed name for the event is "One Health and Livestock Theft Awareness Campaign". I so appreciate his initiative, but it doesn't seem that he quite makes the link between rabies and the effective control measures for it. He said that he only still needed help with the vision and mission and I promised to give it some thought.

Misconceived Link to rabies (2) (5)

Ideas such as visiting schools were not explored much more e.g. more detail on exactly what would be done (e.g. drama / teaching teachers etc). The general theme of health and hygiene was mentioned and not rabies specifically.

Lack of focus on rabies (6)

Clearly the way we (vets) look at disease is very different to the participants' views. I'd like to learn more about this. Perhaps I should find out more about indigenous beliefs and knowledge before going on to more "teaching".

Perceptions on health (2)

Disease is viewed with a mixture of spirituality and tradition.

Perceptions on health (2)

This group of people is hungry for knowledge. They want to learn more.

PRA-learning (21)

Concerning my worry about whether I should have "taught" about rabies on Day 2 this week: I did first engage in questions, and I am reminded of the words of Heron et al. about sometimes there being a need for "hierarchy" in participatory work. Or does the participatory approach completely exclude this kind of interaction? I think it is flexible.

Limitations Ch-6.

EM told me privately that he intended to be part of this project to the very end.

I did not audio-visually record the events of Days 2 & 3 as I had for the first day. I think I was a bit overwhelmed and not sure how and whether the technology would work.

Challenge-researcher (25)

Since the start of the project, two participants have individually asked me for money and have accepted my explanation that I could not do so from an ethical perspective

Ethical considerations (25)

as it could then be said that it influenced my findings, and also I was self-funding the project at this stage hence did not have spare money available.

Meeting with RF in the week of 5 December

I recounted the main aspects of my engagements so far and shared some of my concerns. Her advice was as follows:

- Go back a step to make them feel again that they are the masters / experts
- They must realise that they can speak with authority
- Let them discuss things they know about
- They are knowledgeable!
- This is also linked to information sharing
- Take EM out of the groupwork scenario by giving him a specific task e.g. discussing the vision and mission
- Subtle creation of awareness
- Intro: Great campaign! Needs time to plan [mention World Rabies Day on 28 Sept]
- I'd like to get to know you better, will also teach you something
- You are firsts in this community!
- Let's focus on one thing first – can speak on the other topic later
- Give a role to each participant
- Think of a slogan e.g. don't procrastinate, vaccinate!
- Worry about sustainability later

PRA methods 4 strategies (22)

Appendix D

Journal Part 3 PRA 3

Refer to memory stick (available on request from author quixi.sonntag@up.ac.za)

Appendix E

Journal Part 4 PRA 4

Refer to memory stick (available on request from author quixi.sonntag@up.ac.za)

Appendix F

Journal Part 5 PRA 5

Refer to memory stick (available on request from author quixi.sonntag@up.ac.za)

Appendix G

Journal Part 6 PRA 6&7

Refer to memory stick (available on request from author quixi.sonntag@up.ac.za)

Appendix H

Audio-visual transcript (pp. 8-10)

QS: Also the human behaviour to not just throw things around – maybe, maybe then it's not going to be so dirty anymore - if people can change the way they think about litter .

PM: For some people it's not going to be easy like if maybe I'm walking from the shop there and I'm going to my house there, it's like 5km away from the shop, holding an empty can in my hands whilst it's got nothing inside I cannot afford while I'm carrying some other stuff in my hand because I have my own pit at my house, I need to throw it away, I have got the right to throw it away but I see I am littering, but if there was some dustbin around [inauadible]

need for dustbins - ~~causes~~ lack of services. (12)

QS: Mmm, OK.

4. Transcript: Video 11 Jan 1 (Ideas to improve Hluvukani)

KM: Avuxeni.

Voice: Ahe

QS:Avuxeni

KM: Avuxeni. [speaks to someone in the audience in Shangaan]. It was an idea, ne.

QS: Yes

KM: So those ideas, ne, ja. This is the one that we wrote as a group. Soccer field where youngers can play. [Inaudible] We need some sort of a maybe a stadium.

~~asset~~ Currently a need ~~idea~~ the (8)

QS: So…

Voice: [Inaudible]

KM: Madam, shhh. OK, ja. So, we need a stadium so that maybe in future, our childen, like my boy, he could play soccer there. Ja, and those ones, netball and rugby, so that they can avoid crime, even when they come home from school, they can rest [Inaudible].

(10) concern for children's well-being/ development.

↳ solution to crime (9)

QS: OK

KM: So supporting teacher: Ja. We want one of our schools in this community maybe to have something like [Shangaan word] Mongena [?] High School, once in a lifetime, they have ever done some distincitions, outsandindg distinctions, so we have to support them by helping our children with their homeworks and influence them to read and how to write. So restaurant: If [inaudible] the students I don't know it is expensive but if you create jobs for us in terms of if by the starting of buildings there will be jobs and those who work to be a waiter they can get jobs too. So that's it. So hotels, ja hotels. Not the one that's over there [gestures]. To build a hotel so that it can welcome guests, so if they come from [gestures "far away" or "other place']…

PM: [inaudible] need the toilet

…ja, so they can get a place to sleep [inaudible]. House – pipe. House pipe, pipe: House [laughter]. OK, house pipe, ne.

QS: OK, is that a water pipe?

KM: Ja, water pipe. In this community we need a pipe I mean house to house pipe. Then the granny won't take a wheelbarrow to go fetch water far away. Can just take one litre and [inaudible] just bend low and [inaudible] like grannies used to do that. [inaudible]. Thank you very much.

QS: OK, great. Thank you, K.

KM: Can I remove my belongings [indicating poster].

QS: No, no, that must stay, thank you. Uhm, just from the other group, do you have questions for K? What do you think about the proposals, do you have any questions to ask this group?

SN: No questions

KM: [Shangaan word] the students, the supporting teachers [Shangaan word], restaurant, [Shangaan word] hotels, pipes.

QS: Can I ask you something?

KM: Yes

QS: They have very great ideas. I can see how they are going to make a big difference. But how are you as a group going to be able to do all of that or one of those things?

KM: Eish…

DK: Can I answer?

QS: Yes please, D.

DK: Our pick number 2, supporting teachers – maybe a a group, after school, we have some of childrens, help them do their homeworks, and influence them to work and study hard.

solution-focused (can do attitude) 10 9 community-based support

QS: OK, that makes sense. Yes, OK.

KM: I'll take this one, ne.

QS: The restaurant, yes, OK.

KM: We'll maybe just have to find a place, you know, a bigger one, to that place I know there are some of the investors who maybe like to invest you know.

9 solution-focused

QS: OK, so you need to find an investor, OK.

KM: An investor, if I manage to build a hall, a smallanyana hall, [inaudible].

QS: OK, great. Thank you, excellent, well done.

5. Transcript: Video 11 Jan 2 (Ideas for improving Hluvukani)

Appendix I

Written documents of participant (pp. 6-7)

8/11/16 (6)

① WHAT IS RABIES AND HOW DOES IT AFFECT PEOPLE AND ANIMALS?

→ RABIES is the desease that affect cattle, dog goat and human being.
* By spreading to each other (from animals to human being by eating the animals meat)

Miscanception (2)

② Why is ANIMALS HEALTH IMPORTANT FOR PEOPLE

Role of animals (1)

Because animals are very much useful for people in different ways ① we get meat from them so to get us health we must eat health meat.

Awareness of One Health / link between human & animal health (4) (38)

③ WHAT CAN WE DO TO PROTECT PEOPLE AND ANIMALS FROM RABIES?

→ We have to ~~ture people~~ trade experience people to visit either the cattle (e.g.) who know the symptoms and take them to veterinary

Miscanception (2)

→ We people, we must make sure that we take bath everyday morning, day and night that can help to you to see if you don't have pipples or any symptoms or sign on your body, If you see something which you don't understand go to clinic.

Awareness of general health (4)
Miscanception (2)

8/11/16 (7)

→ The farmers must groupe themselves and form forum and puts some laws about the cattle to be followed. Misconception (2)

Appendix J

Certificate of participation

Certificate of participation to

for participating in the research project
"Utilising participatory reflection and action to facilitate rabies control in a rural community"
from
October 2016 to September 2017,
and for being a
founder member of the Hluvukani Rabies Fighters

Dr Quixi Tsakani Sonntag
Faculty of Veterinary Science

Date

Dr Jacques van Rooyen
Mnisi Community Programme

HRF
HLUVUKANI RABIES FIGHTERS

Faculty of Veterinary Science

Appendix K

Summary of data analysis process

1

Data analysis process explained

Step 1: Coding the data

Relevant sections of text were underlined and a code (label) written in the margin of the raw data.

See Appendix L1 and L2 (two samples of coded data).

Step 2: Identifying categories – codes to categories

Categories were named based on codes, followed by listing the categories.

Table 1: List of codes / categories (n=39)

1	Role & uses of dogs in Hluvukani
2	Beliefs/misconceptions about animals/animal health/health in general
3	Practices relating to animals/animal husbandry
4	Knowledge of animal health & related services
5	Knowledge of rabies
6	Importance of rabies/animal health
7	Community assets
8	Community challenges/needs/lack of services
9	Community solutions
10	Sense of community
11	Participant assets
12	Dependence on external actors/expectations
13	Participant challenges
14	Participants solutions
15	Miscommunication/misunderstandings
16	Participant benefits/empowerment/growth
17	Emotional expression & concern for others
18	Participants showing support for each other
19	Role of interpreter as participant and motivator
20	Participants taking initiative, ownership, making commitments
21	PRA – participant strategies
22	PRA – researcher strategies

23	PRA – learning challenges
24	Late starts/non-attendance
25	Researcher concerns/practical challenges
26	Stakeholder perceptions
27	Researcher doubt
28	Rabies message/framing
29	Traditional healers/sangomas
30	Researcher preconception
31	Attitudes to animals
32	Fear/shyness/lack of self-confidence of participants
33	View of/relationship with white people
34	Questioning traditional beliefs
35	Participant interaction – lack of teamwork, conflict
36	Participants showing respect, acting responsibly
37	One participant taking initiative/responsibility
38	One Health
39	Power relationships

Step 3: Mark each code with a category number

Each code in the data was marked with the relevant category number. One code could be in more than one category.

Refer to Appendix L1 and L2 – the numbers in green are the category numbers assigned to each code.

Step 4: Populate categories with data

A table was created and all the coded excerpts were copied and pasted into the relevant categories in the table. See Appendix K2.

Step 5: Refine categories

Firstly, the raw data was re-arranged as follows:

- Duplications reduced
- Excerpts in some categories re-organised into different categories

Then the categories were reconsidered:

The following categories were re-named as follows:

- 06 'Importance of rabies'
- 15 'Miscommunication'
- 17 'Participants supporting community'
- 16 'Participant benefits'
- 22 'PRA principles & strategies'
- 25 'PRA challenges'
- 30 'Researcher perspective'
- 32 'Fearfulness of participants'
- 35 'Participant interaction'

The following categories were merged:

- Merged 1, 3 and 31 and divided into two new categories 'Role of dogs' (1) and "Role of other species' (3)
- Merged 2 and 4 as 'Knowledge of health, animal health and veterinary services' (2)
- Merged 12 & 8 as 'Community challenges' (8)
- Merged 7, 9, 10 & 11 as 'Community strengths' (7)
- Merged 33 & 39 as 'Power relationships' (33)
- Merged 23, 24 & 25 as 'PRA challenges' (25)
- Merged 14, 20 and 36 to 'Participants taking action' (20)
- Merged 18 & 21 to "Participant strategies' (21)
- Merged 19 & 37 to 'Participant roles' (19)
- Merged 29 & 34 as 'Perceptions about traditional healers' (29)

This process gave rise to a new list of categories.

Table 2: List of refined categories (n=26)

1	Role of dogs
3	Role of other species
2	Knowledge of health, animal health & veterinary services
5	Knowledge of rabies
6	Importance of rabies
7	Community strengths
8	Community challenges
13	Participant challenges
15	Miscommunication
16	Participant benefits
17	Participants supporting community
19	Participant roles

20	Participants taking action
21	PRA – participant strategies
22	PRA – principles & strategies
25	PRA challenges
26	Stakeholder perceptions
27	Researcher doubt
28	Rabies message framing
29	Perceptions about traditional healers
30	Researcher perspective
31	Attitudes to animals
32	Fearfulness of participants
33	Power relationships
35	Participant interaction
38	One Health

Step 6: Categories to themes

The next step was to group together similar categories into themes, guided by the research questions.

Table 2: Categories (n=26) re-arranged to align with research questions

A. Role of animals in Hluvukani (secondary research question 1)	
1	Role of dogs in Hluvukani
3	Role of other species in Hluvukani
B. Knowledge & practices relating to health, animal health and rabies (secondary research question 2)	
2	Knowledge of health, animal health and veterinary services
29	Perceptions about traditional healers
5	Knowledge of rabies
C. Community (secondary research question 3)	
7	Community strengths
8	Community challenges
D. PRA – challenges (secondary research question 4)	

Participant-related	
13	Participant challenges
32	Fearfulness of participants
35	Participant interaction
33	Power relationships
Process-related	
15	Miscommunication
25	PRA - challenges
27	Researcher doubt
Stakeholder-related	
26	Stakeholder perceptions
E. PRA – success (secondary research question 5)	
Benefits / changes	
16	Participant benefits
17	Participants supporting community
6	Importance of rabies
28	Rabies message/framing
31	Attitudes to animals
30	Researcher perspective
38	One Health
How was success achieved?	
21	PRA – participant strategies
20	Participants taking action
19	Participant roles
22	PRA – principles & methods

Step 7: Refine themes – develop sub-themes

Themes and sub-themes were developed and refined.

Table 3: Themes developed into sub-themes

THEMES	
Theme 1: Participants' initial perceptions on human and animal health and domestic animals	
1.1	Perceptions about human and animal health in Hluvukani
1.2	Perceptions about domestic animals in general
1.3	Perceptions relating to dogs in particular
1.4	Perceptions relating to rabies
Theme 2: Community context for animal health	
2.1	Community challenges
2.2	Community strengths
2.3	Community assets relating to animal health
Theme 3: Challenges associated with the PRA intervention	
3.1	Participant-related challenges
3.2	Process-related challenges
3.3	Stakeholder-related challenges
Theme 4: Changes in perceptions and actions associated with the intervention	
4.1	Participant transformation: From fear to empowerment
4.2	Rabies knowledge: From ignorance to expert
4.3	Community involvement: From inaction to taking the stick
4.4	Attitudes to animals: From disinterest to empathy
4.5	Researcher transformation: From etic to emic
Theme 5: PRA principles and strategies employed	
5.1	Participant-related factors
5.2	Process-related factors

Step 8: Allocate categories to refined themes

The categories were allocated to sub-themes.

Table 4: Themes and subthemes linked to categories

THEMES		CATEGORIES
Theme 1: Participants' initial perceptions of domestic animals and animal health		
1.1	Perceptions about human and animal health in Hluvukani	02 Knowledge of health, animal health and veterinary services 29 Perceptions about traditional healers
1.2	Perceptions about domestic animals in general	03 Role of other species in Hluvukani
1.3	Perceptions relating to dogs in particular	01 Role of dogs in Hluvukani
1.4	Perceptions relating to rabies	5 Knowledge of rabies
Theme 2: Community context for animal health		
2.1	Community challenges	07 Community challenges
2.2	Community strengths	08 Community strengths
2.3	Community assets related to animal health	7 Community assets 9 Community solutions
Theme 3: Challenges associated with the PRA intervention		
3.1	Participant-related challenges	13 Participant challenges 32 Fearfulness of participants 35 Participant interaction 33 Power relationships
3.2	Process-related challenges	15 Miscommunication 25 PRA challenges 27 Researcher doubt
3.4	Stakeholder-related challenges	26 Stakeholder perceptions
Theme 4: Changes in perceptions and actions associated with the intervention		
4.1	Participant transformation: From fear to empowerment	16 Participant benefits
4.2	Rabies knowledge: From ignorance to expert	6 Importance of rabies 28 Rabies message/framing 38 One Health
4.3	Community involvement: From inaction to taking the stick	17 Participants supporting community
4.4	Attitudes towards animals: From disinterest to empathy	31 Attitudes towards animals
4.5	Researcher transformation: From etic to emic	27 Researcher perspective

Theme 5: PRA principles and strategies employed		
5.1	Participant-related factors	21 PRA participant strategies 20 Participants taking action 19 Participant roles
5.2	Process-related factors	22 PRA principles & methods

Step 9: Re-arrange data according to themes and sub-themes

The categories were then arranged in the order of the themes and sub-themes for ease of writing up the results.

Step 10: Formulate final themes

The final themes and sub-themes were formulated following discussion with my supervisors. In this final round, Theme 5 was incorporated into the other four themes, ending with four main themes and their sub-themes. The raw data was subsequently highlighted with different colours to indicate the four themes.

THEME 1: **Utilising PRA to determine perceptions on human and animal health and domestic animals**
Subtheme 1.1: Perceptions on human and animal health service provision in Hluvukani Subtheme 1.2: Views on domestic animals and their purpose in society Subtheme 1.3: Initial views on rabies and rabies-related aspects
THEME 2: **Utilising PRA to understand the Hluvukani community**
Subtheme 2.1: Challenges faced by the community Subtheme 2.2: Strengths and assets of the community
THEME 3: **Challenges experienced during implementation of the PRA-intervention**
Subtheme 3.1: Limitations in terms of participants' contributions Subtheme 3.2: Challenges related to group dynamics Subtheme 3.3: Challenges related to perceived power differences
THEME 4: **Positive outcomes of the PRA-intervention**
Subtheme 4.1: Increased awareness and knowledge of animals, animal health care and rabies Subtheme 4.2: Increased participation and willingness to take action and promote positive change in the community Subtheme 4.3: Role of individuals in taking the lead and motivating other group members

Appendix L1

Coding and categorisation of data – example from transcript

First analysis – blue pen
Second analysis – pink pen
Categories in green

1. Transcript: Video 8 Nov 1 (Explaining poster with photographs)

EM: This is Mnisi – banana – so we've changed our name – "banana is not our name" - oh is not an apple. The death occurred in this family at first after we had that one of our members died, we gathered, here in order to discuss how to bury our member. So we had a problem - the problem is we don't have money – so during the discussion we came across with an agreement that our granny she has to go and look for donation. But still she had a problem - she don't have legs to go - she uses crutches to go with. And then we decided to get a car as a tpt and this car broke - no petrol. The engine didn't start so we decided to get donkeys [laughter] as our second…

sharing, trusting, emotion (17)
financial need (8)
finding solution (9)
solution-focused (9)
" " (9)

QS: (interjection) Nice story! [laughter]

EM: …alternative. Also the donkeys – only they will go [inaudible] they don't have any use for transport because [inaudible] which means they will not have food to eat but they managed. This granny went go to school [at] Kahlela [inaudible]. There by Kahlela they donate with cattles and also a hall for the service.

need, poverty (8)
finding solutions (9)
community based support. (10)

QS: So what was the cattle doing there?

EM: This cattle?

QS: Ja

EM: We're going to use during the service of burying this….

QS: Oh allright, allright, OK

EM: So by that time we had a problem with the car – we decided to to take this car to the mechanic. So now mehanic had to [inaudible] so that we going to use this transport for the transportation when we bring our deceased at home.

community asset (7)

SN (interjection): [inaudible] to the [inaudible]

EM: ..ja, to the [inaudible]. And also the school donated with this cement to build our grave. So they are busy building the grave, they are finished. We brought him back home. Here we are, now we have already dig the [inaudible]. Everything's OK now. After some years they are making money, we bought another cement, the cow and also the goat to remove the black clothes during the funeral.

community-based support (10)

assets (7) animals for (1) funeral. Cultural function (1) of animals. role of animals as

QS: Why, whose black clothes?

EM: Ja, according to our culture when we have a death at home which means [inaudible] ritually unclean...

PM: In the family actually if the one who passed on, we normally, it's a symbolised of that shows to the other family that there is the one in the family that passed on. So they normally, like if maybe at my house I'm a headman, maybe I passed on. My wife she will be, they will put the black cloth on her for the whole year in order to recognise that this one she's a widow.

QS: Yes, OK, OK, thank you

EM: So this cement is to renovate this house to look neat so that when the members of the family comes here they will find everything in a good way...

solution-focused (9)

QS: Ah, OK

EM: ....so we bought other cows and the goat and the pigs to slaughter them during that service of removing the black clothes and this is then where we will feed this cattle and goat with water.

(1) role of livestock animals - meat (resource)

looking after animals basic needs of animals considered. (3)

SN: [inaudible] also the one who was feeding the [inaudible]

EM: ...ja also the one who renovating this house they got water here to make the cement. And then during this renovation we had this dog as our security so that the people could enjoy nicely without any problem.

solution (9) role of dogs (1)

55 He secured, the people danced until they remove all the grass on top
56 there is no grass now – it is like this place. Thanks a lot.

57 QS: Wait, wait, wait! [laughter] So is the main value of the dog to be
58 security?

59 EM: Yes

60 QS: OK. Anything that the rest of the group wants to add?

61 SN: It's OK

62 QS: Very well done, I'm very impressed! [laughter]

63 **2. Transcript: Video 8 Nov 2**

64 QS: On your poster, you've got the stickers, the different coloured
65 stickers, so uhm I see that there is some potential resources – the blue
66 ones – why did you mark the dog as a blue one, as a potential
67 resource?

68 [General mumbling]

69 SN: Security

70 EM: Ja, because that dog is acting as a security during that time. After
71 the service the dog will go away so we won't use it that day again.
72 Maybe we'll need it another day.

73 QS: Ok, but it is a resource while you're using him?

74 EM: Yes

75 QS: OK, OK. Uhm and the grave, why does has that got a blue sticker?

76 EM: Ah the grave we put a blue sticker because after the service, we
77 can't use it, we can't take that tombstone and put it to another
78 [inaudible]

role of dogs (1)
dog for security
confirmed main role

(15)
meaning of potential resource as temporary resource (misunderstood)
∴ dog = resource when it provides security . .

(15)
meaning of potential resource ↓ can't be re-used terminology misunderstood

QS: Ja OK, OK. And uhm … so all these, you had challenges at the top and then you have the resources – the hall, the cattle, the people building… OK, all right, anything you want to add on your – uhm why you chose those things as resources?

EM: Ja, we got the school there where she got a donation,…

QS: Yes

EM: ..so the children would continue attending school there…

QS: OK

EM: …and there again we got a hall so the community will still use that hall for their celebrations and whatsoever. Ja. So that one has a cattle we're gonna slaughter that one but we will still have another cattle so that they can keep on using it.

resource characterised as being sustainable (7)

cattle as a resource (1)

role of animals.

QS: So that you can keep cattle in stock as well. OK. Thank you.

3. Transcript: Video 8 Nov 3 (Reporting on photo poster).

QS: So now it's the Banana group.

DK: Ja

QS: OK. So can you tell me about your poster?

DK: OK this is not about mainly a story or… but what I just pick resources, challenges and potential resources.

QS: OK, great.

DK: So this one it's a it's a challenge because…

[General mumbling]

DK: We had a challenge of dirt around here because we don't have dustbins on the streets. So the government can supply us with dustbins to [inaudible].

challenge littering (8)

because gov. supplies no dustbins (12)

-dustbins = need.

Appendix L2

Coding and categorisation of data – example from journal

assets (as opposed to cattle), and the c for cent a potential asset, and a snake could represent a challenge.

I asked them (in two groups), to make a list of assets, potential assets and challenges relating to their community / themselves. KM and PN were in one group, and PN had a runny tummy, so wasn't feeling too good. (PN had brought her little sister, C, along). KM was a bit frustrated as he couldn't think of anything – he said although it was a Tuesday and not a Monday, his brain was still not working properly. EM's group was finished fairly quickly with him (EM) giving the most input.

Challenge – participant (13)

Dominant member/ participant strategy (21)

Participants busy identifying resources, potential resources and challenges

CM presented the first group's poster. She was shy, and just read what was on the poster. She had been encouraged by EM to do the speaking. If I had a question, she referred it to EM. They mentioned three assets:

- Salon
- Education
- Sports

(13) Challenge – participant shy (32)

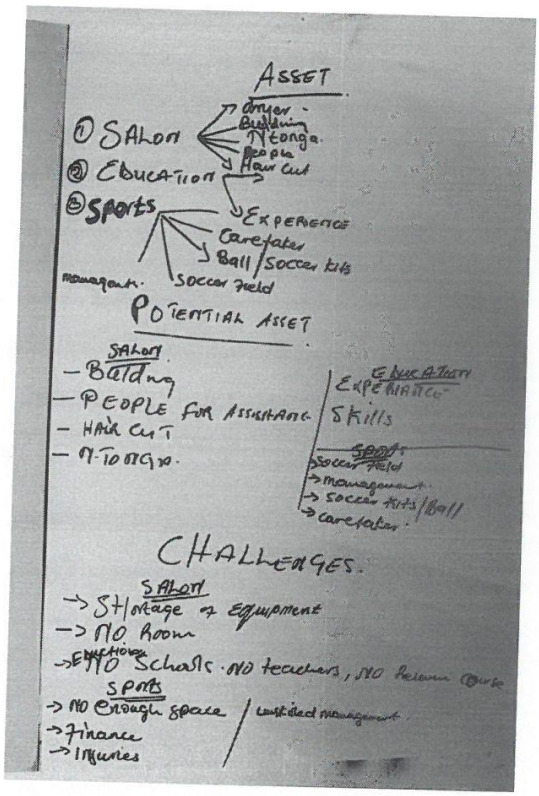
Dominant member actively encouraging other member (18)

Assets: salon etc. community (7)

The salon evidently belongs to EM. The "ntonga" refers to hairdressing equipment like combs, brushes etc. I noticed that they linked the assets, challenges and potential resources to one another, i.e. if they listed a salon as an asset, they would list challenges and potential resources related to that, and not consider different options. I congratulated CM on her performance and she received applause from the audience. (In retrospect, I realised that there had been some misunderstanding of the task in terms of the meaning of assets, potential assets, and challenges).

misunderstanding of task (15)

members supporting each other (21)



Misunderstanding of term "potential asset" (15)

The first group's poster on assets, potential assets and challenges

KM presented the second poster. The assets listed were:

- Internet café*
- Garden
- Church

Assets – community (7)

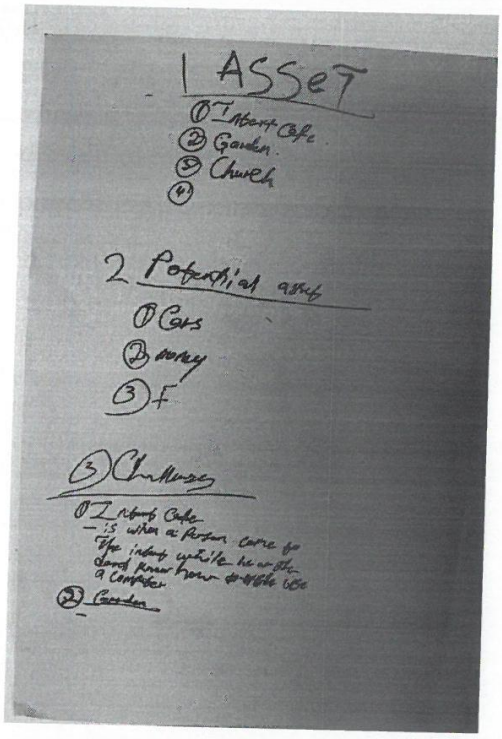
[*I had in fact been to one of the internet café's last time round when I needed to buy paper, and PM took me to this place called "Something Positive" – see photograph below. Here one can print, work on the computer, do applications etc, download forms, photocopy etc. There are other similar places around, and at the library one can get free internet.]

(7) Asset – community

We had a discussion, and the following are notes of the discussion, as KM continued with his presentation:

The garden actually refers to KM's own vegetable garden. He plants a large variety of veggies – spinach, cabbage, lettuce, chillies, sugarcane, carrots etc. He even makes chakalaka. He doesn't sell any of this – he gives it away to people.

Churches: There are many churches, where people go to pray. KM spoke with disdain of the churches who have Nigerian pastors and use Doom spray to "heal" people [he was referring to a recent case of a pastor in Limpopo who had been spraying Doom on people in his church in a healing ceremony.] He says these guys bring evil spirits. He prefers ZCC and it seems that most people around here are members of ZCC.



The second group's poster on assets, potential assets and challenges

Certainly there are mostly Christians and some Muslims, but the latter do not have their own church building. They have a space in the bush (according to EM) where they get together. They pray a lot.

On potential assets, KM said "I don't know what was on my mind...let's skip this", although the poster said "cars, money". [Upon later reflection, it seemed that KM did not understand the meaning of "potential assets".]

Challenges were identified as computer illiteracy and lack of water for the garden as well as sometimes the plants are planted too deep and don't come out. EM added infertile soil and termites.

I asked whether people here make use of distance education and they do.

A so-called "shopping centre" in Hluvukani – this is stationery/printing shop/internet cafe

EM added under potential assets – computer, ink, seeds, manuring, equipment (for the internet café) and for churches – bibles, pastor, congregation, chairs, pulpit. The same misunderstanding regarding the required task as outlined for the previous poster, was evident here.

Unfortunately just I was ready to videotape CM, a message "card full" came up on the camera and I did not have a spare card, so I was unable to do an audio-visual recording. I took written notes as well.

Following this group report back, and taking into account the time that had already elapsed, I decided not to go ahead with a whole new activity but just to sit and ask questions around the gaps in my mind (as I had identified the gaps in my knowledge in preparation for this week's session). This discussion is documented in my handwritten field notes and reproduced here:

I started by asking about sangomas and was corrected by PM who said the word "sangoma" had bad connotations so they preferred to refer to traditional healers (TH). It seems that the younger people in general do not make use of THs much. When a problem appears not to be a directly physical issue, people tend to consult the THs. For example, they believe that, if a child is crying and the clinic does not find any reason, the child may be bewitched. In such a case, they would seek the help of a traditional healer. Very often simply knowing what is wrong (e.g. the ancestors are telling you this or that), fixes the problem.

I commented that a TH is a bit like a psychologist sometimes – they make you feel better without doing anything in particular, and there was general agreement with this sentiment. Participants also stated that THs can also tell you about the future, and that some people go to the church for healing. Pastors are prophets. THs can now be registered. They are basically doctors. Witchcraft comes into play when people have certain symptoms, or if people die in an unusual way. For example, a child cries at night and doesn't sleep – it may be bewitched.

EM says he did not use his voice when he was a baby – he would have tears but no voice. His parents took him to the TH it's because they have given his grandfather's name – M – and he also took long to start using his voice when he was a baby. Once his parents knew this and accepted it, his voice did come along. [I realised today that when EM uses the word "modern" he actually means old – I asked him outright what he means with modern and that is what he said.] I asked him whether he preferred being called by his original name, and he said yes, so I undertook to call him by that name from now onwards.

The participants told me that forefathers' spirits operate in their own way and we don't necessarily see that – we need THs to help see it and understand it. It's what

Appendix M
Ethics approval

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Education
Fakulteit Opvoedkunde
Lefapha la Thuto

Ethics Committee
23 June 2016

Dear Dr Sonntag

REFERENCE: EP 16/04/01

Your application was carefully considered by the Faculty of Education Ethics Committee and the final decision of the Ethics Committee is:

Your application is approved.

This letter serves as notification that you may continue with your fieldwork. Should any changes to the study occur after approval was given, it is your responsibility to notify the Ethics Committee immediately.

Please note that you will have to fulfil the conditions specified in this letter from the Faculty of Education Research Ethics Committee. The conditions include:

1) The ethics approval is conditional on the research being conducted as stipulated by the details of all documents submitted to the Committee. In the event that a further need arises to change who the investigators are, the methods or any other aspect, such changes must be submitted as an Amendment (Section E) for approval by the Committee.
   - Any amendments to this approved protocol need to be submitted to the Ethics Committee for review prior to data collection. Non-compliance implies that the Committee's approval is null and void.
   - Final data collection protocols and supporting evidence (e.g.: questionnaires, interview schedules, observation schedules) have to be submitted to the Ethics Committee before they are used for data collection.
2) The researcher should please note that this decision covers the entire research process, until completion of the study report, and not only the days that data will be collected.
3) Should your research be conducted in schools, please note that you have to submit proof of how you adhered to the Department of Basic Education (DBE) policy for research.
4) The Ethics Committee of the Faculty of Education does not accept any liability for research misconduct, of whatsoever nature, committed by the researcher(s) in the implementation of the approved protocol.

Please note that this is not a clearance certificate.
Upon completion of your research, you need to submit the following documentation to the Ethics Committee:

- **Integrated Declaration Form (Form D08),**
- **Initial Ethics Approval letter and,**
- **Approval of Title.**

On receipt of the above-mentioned documents you will be issued a clearance certificate. Please quote the reference number **EP 16/04/01** in any communication with the Ethics Committee.

Best wishes

Dr. Maesumeleng Ntlio-Ntlio
Ethics Assistant

Prof Liesel Ebersöhn
Chair: Ethics Committee
Faculty of Education

Appendix N

Letter of invitation to community

Faculty of Veterinary Science

Letter of invitation to residents of Hluvukani to participate in a rabies awareness research project

My name is Quixi Sonntag and I am a member of the Faculty of Veterinary Science of the University of Pretoria. I am a veterinarian (animal doctor) and I am interested in learning more about how people in Hluvukani understand diseases in humans and animals. Mr Philemon Mbhungele who lives in Hluvukani, will be working with me and will help me with interpreting from Shangaan to English if and when necessary.

Rabies is a disease that kills people and animals. We want to find ways to stop this from happening. We would like to learn more about the people and the animals who live in Hluvukani. We believe that you, the people in Hluvukani, can help us by telling us about your community, and what you know about rabies in humans and animals. We would like to work with you to help stop rabies in your community.

We are asking people who are interested in human and / or animal health, to participate in this project. Participation is entirely voluntary, and people who do agree to participate can stop at any time if they do not want to continue.

We would like to have a group of 10-15 adult people (over 18 years of age) who can read and write. Anybody is welcome to volunteer as long as they are interested in human and / or animal health. Teachers and people working in human health or animal health may be particularly interested.

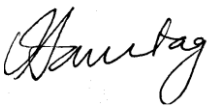
This research will involve group discussions and group activities (workshops) over some months on a regular basis. The venue will be in Hluvukani. The meetings will take place in the mornings, afternoons or evenings, during the week or on weekends. The people who are in the group will decide what days and times the meetings will be held.

I would appreciate it very much if you would consider helping me with my research. You are welcome to contact me anytime at the following contact details:

Telephone number: 082 4589 345

E-mail address: quixi.sonntag@up.ac.za

Yours sincerely



Researcher: Dr Quixi Sonntag

8 April 2016

Supervisor: Prof Ronél Ferreira

Appendix O

Participant consent form

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Veterinary Science

Participant information and consent document

Name of researcher:	Dr Quixi Sonntag
Title of study:	Utilising participatory reflection and action to facilitate rabies control in a rural community
Name of organisation:	University of Pretoria
Name of project:	Rabies awareness in Hluvukani
Name of interpreter:	Mr Philemon Mbhungele
Name of co-worker:	Dr Greg Simpson

Introduction

- You are being asked to be in a research study about the disease rabies and how it can be controlled
- You have been invited to participate in this study because we believe that your experience and knowledge as a resident of Hluvukani can help us learn what the people in Hluvukani know about human and animal health and in particular the disease rabies
- We ask that you read this form and ask any questions that you may have before agreeing to be in the study.

Purpose of the study

- The purpose of the study is to find ways of stopping rabies from spreading amongst the people and animals in Hluvukani.
- This research may be presented at a conference and published in a scientific journal.

Information about what will happen

- We are asking you to attend regular meetings (discussion groups, workshops) over the next few months. These are the provisional meeting dates and times:
    - Date / time
    - Date / time
    - Date / time
    - Date / time
- The venue is:
- Each meeting will last 2-3 hours. At each meeting, the whole group will first engage in a discussion. Then the group will divide into 2-3 smaller groups of 4-6 people each and have their own in-depth discussion. During this discussion, the small group will record their discussion in the form of a poster. After the small-group discussion, each group will report back to the larger group about their discussion and show their poster. The meeting will end

with a summary of the day's activities by the researcher, and inputs from the larger group to ensure that the summary correctly reflects the outcomes of the discussions.

Voluntary participation

- You do not have to participate if you do not want to.

Right to refuse or withdraw

- If you do decide to participate, you can stop at any time during the project, without affecting your relationship with the research team and the University of Pretoria.

Confidentiality

- This study is anonymous. We will not use your real name in any paper or presentation.
- Everything that is discussed at the meetings will be private and confidential. The group will decide together after each meeting what information can be discussed outside the meetings with other people.
- The researcher will keep records of the meetings. These records may be in the form of written notes, photographs of posters or other work that you create and video-tapes or audio-tapes recorded during the meeting. These records will be kept strictly confidential. They will be kept locked away. Only the researcher will have access to video- and audio material, nobody else will see it. Once the researcher has finished using the records, they will be kept locked away at the University of Pretoria.
- You may decide whether the researcher may use photographs taken of you personally in the presentation(s) and / or publication(s) relating to this study. At the end of the study, we will show you the photographs we would like to use and you can decide whether we can use them as they are, or use them in a way that does not show your identity, or not use them at all. We would like to use the photos to help explain the process that was used in the meetings, when we report on the project. Photographs will specifically be used to capture the dynamics and interaction between the participants while engaged in small group discussions. When small groups report back to the larger group they will be photographed, once again to capture any non-verbal messages that may be conveyed. Faces that are recognizable on the photographs can be disguised for any future publications if that is the wish of the participant. When taking pictures of the research context care will be taken not to include identifiable information on pictures. In the case of people visible on these pictures, their faces will be disguised for publication purposes.

Do you give permission to have photographs of yourself taken? (Please tick the appropriate box).

Yes ☐

No ☐

Risks of being in the study

- Participating in this project will take up some of your time and we ask that you attend all the meetings. We appreciate that you are willing to give up your time.
- We do not foresee any risks to yourself. There may be risks that are unknown to us.

Benefits of being in the study

- If you participate in this project, you may help yourself, your family and your community to be safe against rabies. This could save the lives of people and animals.

Right to ask questions and report concerns

- At any time during or after the project, if you feel worried or uncertain about anything, you must please tell somebody in the research team.
- Our contact details are as follows:
    - Dr Quixi Sonntag: 082 4589 345 or quixi.sonntag@up.ac.za
    - Mr Philemon Mbhungele: *(to be confirmed)*
    - Dr Greg Simpson: *(to be confirmed)*
- This research project has been approved by the Ethics Committee of the Faculty of Health Sciences, University of Pretoria. This Ethics Committee is responsible for ensuring that participants in research projects are protected from harm. The contact details for this committee are as follows: 012-356 3084/5.

Sharing the results

- After the project (when all the meetings are done), the researcher will report back to you.
- We will not use your real name in the report. We will use photographs of you only if you give us permission to do so.
- We will first share what we have learnt with you, the participants, before telling anyone else or making it public. If you are happy with the report, it will then be shared more widely with other community members and people at the university.

You will be given a copy of this document if you give your consent to be part of the study.

Certificate of Consent

I have read the information above, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study.

Print Name of Participant _____

Signature of Participant _____

Date _____

Name of witness _____

Signature of witness _____

Statement by the researcher/person taking consent

I have accurately read out the information about this project to the potential participant, and to the best of my ability made sure that the participant understands what will be done, i.e. that he / she will participate in a series of group discussions / workshops over the period of several months.

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

A copy of this informed consent form has been provided to the participant.

Name of researcher/person taking the consent _____

Signature of researcher/person taking the consent _____

Date _____

Appendix P

New rabies pamphlet

EVEN IF A DOG DOES BITE YOU, YOU CAN
STILL AVOID RABIES.
JUST FOLLOW THESE SIMPLE STEPS...

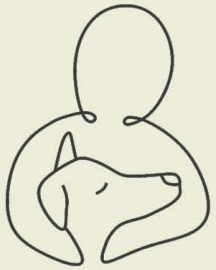
1 Wash the wound with soap and water IMMEDIATELY!

2 Go to the nearest clinic or hospital.

IF YOU HAVE ANY QUESTIONS ABOUT RABIES OR IF YOU SEE A DOG THAT MAY HAVE RABIES...

Contact your local State Vet on **013 773 1150**

Or go to the Hluvukani Animal Clinic.



HRF
HLUVUKANI RABIES FIGHTERS

Created by Freepik

RABIES

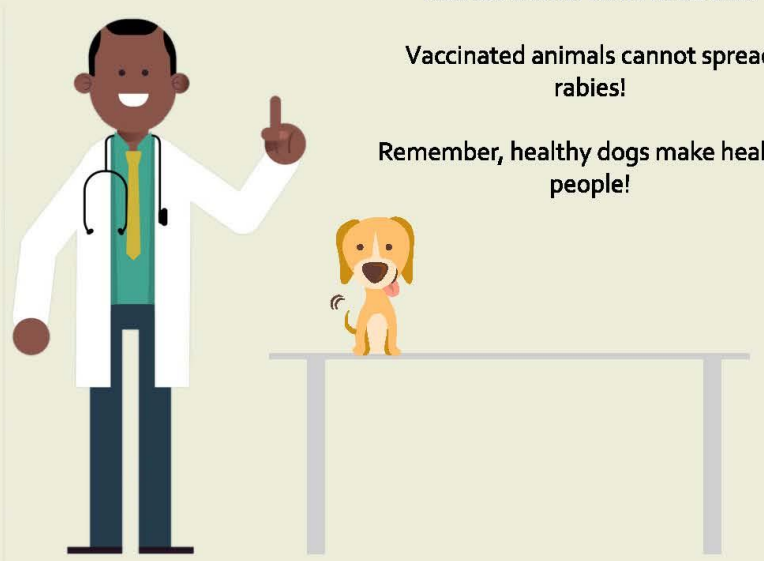
VACCINATE DOGS AND LIVE SAFE!

WHAT IS RABIES?

Rabies is a dangerous disease caused by a virus that affects the brain and nervous system. The virus is found in the saliva of an infected animal or person. In South Africa, most humans are infected through dog bites.

RABIES CAN BE DEADLY, BUT WE CAN PREVENT IT!

THE BEST WAY TO PREVENT THE DISEASE FROM SPREADING IS TO VACCINATE OUR DOGS AND CATS...



You can take your dogs and cats to the nearest animal clinic to do this.

Vaccinated animals cannot spread rabies!

Remember, healthy dogs make healthy people!

KNOWING HOW TO PREVENT DOG BITES CAN HELP PREVENT THE SPREAD OF RABIES TOO. HERE ARE SOME TIPS ON HOW TO AVOID GETTING BITTEN...

Don't disturb dogs when they are eating, sleeping or with their puppies.

Don't take a dog's toys or food.

Don't approach dogs if they are tied up or behind a fence.

Handle dogs with care. Don't grab their tails or ears and don't hug or climb on them.

Be calm around dogs. Avoid running, loud noises, screaming and shouting.

Don't stare into a dog's eyes and keep your face a safe distance from the dog's face.

If a loose or unknown dog comes near you, be like a tree! Stand still, look away and stay calm.

If you're knocked down or on the ground, be like a rock! Curl up in a ball, cover your face and stay calm.