

A review of the development and enactment of a radio programme on rainwater harvesting in expanding social learning interactions: A case of the Imvotho Bubomi Learning Network in the Nkonkobe Municipality, Eastern Cape, South Africa.

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## **Abstract**

The use of radio and associated information and communications technologies (ICTs) has not been widely explored as a process of environmental education over the years. If environmental education is to involve many people, the use of radio and associated ICTs, particularly in community radio, needs to be researched because radio has multilayered functions. This study examines how practitioners in an agricultural Community of Practice (CoP), namely the Imvotho Bubomi Learning Network in the Nkonkobe Municipality, Eastern Cape, South Africa developed a radio programme on rainwater harvesting for the promotion of food security. The study probes the expansion and social learning of the network and into the public sphere after broadcasts.

The study draws on research data generated in the Amanzi for Food project which was funded by the Water Research Commission of South Africa and was led by the Rhodes University Environmental Learning Research Centre. Using interviews, radio programme transcripts and observations, the study found that through using their prior knowledge from a training of trainers' course on rain water harvesting and drawing on everyday experience of rainwater harvesting the CoP members had an expansion in their mutual engagement, joint enterprise, diversity, shared repertoire and identity into a knowledge community.

This learning process developed through a successive elaboration of social ecological and social articulations related to the expansive functioning of the CoP; and experience of the benefits of rainwater harvesting as radio programme listeners deliberated how the different practices related to their existing knowledge and experience. The study also found that these expansive processes of social learning occurred across the spectrum of smallholder farmers and homestead food growers in a stimulated radio listening focus group discussion.

The study concludes that agriculture practitioners involved in education for sustainable development could expand their knowledge sharing platforms by giving more attention to community radio as a means of both involving participants and engaging learning communities in local environment and sustainability concerns.

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## **Dedication**

This thesis is dedicated to my awesome support system, my parents Dr Justin Lupele and Mrs. Edrivione Lupele; and to all the media practitioners out there who are trying to communicate for development and feeding the world through communication.

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## Acronyms

<b>CoP</b>	Community of Practice
<b>ESD</b>	Education for Sustainable Development
<b>IBLN</b>	Imvotho Bubomi Learning Network
<b>RWH</b>	Rainwater Harvesting
<b>ToT</b>	Training of Trainers course
<b>WRC</b>	Water Research Commission
<b>NGO</b>	Non-Governmental Organisation
<b>AWUHGS</b>	Agricultural Water Use in Homestead Gardening Systems
<b>RWHC</b>	Rainwater Harvesting and Conservation
<b>WHC</b>	Water Harvesting and Conservation
<b>FAO</b>	Food Agriculture Organisation
<b>ICT</b>	Information Communication Technology

# Chapter 1: Introduction to the Study

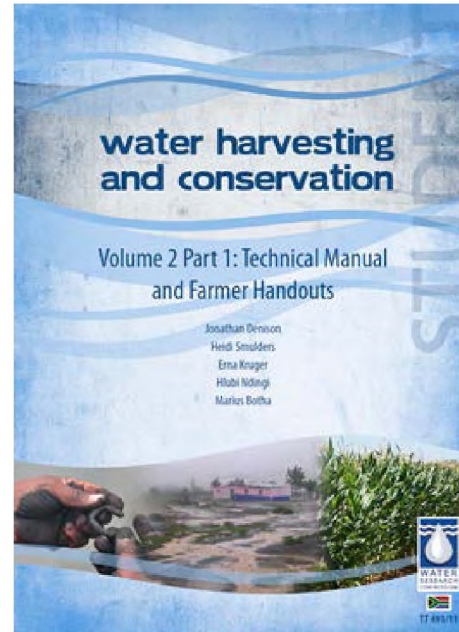
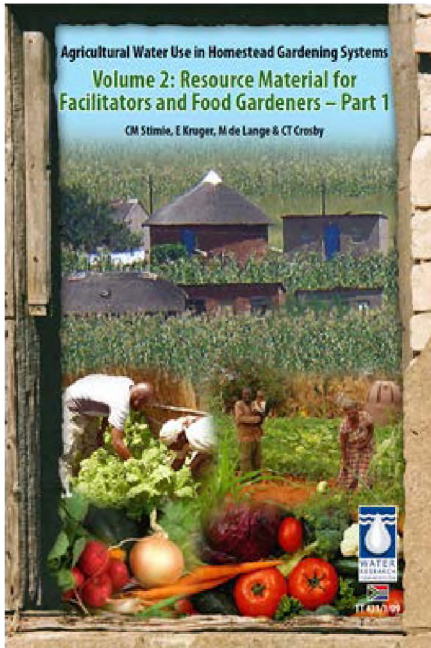
## 1.0 Introduction

This chapter introduces the study by highlighting the context in which it was undertaken. I begin by outlining how the study came about; through the Amanzi for Food project, then I move on to illustrate the study site. Thereafter, the chapter discusses the different stakeholders comprising the Imvotho Bubomi Learning Network, followed by a background setting of Fort FM Community Radio Station and how they are relevant to this study. This then leads to outlining my position in the Amanzi for Food project (thus stipulating the study's purpose and research question). I then give a brief synopsis of the entire outline of the thesis and draw a conclusion of the chapter.

## 1.1 Research Context

### 1.1.1 Amanzi for Food Project

This study was carried out in the context of Amanzi for Food Project. Amanzi for Food was a project funded by the Water Research Commission (WRC) and was managed and implemented by the Environmental Learning Research Centre at Rhodes University from April 2013 to September 2016. The project focused on an action oriented strategy for knowledge dissemination of water use in homestead gardening and rainwater harvesting for smallholder farmers in South Africa (Lotz-Sisitka, Denison, Sisitka, Phillips, O'Donoghue, Pesanayi, Weaver, Mabeza & Lupele, 2013/2015). Amanzi for Food was a response to recommendations made in two Water Research Commission publications, namely *Water Harvesting and Conservation* (WHC) and *Agricultural Water Use in Homestead Gardening Systems* (AWUHGS) (Lotz-Sisitka et al., 2013/2015). The two publications are shown in Figure 1.1.



*Figure 1.1: Image showing the covers of Water Harvesting and Conservation and Agricultural Water Use in Homestead Gardening Systems.*

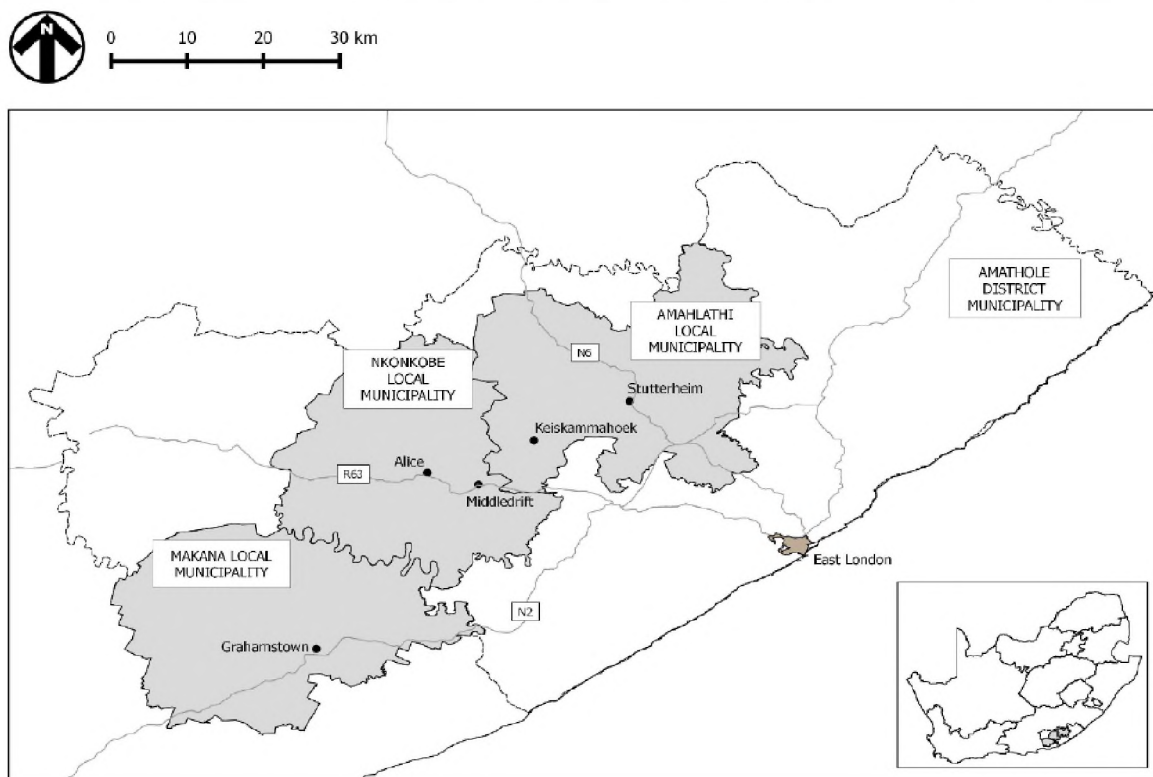
The two publications acted as the core resources for the project. The project mainly focused on the dissemination of the knowledge through using agricultural colleges, extension/non-governmental organisations (NGO) training organisations and public media with an emphasis on community radio. The latter is what this study is based on. The main aim of the project was to encourage productive water use for crop production in both homestead food growers and smallholder farmer settings through effective knowledge dissemination on rainwater harvesting and practical training with the different stakeholders involved (Lotz-Sisitka et al., 2013/2015) .

The *Water Harvesting and Conservation* and *Agricultural Water Use in Homestead Gardening Systems* cover the same ground in terms of harvesting and use of rainwater resources for food production. Despite them covering the same ground they were written for different audiences. For instance, the *Water Harvesting and Conservation* was intended for the beneficiary of small-scale farmers and focuses entirely on rainwater harvesting with varying degrees looking at soil and water conservation; while the *Agricultural Water Use in Homestead Gardening Systems* was intended for homestead subsistence crop production. The latter covers various aspects of

homestead gardening with rainwater harvesting being one of the many different components (Lotz-Sisitka et al., 2013/2015).

### 1.1.2 Study Site

Amanzi for Food project was a pilot study implemented in the Eastern Cape province of South Africa. It was established to develop and test the action oriented strategy which was then going to inform a strategy at national level (Lotz-Sisitka et al., 2013/15). The study was undertaken in the Nkonkobe municipality (see Figure 1.2). This study was part of the Amanzi for Food bigger project but my study site was mostly between Alice and Middledrift as shown in Figure 1.2.



*Figure 1.2: Map showing the research site as adapted from Weaver (2015)*

### 1.1.3 Imvotho Bubomi Learning Network

The Imvotho Bubomi Learning Network (IBLN) is comprised of different agriculture experts, ranging from college lecturers, agriculture extension officers, farmers, agriculture researchers and many more. It was established around a course-based initiative which sought to train agriculture personnel on rainwater harvesting practices (Lotz-Sisitka et al., 2013/15). These

many people came together and formed a learning network which later was concluded to be an emerging community of practice by Weaver's (2015) research. The network was formed around a shared interest which was learning about different rainwater harvesting practices. Wenger (1998) and Wenger, McDermott and Snyder (2002) describe a shared interest in Community of Practice (CoP) as a shared enterprise or shared domain respectively. The network was referred to as a CoP because it possessed the three traits of a CoP. These traits are: a shared domain or enterprise that brought them together; the different ways in which they engage with one another; and lastly, having a shared repertoire produced due to the constant negotiation of their enterprise and its engagement (Wenger et al., 2002).

Some of the shared repertoire the network members had was as a result of having a shared history of learning together in a change project of a trainers' (ToT) course which took a period of nine months. Participants who completed and passed the course were awarded a Rhodes University Certificate (Lotz-Sisitka et al., 2013/15; Weaver 2015). During this time the network members were able to form relationships among themselves and also develop shared resources such as having a website as rainwater harvesting knowledge repository ([www.amanziforfood.co.za](http://www.amanziforfood.co.za)). This was the first media platform to be developed and used as a learning process (Lotz-Sisitka et al., 2013/15). The website served as a widely accessible, affordable source of the WRC resources which were edited into different levels of complexity for different audiences and contexts. Furthermore, they shared materials such as *Water Harvesting and Conservation* and *Agricultural Water Use in Homestead Gardening Systems* from the ToT course. Additionally, the IBLN implemented actual practices by having productive demonstration sites which were later seen as useful platforms for collaborative learning (Weaver, 2015). Furthermore, they shared a WhatsApp group which they used in sharing and documenting what they were doing. This was the same with a Facebook page. They also shared their domain with the general public at agricultural shows (Weaver, 2015).

The website provided a clear, easy to use navigation tool for all to find the type of information, detail of information or options available to suit their particular needs. Together with a Facebook page, the website became an ongoing, interactive, wide-reaching, constantly updating hub of RWHC knowledge among the Imvotho Bubomi network and beyond (Lotz-Sisitka et al.,

2013/15). As time went by the IBLN began to share knowledge about their domain using community radio and at one point national radio stations (Lotz-Sisitka et al., 2013/15). This birthed my research interest of investigating the development and enactment of the radio programming process and how the expansion shaped the social learning interactions.

#### **1.1.4 Fort FM Community Radio Station**

The Fort FM Community Radio Station (see Figure 1.3) that the Imvotho Bubomi Learning Network was using decided to share the network's acquired knowledge on rainwater harvesting. Fort FM is located in the heart of Nkonkobe Municipality area thus being accessible to members in the IBLN. The station covers a frequency ranging from East London in the east to Stutterheim in the north and King William's Town, Grahamstown and Port Alfred centrally and Port Elizabeth in the west of the Eastern Cape Province. According to the November 2015 Radio Audience Measurement Survey (RAMS), Fort FM Community Radio Station provided a listenership figure of 146 000 listeners tuning into the station (Lotz-Sisitka et al., 2013/15). This audience measurement was said to be valid from April 2015 to 31<sup>st</sup> March 2016. The station broadcasts from 6 a.m. to midnight daily and has a format of 60% talk and 40% music. Like most community radio stations, Fort FM survives on revenue from adverts and its funding for equipment, material and staffing are often in short supply. Nevertheless, the radio station has benefited from the University of Fort Hare support, which houses the radio station building on campus (Lotz-Sisitka et al., 2013/15).





*Figure 1.3: Photo showing location of Fort FM Radio Station*

The radio station is well established in the farming community and airs its agriculture programme every Monday from 6 to 7 p.m. The agriculture show focuses on current agriculture projects taking place in the community with topics ranging from crop farming to livestock rearing, but never one on water and rainwater harvesting (Lotz-Sisitka et al., 2013/15). The programme is aired in isiXhosa and is interactive with a magazine type of format which involves interviews with guest experts and discussions through various channels with listeners. It offers listeners a platform to share their views on the topic under discussion through communication channels such as telephone to an in-studio landline, Short Message Service (SMS), the programme's Facebook page called Ezolimo Agriculture show and sometimes personal visits to the station (Lotz-Sisitka et al., 2013/15).

## **1.2 My Position in the Amanzi for Food Project and Research Question**

In the Amanzi for Food project my role was to document all activities of the project for dissemination on various media platforms. I documented activities using photographs, videos and articles which were published on the Amanzi for Food website as news items or think pieces. Additionally, with the help of fellow research team members and the IBLN, I was able to

produce radio programme scripts for every radio broadcast that happened between April 2015 and April 2016. I also directed these radio programmes. It is from the producing and directing of the 2015 radio shows and contextual analysis of the Imvotho Bubomi Learning Network that I was able to establish my research question. The main aim of the study was to find how the development and enactment of a radio programming process shaped a IBLN community of practice on the expansion of social learning interactions in relation to rainwater harvesting.

### **1.3 Significance of the study**

This study is significant because given the literature review and from my personal knowledge, it is evident that very little research has been done on utilisation of Information Communication Technology (ICTs), and more specifically use of community radio in order to bring about education for sustainable development research in South Africa. The study also aims to contribute to the body of knowledge on similar research done elsewhere in the greater part of Southern Africa. Further, the study seeks to extend Weaver's (2015) research and answers one of her recommendations of the IBLN expanding into radio production.

Since the study is situated in the context of Amanzi for Food Project, it is of much significance to the funders of the project as they seek to implement the action orientated strategy to national level and findings from this study will highly be valued (Lotz-Sisitka et al., 2013/15). Lastly, as a researcher with a media and environmental studies background this study is significant for me as I would like to be an effective and efficient environment and development communicator to people in the public sphere.

### **1.4 Research Purpose**

The purpose of this study was to find how the development and enactment of a radio programming process shaped a community of practice (namely IBLN) to enhance social learning interactions in relation to rainwater harvesting. This was with the view to gain insight into how information on water harvesting can be disseminated from a community of practice to other parts of society through a community radio platform to bring about change in the practice.

### **1.5 The Research Question**

The study addressed the following research question:

How did the development and enactment of a radio programming process on rainwater harvesting expand an emerging community of practice (Imvotho Bubomi Learning Network) and how it did enhance the social learning processes in the network?

### **1.6 Research Methodology**

This research was informed by an interpretative case study design in the context of the bigger project Amanzi for Food. The study took a socially critical orientation to education which was shaped by two closely related theoretical frameworks, namely community of practice and social learning theories. Data generation was mainly through interviews, document review and interpretation, focused group discussions and observations. Data analysis was done by means of abductive and inductive processes.

### **1.7 Outline of the Study**

This section outlines the study. Chapter 1 highlights how the study came to be by situating it in the Amanzi for Food project. The contextual background for the Imvotho Bubomi Learning Network and that of the Fort FM Radio Station has been provided. The Chapter also discusses the purpose of this study, the research question and the significance of the study. Chapter 2 is a discussion of the review of literature and theoretical underpinnings for this study. The chapter discusses the body of literature in relation to the study. Chapter 3 is a report of how I designed the study, highlighting tools and techniques used in data generation and how the data was analysed. Chapter 4 is a presentation of analysed data from the formulated analytical memos found in the appendices section. The data is presented in a thematic manner according to the emerged themes and from theory. Chapter 5 discusses the findings in relation to the literature discussed in Chapter 2. These findings are discussed as evidence under four main findings presented as analytic statements. Lastly, Chapter 6 provides a conclusion to the entire thesis.

### **1.8 Conclusion**

This chapter has introduced the study by highlighting the context in which the study is situated. It gives contextual background of the study by highlighting the study location, the significance of

the research and its potential value, research question and a brief introduction to the methodology used in this study. I have also provided an outline of the entire thesis. The next chapter discusses the literature and theoretical framework that informed this study.

## **Chapter 2: Literature Review and Theoretical Framework**

### **2.0 Introduction**

No research study stands alone without relevant grounding and backing of past studies. These previous studies are seen as building blocks to a research under investigation (Maputseni, 2006). In light of this, this chapter presents a review of the literature and the theoretical framework underlying the study.

### **2.1 Review of Literature**

Hart (2000, p.13) defines a literature review as a selection of available documents on a topic which contains information, ideas, data and evidence written from a particular standpoint to fulfil certain aims or express certain views on the nature of the topic and how it is to be investigated, and the effective evaluation of these documents in relation to the research being proposed.

With regards to Hart's (2000) definition above this section highlights literature relating to the research question (see Section 1.4.2). In order to answer the question and give direction to this study, I sought relevant literature from academic journals, past research, books, websites and organisation publications. The chapter is structured in a way that illuminates the radio programming process in light of literature I reviewed, to provide a better understanding of the pre-broadcast, mid-broadcast and post-broadcast processes.

#### **2.1.1 History of Rainwater Harvesting Practice**

Rain water harvesting and conservation is defined by Gould as cited in Kahinda, Sejamoholo, Taigbenu, Boroto, Lillie and Taute as, "the concentration, collection, storage and use of rain water runoff for both domestic and agricultural purposes" (2008, p. 4). Various forms of water harvesting (WH) have been used traditionally throughout the centuries. The long history of rainwater collection can be traced (in recorded history) as far back as ancient times some 3,000 years ago (850 BC) (Green Campus Initiative, 2015). Some of the very earliest agriculture, in the Middle East, was based on techniques such as diversion of "wadi" flow (spate flow from normally dry watercourses) onto agricultural fields (Evenari, Shanan & Tadmor, 1971). These schemes involved the clearing of hillsides from vegetation to increase runoff, which was then

directed to fields on the plains. Evidence of rainwater harvesting has been seen in the ancient societies of the Philippines, Thailand and other parts of Southeast Asia, Egypt, Rome and beyond (Green Campus Initiative, 2015). In Israel, WH systems dating back 4000 years or more have been discovered (Evenari et al., 1971). This practice of water conservation in Africa was first seen and characterised as a farming skill in North Africa near Niger and the Congo area (Denison & Wotshela, 2009).

In South Africa, rain water harvesting is said to have dated back to the nomadic era when farming (crop production) was in its early stages (Denison & Wotshela, 2009). This was evident in the rain water harvesting knowledge for food production found among rural areas of South Africa in the 19<sup>th</sup> and early 20<sup>th</sup> centuries in KwaZulu-Natal Province, around the Valley of a Thousand Hills (Kahinda et al., 2008). Water harvesting knowledge and skills have been popular in recent years, as South Africa is a water scarce country and has experienced some very dry years (Kahinda, Taigbenu & Boroto 2010). Due to this experience, it is now common to see people harvesting rainwater from their rooftops for either domestic or irrigation purposes in rural and urban areas (Kahinda et al., 2008). Rainwater harvesting practices are implemented in agricultural settings in order to prolong the crop production period. Around farming communities, smallholder farmers and homestead food growers usually get information about new agriculture techniques such as rainwater harvesting techniques from extension services and agriculture equipment suppliers but hardly from local sources such as radio (Pretty, 1995).

The South African Water Research Commission, being the context of this study, has supported research into rainwater harvesting. Reports on this research are available on their “Knowledge Hub” ([www.wrc.org.za](http://www.wrc.org.za)). This study aims to provide insights into how the dissemination of knowledge and skills on Water Harvesting by means of community radio can be enhanced based on the experiences and lessons of the Imvotho Bubomi Learning Network in the Eastern Cape. This is significant especially given that South Africa has high levels of water scarcity (Kahinda et al., 2008). The major means of WH knowledge and skills dissemination under study is a community radio station. Therefore, the next section of this thesis discusses literature on radio communication as a means of information dissemination and how this has been used over time.

### **2.1.2 Radio in Africa**

In Africa, broadcast radio is seen as the dominant medium due to its wide swath and noticeable geographical reach as opposed to other media platforms such as television and newspaper. It is a more preferred medium due to the multi-layered functionalities it serves (Myers, 2008). Gunner, Ligaga and Moyo describe radio as a medium, “like smoke, sneaks around corners in the most unexpected of places and assails the sense” (2011, p. 2). Generally, radio is the most preferred means of communication in African countries because it resonates with people’s immediate present daily issues as opposed to other media (Mano, 2011). This is surprising because contemporary belief has it that radio is a dying or dead medium. However, Gunner, Ligaga and Moyo (2011) refute this notion and justify that it is more of a medium that adheres to continual adaptation in a changing global technological environment, ultimately leading to meet users’ standards and gratification. This is because it converges its adaptation to various platforms such as new media platforms and allows its intended audience to participate therefore creating a close relationship with its listeners, which Mano (2011) observes, has implications in the process of modernity and globalisation in a society.

One of the strengths of radio in Africa is the capacity it allows to enact cultural memory or lived experiences by people to those in a wider reach (Gunner et al., 2011). This is central to this study. In addition, radio is only important as far as its content is relevant to its listeners by capturing their everyday life. In this way radio programmes respond to the cultural social fabric of society in which it is broadcast (Gunner et al., 2011). Contrary to these benefits, it has been claimed to spread destructive political propaganda due to its tendency to make the speakers’ word seem absolute. Gunner, Ligaga and Moyo’s (2011) claims resonate with those of Mano (2011) who acknowledged that radio gives room for people to question and challenge issues that seem to oppress and oppose people in society, thus giving them a platform to air their voices either in awareness or in terms of opposition.

### **2.1.3 Radio in South Africa**

In South Africa, broadcast radio can be traced back to early 1923 (De Beer, 1998). During the apartheid era, radio was in the hands of the colonial masters and was seen as a medium that popularised colonial regime and silenced ‘black Africanness’ because black Africans were not

allowed to have radio programmes in their own languages (CoPlan, 2011). This eventually changed as independence in Africa became a song of most African countries from 1957 to 1967. The post-apartheid era has seen the owning and diversifying of radio in the country. Radio has embraced ethnic languages with the industry having public, commercial and community broadcasting (CoPlan, 2011). Public broadcasting is publically owned and state funded radio stations, commercial is operated for profit and are privately owned, while, community is controlled by a particular community or organisation and is usually a non-profit service. They make their revenue from advertising, selling of air space and sometimes a subsidy from government (CoPlan, 2011). The latter of the three broadcasting services is what this study focuses on.

South Africa has more than 165 community radio stations that broadcast in a number of languages with diverse content, thus playing a crucial part in the South African broadcasting landscape. This type of radio station covers a whole range of programme genres with varying formats. CoPlan (2011) points out that in order for a community radio station to be granted licence from the department of communication in South Africa, there should be participation of the community and not just for it (the community). This means that the community in which it operates should be a part of the staffing programming and accountability. As Mano (2011) points out, community radio's main purpose is to serve the community in which it broadcasts.

There is an indication of 33.6 million radio listeners in South Africa with most listeners having to listen to public broadcast service across the country. In the Eastern Cape alone, RAMS generated for October 14/March 2015 listenership surveys indicate that 71% of listeners listen to public broadcast service, while 29% listen to community radio, with 23% listening to commercial radio (Shapiro, 2015). The report further indicates that the country has a population of as many community radio listeners as there are TV viewers, three times more radio listeners than Facebook users and twice as many community radio listeners than newspaper readers (Shapiro, 2015).



#### **2.1.4 Community Radio Education**

Recent studies show that the media has been widely explored in the communication discipline for framing global awareness of environmental transnational issues affecting the world (Boykoff 2010; Lyytimaki, 2011; Maxwell & Miller 2011). This is due to the growing understanding of the media being seen as a participant in such environmental transnational issues; participant in the sense of it either being a contributing factor in terms of electronic waste or a platform for awareness and education (Maxwell & Miller, 2011). With a varied sCoPe of media platforms, community radio is one of the media in which the latter is done. Studies show that the platform has been used for educational purposes, for instance, Nazari and Hasbullah's (2010) study found that radio was significant in informal education in reaching people on agricultural practices and their development in Iran. Their study also showed that education interventions through using community radio contributed to the people's agricultural knowledge enhancement. This therefore means that radio cannot only contribute to people's knowledge and understanding on an environmental issue but can influence people's behaviour to bring about social change.

In an agriculture context, using community radio brings about resilience because it empowers farmers to employ new agriculture techniques, interact and share knowledge with one another or over the radio (Khanal, 2013). Due to this interaction, knowledge disseminated to farmers at the right time on radio may contribute to the rural development, knowledge gain, and food security of the community and not just creating awareness (Kapoor 2011; Khanal 2013). It is through this interaction that practical demonstrations can be shown or illustrated in form of experience or personal story. This is because farmers are more interested in practical demonstrations as opposed to technical information that does not hold practically (Kapoor, 2011). This is reminiscent of Khanal's (2013) work in the sense that they both see the media, and community radio in particular as a platform of effective sharing of agriculture knowledge because they result in knowledge gain and additionally seeing media platforms and other authority bodies such as agricultural extension officers as places to seek more information on a topic (Khanal, 2013). By listening to community radio farmers gain knowledge through picking and choosing what techniques best suit them, this differs to them adopting a practice that seems to be working for their neighbour. Through this process, Taiwo and Asmah (2013) note that disseminating and

sharing knowledge on any agriculture practice widens the possibility of social learning beyond a given sCoPe. This aligns with the main aim of this study.

### **2.1.5 Radio Programming and Agenda Setting**

Radio Programming is a process of coming up with content suitable for radio production.

Pennington (2000) proposes that the process involves consultation of several people within a media organisation as it is a voyage of discovering new ideas and knowledge. The purpose of the process is to reach an intended audience that the disseminated message targets. In order to do so, a radio programme should take a format such as radio talk, radio drama, commentaries, or magazine. Pennington (2000) describes a magazine programming format as one with a variety of items such as news (in this case agriculture news), discussions or in-depth features. Magazine programmes are broadcasted periodically and are prepared to generally target a specific audience who are likely to benefit from it. They are usually set with the aim of informing, entertaining or educating the masses (Pennington, 2000). A magazine type format is programmed with an emphasis of bringing out an element of real lived experiences (Pennington, 2000). This radio programming format is useful for this study because it brings out the lived experiences of rainwater harvesting practices centred on educating the listeners through sharing content from the WRC materials by the IBLN.

Any radio programming format is coupled with an agenda that the programme wishes to put across to the listeners. Agenda setting is a way in which the media fosters what the public should think about in relation to the content which they produce (McCombs, 2002). They set the tone of what the masses should think and talk about by showing them the reality through the window of the media on a particular topic. This shows the power behind those that set the agenda for the masses; for example in an earlier section an example is given of how colonist in the apartheid era used the radio to promote their colonial regime thus showing the power behind this set agenda. Therefore, drawing from this it can then be said that agenda setting could be a mechanism of power. One drawback of this approach is that of the masses losing interest on an issue if the media stops emphasising on it. Thus, the set agenda is sometimes not a continual process as there are times when there is a fall and rise in the set agenda such as coverage of elections in a country. The masses focus on discussions around elections of the country more at a time when the media is broadcasting the matter than when it is not (McCombs, 2002). For this study this

meant that even though the radio programmes set an agenda (see Chapter 3), after broadcasts discussion of the matter among the people was likely to fall due to other civic debates.

Therefore, this study interrogated whether or not the set agenda in the radio programmes shaped the public's thinking in what they talk about in a social interactive learning setting.

### **2.1.6 Participatory Radio Campaign and Radio Listening Clubs**

Over the years, the term 'participatory radio' has been used in communication for social change campaigns more especially for food security in the agriculture sector. Participatory radio campaigns are farmer-centred agricultural radio programs which involve the farmers by becoming in charge and being custodians of knowledge (Perkins, Ward, & Leclair, 2011). These farmers select the focus or topic of the agriculture radio show, and the time it is to be broadcasted, and they oversee the development of the programme by sharing knowledge in a lively 'edu-entertaining' format, over a period of time. In this way it helps farmers evaluate and make informed decisions about an agricultural practice or an agricultural improvement in their context (Perkins et al., 2011).

This definition of participatory radio campaigns can be related to the definition of community radio listening clubs by FAO-Dimitra Project, Samwaki, ONG VIE, Bailly, and Monsieur as "a group of men and women who wish to listen to radio programmes actively and systematically with a view to discussing the content and above all putting into practice the lessons learned..." (2006, p. 8)

Community listening clubs are used as a tool in a participatory radio campaign approach. They focus on improving and providing access to information in rural areas, more especially to women as a way of empowering them (Ezra & Mchakulu, 2007). This is a process that involves participants exchanging information and knowledge about a phenomenon through discussions. In order for these meetings to take place FAO-Dimitra et al., (2006) propose a step-by-step process. They illuminate that:

- Identification of a topic or subject where members choose a subject which they want to investigate in more detail.
- Production of programmes should involve rural radio or community radio in their reach.

- Active listening - the programme is broadcasted and members active listen in.
- A discussion of the subject which then leads to decision making and finding means of action in terms of human resources or financial ones.
- The decisions planned are put into action and worked towards.

The success of this approach often uses radio listening clubs; a platform where community conversations can be deemed fruitful due to the different stakeholder participants it considers (Manda 2015). Manda (2015) recommends that radio based initiatives in communication for development should consider using radio listening clubs' platforms in order to foster social change.

On the basis of this literature on listening clubs and participatory radio this study worked with the two approaches to come up with the mix of the two different views. These two ideas were used to come up with focus group discussions involving a group of farmers. A recorded broadcast was played to them and after listening to it, they deliberated on issues coming out of the broadcast. The focus group discussions did not entirely operate like a listening club neither did it operate like a participatory radio campaign but borrowed from both approaches, churned them and produced a simulated participatory radio listening focus group discussion.

### **2.1.7 Environmental Education and use of Radio**

There are different understandings of environmental education (Fien, 1993). For this study, it is viewed and understood as an education that is concerned about the environment, which is centred on social change and education values. Fien (1993) observed that education for the environment emphasises an exploration of various environmental issues in light of promoting lifestyles that are compatible to sustainable use of resources, thus, bringing about an effective occurrence of environmental education in a transformative way. In relation to this, the ideological underpinnings of the study is that of an education orientation that is socially critical because it aims at improving society through undertaking active participation and bringing about social change. It sees learners as consumers of the media in an active participatory way in response to create what Huckle (as cited in Fien, 1993, p. 19) calls, "a fairer and less troubled world in which to live". This then means that the learning is socially constructed because the learners reconstruct and socially construct a worldview through interactions (as the IBLN in this

study did in the interactive radio programme), resulting in the subjective social reality of a learner.

A subjective social reality of an individual is of relevance more especially in a changing world which Jarvis (2000) calls a learning society. He argues that the current expanding education system is more of information technology and increased knowledge jobs. As a result, environmental education is not restricted to an institutionalised formal education system but can be informal such as through collectively listening to a radio programme or within a knowledge structure such as a community of practice. Orr (2004) agrees with Jarvis (2000) that we currently live in an information explosion era as a result of technological advancements. Therefore, how can such an education system (technologically based) promote inclusive lifelong learning stipulated in the sustainable development goal 4 ( There is a need for an education that emphasises the inclusivity of education for the environment where individuals are not only subjected to institutionalised formal learning but to learning that accommodates their own ideas and knowledge to bring about their own person. A learning which as Orr (2004) suggests they steward the knowledge into being their own because it shows the power of examples through everyday living in opposition to mere words.

One way in which this kind of education for the environment can be brought about is through using media platforms such as community radio. This can help bring about an education that is aligned with individuals achieving goals around personal growth in terms of understanding, truth and embracing ecological dimensions of the earth (Cornwell, 2004). A report by Lotz-Sisitka, Olvitt, Gumede and Pesanayi (2006) suggest how radio can be used for dissemination of knowledge in order to create interactive spaces for listeners to participate in. This is due to viewing ICTs as extended platforms or spaces of learning; however, the counteraction to this as the report suggests is the lack of use of ICTs, particularly radio, in bringing about Education for Sustainable Development practice (Lotz-Sisitka et al., 2006). This poses questions in this literature because if ICTs and radio, in particular, is seen as a space for learning for many people in the public sphere due to its wide coverage, how then is it possible to reach these people if it's not being utilised? This study involved people in agriculture sustainable development actions of

the IBLN in the Amanzi for Food Project to extend the coverage and participation in the radio broadcasts.

## **2.2 Theoretical Framing**

The theoretical framework underpinning this study was informed by community of practice and social learning theory. These resonate with the socially critical education orientation of this study (see Section 2.1.6).

### **2.2.1 Community of Practice and Social Competency**

Literature in the knowledge management field suggests that the term community of practice has a contested meaning, however be that as it may they all relate it to Etienne Wenger who is seen as the architect of the term. Despite Wenger being the founder of the term, Cox (2005) establishes that Wenger himself has different ways of defining it. He elaborates that the variance in Wenger's definition is related to the context in which it will be used (Cox, 2005). This study will define a community of practice (CoP) as a group of people who don't necessarily work together but meet regularly to discuss and share ideas over a shared passion, topic or interest (Wenger, McDermott & Snyder, 2002).

A CoP constitutes three elements which act as sources of social coherence of the community or social competencies. These are shared enterprise, mutual engagement and shared repertoire (Wenger, 1998). When these are in place, members within a CoP find value in meeting together because they explore ideas shared in order to solve a problem of their enterprise, which usually results in an accumulation of knowledge and value creation in learning together (Wenger, McDermott and Snyder, 2002). Furthermore, a CoP shares a body of common knowledge, practice and sense of identity. Wenger et al. (2002) note that CoP needs and existence are intentionally managed in a systematic manner. Below is a detailed discussion of the three underlying tenets of a CoP.

#### ***a. Joint enterprise as a source of social competency***

Joint enterprise is the sole purpose of what the community of practice is about and the members of the community need to understand the enterprise and be able to contribute to it. In the case of

this study, the enterprise is the domain of rainwater harvesting and conservation. Wenger et al. (2002) note that a shared enterprise creates a sense of commitment and accountability to the body of knowledge by the members in the community. The enterprise can range from “mundane know-how, like eating healthy food, to highly specialised professional expertise, like designing aircraft wings” (Wenger et al., 2002, p. 30). In a CoP what brings people together is not always a discipline of interest but could be a similar problem they seek to overcome within a discipline. For example in the Imvotho Bubomi Learning Network the members’ view of the enterprise guides their learning on RWH because it creates a common ground and brings people together resulting in defining the identity of the community.

The importance of the enterprise determines the identity of the community. Once the enterprise is set, it evolves and does not remain static. If it was set on a set of problems, it will eventually evolve with time because of new challenges that arise and fresh perspective on the matter. Nevertheless, the community upholds its identity which is rooted in the shared understanding of the enterprise among the members (Wenger, 1998). In this case the enterprise being rainwater harvesting and conservation practice is a good domain because it is not a passing issue but contains long-standing issues that require or call for learning overtime. Wenger notes that, “a well-developed domain becomes a statement of what knowledge the community will steward ... a well-honed domain can boost a community’s visibility and influence within the organisation” (2002, p. 32).

During its maturing stage, the enterprise grows into defining its role in the wider community and in relation to other domains (Wenger et al., 2002). This element can be described with the aid of aspects such as negotiated enterprise where members understand their enterprise through homogeneous acts of mutual engagement among themselves. In addition, consistent negotiating of the enterprise brings about a sense of accountability among members in relation to the enterprise, for instance seeing knowledge as a resource to be shared with others so as to make fellow members lives bearable (Wenger, 1998). Furthermore, a continual negotiation of the enterprise results to members evolving their enterprise in terms of its interpretation and new ways of talking about it. This means that mutual engagement is a contributing factor when negotiating the enterprise and shaping collective identity of the CoP. It further means that

continual negotiation of enterprise keeps the enterprise in check by allowing space for churning new ideas about the enterprise (Wenger, 1998). This aspect of negotiating the enterprise will be discussed further in the chapter.

***b. Mutual engagement as an act of social competency***

The second element that Wenger proposes is that of mutual engagement which encompasses the various avenues in which people in the community (CoP) relate with each other. It not only involves individual competencies but those of other members. This can be seen when members engage in action with each other, thus making membership in a community a necessity (Wenger, 1998). However, Wenger (1998) cautions that membership is not just defined in ways of who knows whom or who talks to whom but it encompasses the ‘dense relations’ surrounding their shared enterprise. This means that there should be ways which enable this engagement. Wenger further points out that the engagement occurs in a given context as mundane as exchanging instant messages to “being connected (or being part of) by the radio” (p. 74). Furthermore, the element entails the essence of non-homogeneity, meaning that having different members brings an aspect of diversity to the community. Additionally, mutual engagement centres on what members can do and know, ultimately exposing them to what they do not know and cannot do among themselves (Wenger, 1998). Therefore it creates an avenue of learning because members exist in a non-homogeneous community and so they bring with them different skills, knowledge and expertise.

***c. Shared repertoire as an act of social competency***

Shared repertoire is what the CoP has as communal resources and to which they have equal access. In his earlier work, Wenger (1998) accredits the existence of a joint enterprise to the creation of resources by the CoP so that meaning making is possible. The CoP’s repertoire, he points out, includes stories, routines, styles of talking about practice, practical demonstrations of doing things, material resources et cetera; all which have been produced by the CoP and have become part of the practice (Wenger, 1998). It is important to note that though a shared repertoire is produced by the CoP, it is made possible because of a historical (mutual shared history of learning) and continual mutual engagement of the enterprise. This therefore calls for a

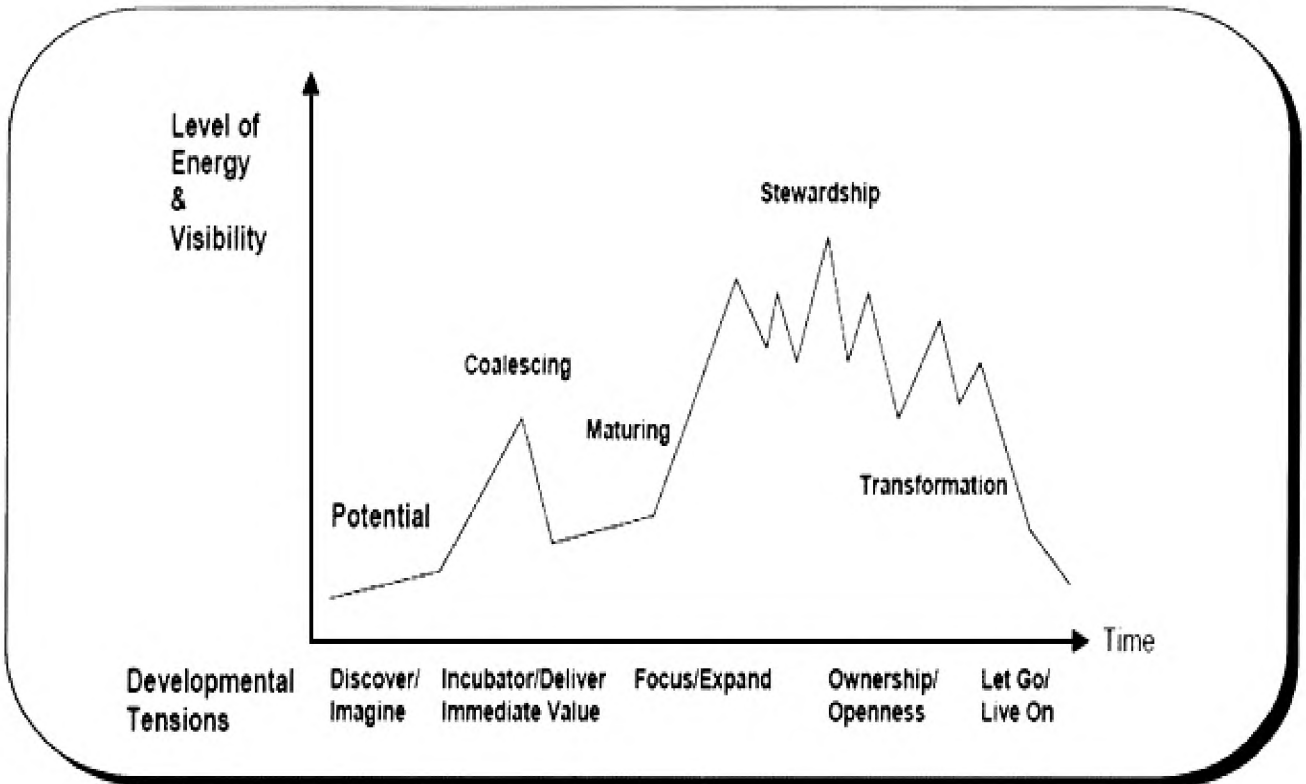


degree of self-awareness which Wenger (2000) describes as the need for CoP members to uncover latent possibilities and have multiple perspectives of things.

These social competencies work together and come about as a result of knowing. Learning within a community of practice is usually at the centre of social competency and personal experience; it comes about as a result of tension and conflict between the two when they occur in one space (Wenger, 2000). This can be seen when members in a community of practice are either new to the community or exposed to a different context other than theirs. Wenger (2000) notes that this exposes limitations and strengthens community members to contexts different from their own community, resulting in sharing the new acquired knowledge with peers and communicating experiences in an attempt to explain the new discovery in the hopes of expanding their understanding. Though social competency and personal experience are at interplay they influence each other in a social setting, thus, social learning takes place in the tensions of each other. The idea of social learning is discussed further in the chapter. Additionally, the embodiment of the three social competency elements by a CoP propagates the matter of identity first of individuals in the CoP and then as a collective CoP.

### **2.2.2 Communities of Practice Life Cycle**

Communities of practice (COP) undergo a life cycle (see Figure 2.1 below) which comprises of stages including potential, coalescing, maturing, stewardship and transformation. According to Wenger et al. (2002) the potential stage is when people with similar interest in the domain or enterprise forms a loose network where they discover common ground and imagine them being a community. The coalescing stage happens when the community is launched and initial roles and activities are designed. These two stages of the Imvotho Bubomi Learning Network were already investigated in Weaver's (2015) study. The third and fourth stage is maturing and stewardship, these will be discussed in detail in the section below because they are stages at which the Imvotho Bubomi Learning Network were at the commencement of this study. Lastly, is the transformation stage, where the CoP is noted to have fulfilled its potential, celebrates accomplishments and potentially rethink its role and practice.



*Fig 2.1: Stages of a CoP life cycle (source Wenger et al. 2002)*

### **2.3.2 Maturing and Stewardship Stage of a Community of Practice**

The maturing stage of a CoP is different from the previous potential and coalescing stages. The former stages focus on the birthing of the CoP in relation to defining its enterprise and its members' sense of belonging (Wenger, 1998). The maturity stage looks more at defining boundaries on the basis of expanding the domain and practice. The emphasis on the domain shifts to defining its role in the CoP and in relation to other domains and communities (Wenger et al., 2002). At this stage the CoP is no longer an isolated community but one that sparks interest from onlookers and newcomers due to its effective ways of sharing knowledge. Wenger et al. note that, "during this stage, communities often find that their domain, membership and practice are all expanding simultaneously..." (2002, p. 98).

The community expands in the sense of members getting to know each other's styles, approaches, strengths, weakness, perspectives, notable contributions et cetera (Wenger et al., 2002). By knowing all this, this stage showcases a level of intimacy in which members are

engaged. As earlier mentioned, as communities expand during this stage of the life cycle, outsiders get interested resulting into wanting to be a part of the CoP. Wenger et al. (2002) cautions that this poses a threat in terms of the community's focus and growth because when newcomers join in there is the potential of losing momentum with already established intimacy and interests of the domain. This is because the joining of new members may constantly discuss basic knowledge about the domain and not cutting edge knowledge that may contribute to the expansion of the domain, subsequently, leading to not achieving the goals of the core group but of the newcomers (Wenger et al., 2002)). However, this can be resolved by old members mentoring new members about the community's enterprise and activities. Wenger et al. expounds this by suggesting that, "new members should be sponsored by a current member and sit down with that member before attending their first meeting to get the background on the community's purpose, history, sCoPe of activities and norms of interaction" (2002, p. 99).

When the CoP begins to share knowledge about its domain it sparks interest in newcomers and onlookers because it is no longer operating in isolation. Members begin to identify and develop the learning agenda through tracking their activity developments and what they are doing with their enterprise so that their learning agenda can evolve (Wenger et al., 2002). By tracking development, they begin to organise their own knowledge repository, and this can be seen through documenting activities, collating meeting minutes or building threaded discussion (Wenger et al., 2002). All this is done in order to provide access to their knowledge domain.

Wenger et al. (2002) note that the maturity stage is superseded by the stewardship stage in the CoP life cycle. Here they note that relevance of the domain is maintained as members try to find a voice in the wider community. Members begin to take pride in their domain and their developed shared repertoire such that they share it with those not in their CoP in hopes of influencing their practice (Wenger et al., 2002). The members constantly identify new opportunities to take, new challenge such as training and sharing knowledge about their enterprise with others, subsequently resulting into forging new alliances with people out of the CoP and bring about a shift in ideas. This helps in sustaining the momentum (Wenger et al., 2002). Additionally, during this stage, the CoP seeks to have a voice in the wider community beyond their own boundaries. They begin to take up initiatives that result in rejuvenating the

community which ultimately helps them in developing new ideas and practice. Wenger et al. (2002) suggest this is done by meeting other communities which spur interests among the different communities and its members. Furthermore, the stewardship stage sees CoP core group members actively recruiting new members to the core group and giving them leadership posts which usually come after they are mentored (Wenger et al., 2002).

However, in order for a CoP to succeed there should be dependency on sharing knowledge across and beyond its community around the core knowledge requirements (Wenger et al., 2002), thus emanating the CoP members' stance on becoming stewards of the knowledge. This is because the knowledge becomes an integral part of the CoP members through their actions and interactions; subsequently their being serves as a repository of the knowledge (Wenger et al., 2002).

Nevertheless, Wenger et al. (2002) point out that COP "steward" knowledge by providing social platforms and forums that support the living nature of knowledge, which then the stewardship depends on informality and autonomy due to the CoP's function as a "source of knowledge and arbiter of expertise" because the knowledge experts, "link and coordinate unconnected activities and initiatives addressing a similar knowledge domain" (p. 14). Through this stewarding knowledge, they create value for themselves as members and for the wider community with which they share the knowledge with (Wenger et al., 2002).

Wenger et al. (2002) relate the stewardship stage to being like a community librarian because just like a librarian the community of practice connects people with experts in the field and also provides information to people and fellow practitioners about helpful resources. In order to make the above possible, they review and select relevant materials suitable in helping the person in need.

The Imvothu Bubomi Learning Network practiced this stage of stewardship to some extent by programming and broadcasting radio shows to a larger community in the public sphere on rainwater harvesting and conservation practices. Taking up stewardship as a stage of maturation is firstly about maintaining relevance of the enterprise by finding a voice in a larger community. Secondly it is about keeping the energy of the community lively and engaging among members

within itself. This is one of the aims of this study, which is moving from a voice within the emerging community of practice to finding one in a larger community using the radio as a platform to do this (see Section 1.4). Lastly, it's about maintaining its practices and keeping the community on the cutting edge of the community (Wenger, McDermott & Snyder, 2002). In a nutshell the focus of the community of practice shifts – not entirely – from sharing tips and ideas to a more stewarding the community of practice approach. This happens when social competencies of a CoP are taken into consideration so as to bring about social coherence.

### **2.3.3 Community of Practice in a Landscape of Practice and Peripheral Boundaries**

The initial formation of a CoP deals with negotiating and renegotiating identities of members (Wenger, 1998). The continual mutual engagement of members towards an enterprise creates individual knowledge ultimately leading to negotiating experience in relation to the CoP as a collective. It is the result of a lived experience of participation of CoP members where they constantly renegotiate themselves as individuals in order to be recognised in having one identity as a CoP (Wenger, 1998). In community membership context, knowledge is as a result of continuous collaborations and as a form of individual power (Wenger, 1998). In the long run, CoP members begin to make their own interpretations of the enterprise in order to make it their own. Once this is so, they come up with events where they share their collective identity beyond the boundary of their own CoP (Wenger, 1998). As Weaver's (2015) study suggests, the IBLN is a landscape of practice because of the many individual identities that every member brings to the network and contributing its boundary of practice.

When it comes to boundaries of a COP, the continuous mutual engagement of the practice allows for peripheral access of participative connection. This space is occupied by members who are well acquainted in particular skills such that when they are not present other members have an idea of how to go about something which is usually due to what Wenger calls a “complementarity of participation” (Wenger, 1998, p. 111). Additionally, working in a landscape of practice creates space for outsiders to have an experience of the CoP's practice; however, by doing this, the outsiders are not subjected to becoming full members. Wenger calls this a periphery practice based connection (Wenger, 1998). Among other forms of engagement with outsiders this can be in the form of observation; a good example of this would be how the IBLN

had a training event where they demonstrated their enterprise to a group of farmers (see Section 3.5.3). Also, their expansion into radio production can be classified as a kind of peripherality because they let outsiders in by providing a service via the radio. Wenger (1998) likens this to members providing public relations dialogues or being in a space that allows public scrutiny like being part of a radio broadcast.

#### **2.3.4 Identification and Negotiability**

Wenger (1998) credits the aspect of identity in a community of practice to the different modes of belonging such as engagement, imagination and alignment in relation to an enterprise that members have invested in. The aspect of identity can be defined in both a participative and reificative manner. The latter being a process of identifying as or being identified as something or someone – a category, a description, a role, or other kinds of reificative characterization. On the other hand, it is a participative process of identifying with something or someone; that is, developing an association whose experience is constitutive of who we are, (Wenger, 1998, p. 191).

For instance, a listener hearing someone with whom they are familiar on radio can be considered as identification by a reificative manner while a listener agreeing with something or someone on radio can be identification by a participative manner. This then means that identification involves a process that is subjective and relational, happening in a socially organised manner (Wenger, 1998). Identification is the result of the self being invested in the enterprise, more especially in a CoP where mutual engagement is inevitable; identification can be a result of time invested in both dynamic relations and in the enterprise (Wenger, 1998).

In the case of the Imvotho Bubomi Learning Network, identification can come about as result of members' daily using different rainwater harvesting practices. They will see or identify what practice works best with another practice (participative) and through their continuous mutual engagement of the enterprise a member is likely to identify which fellow member can be of help to them (reificative).

Wenger (1998) additionally, points out that identification can also happen in the form of imagination involving members building a picture of the world for them and for the world to see, subsequently determines how the world understands and engages with the practice. He further considers ICTs as mediums that have helped changed these perspectives because they create a space for individuals who don't know each other to identify with and to something or someone a media platform (Wenger, 1998). For instance, having individuals identifying with a radio station because of a particular topic, they identify with possibly due to their interest or background which leads to them developing relations of identification with fellow listeners locally or globally depending on the frequency of the station broadcasting. This then means that, "identities can expand and spread along the tentacles of wires and planetary dimensions" (Wenger, 1998, p. 194). Furthermore, at the heart of it all is the negotiability of the enterprise.

Negotiability is the process of contributing a particular issue in a social configuration (Wenger, 1998). So, in a community of practice context it is the ability of allowing community members to contribute to an enterprise of the CoP. The end result is making meaning of the enterprise which allows solutions for circumstances because it is done in mutual collaborative engagement with other members. According to Wenger (1998), these ecologies of meaning lead to ownership of meaning, which is when members achieve personal meaning of the enterprise and not mastery because in the process of negotiating the enterprise, the meaning becomes intimate, ultimately becoming a part of who they are as individuals. Hence negotiability is, "shaped by relations of 'ownership of meaning' – that is, the degree to which we can make use of, affect, control, modify, or in general, asset as ours the meanings that we negotiate." (Wenger, 1998, p. 200).

## **2.4 Social Learning**

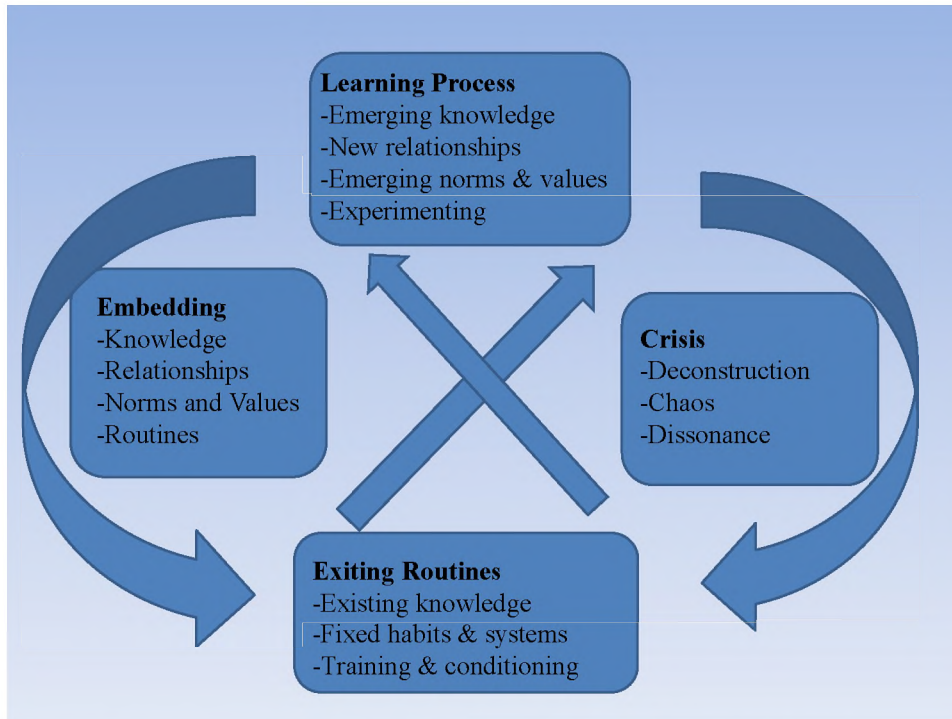
Social learning is a concept coined in 1977 in the works of Albert Bandura. Literature suggests that it is term with a contested meaning. For instance, in later years after Bandura's work Lave and Wenger (1991) used the term to describe it as learning as an active participation in a community of practice. While others have related the meaning to stakeholder participation or its' stipulated outcomes (Pahl-Wostl, 2006). Nonetheless, it is literature like that by Reed, Evely, Cundil, Fazey, Glass, Laing, Newig, Parrish, Prell, Raymond and Stringer (2010) that argues that learning takes place in a socially orientated manner, thus agreeing with Lave and Wenger's

(1991) point that learning can take place via actively participating in organisations and communities of practice.

Nevertheless, for this study I draw my understanding of social learning from Wals, van de Hoeven and Blanken's definition as "a way to arrive at a learning system in which people learn from and with one another and collectively become more capable of withstanding setbacks dealing with insecurity, complexity and risks..." (2009, p. 8). This definition emphasises the aspect of collaborative learning towards sustainable development. The collaborative learning cannot only be in the form of formal education but can be transgressed to informal community settings of learning (Hart, 2007). The transgressions are usually an educational response to a multi-dimensional environmental problem such as climate change. Dyball, Brown and Keen (2007) note that collaborative learning with people of different backgrounds, experiences and expertise results in action oriented solutions. Therefore, for social learning to occur there should be a change in an individual's understanding of a phenomenon from the initial being. Reed et al., (2010) notes that this learning brings or leads to social change or change in understanding of either an individual or collectively beyond their boundaries of either their social unit/s or COP. This clearly speaks to this study in the sense that social learning occurs because of the different ideas and experiences on rainwater harvesting held by individuals which they share in an interactive manner over information transmission from a radio programme in a 'social space' or as Habermas (1981) would put it, 'public sphere'.

Furthermore, this study used a learning system model presented in Wals's et al. (2009) which was cited from the works of Hurst (1995). This model (see Figure 2.2) suggests that social learning is like a system where calmness changes to disruption when new ideas are brought forth for it to be stable again. When periods of instability happen again the individual is able to cope because he or she has learned from it and knows how to be and make the system stable again. It starts off with noting existing routines that people may have, and then new ideas are introduced which brings about a crisis and thereafter a learning process and lastly, embedding of new ideas that came about through the learning process.





*Figure 2.2: Learning system, Wals et al. (2009, based on Hurst, 1995)*

Belay (2012) used this model in relation to Wals (2007) sequential moments of social learning processes related to the model in Figure 2.2. Wals (2007) outlines these five moments as:

- Orientation and exploration which is identifying the key issue, concern, challenge or the actual ‘wicked environmental problem’ in relation to their context experience, sense of purpose and background;
- (Self) awareness rising were individuals become aware of their own frames in relation to the topic which then leads to the third moment being de-framing or deconstructing. This moment entails challenging each other’s frames in terms of clarification and also challenging one’s own frames;
- Co-creating sequence moment where there are ideas from the deconstructing process are joined together and a possibility of alternative ideas are welcomed;
- Applying/experimenting of the new ideas into collaborating actions to test if they work towards meeting the needs of those that initially brought them together; and
- Reviewing moment where it is reflection process that entails bringing the changes or new ideas in terms of initial frames.

This is similar to the proposed five strands of Dyball et al., (2007) of social learning (reflection, system orientation, integration, negotiation and participation) which when they overlap lead to sustainable environmental management.

Having proposed the five strands of social learning of Dyball et al., I would like to zero on two of the five to justify the model in Figure 2.2 and Wals (2007) sequence moments of social learning. According to Dyball et al., (2007) reflection involves the process of social learning occurring when individuals share ideas and experiences either at personal, interpersonal, community or social level. The sharing of ideas causes reflexivity because it reveals how our perspectives, experiences, ideas affect the learning processes. This causes a consideration for rethinking perspectives and considers new insights and knowledge. Then the last strand they propose, negotiation and collaboration, suggests that individuals within collaborative learning are exposed to a form of negotiation when talking about the environmental problem. This is because of the different identities that they have as individuals. Through this negotiation of ideas is where conflict or dissonance arises. Wals (2007) and Belay's (2012) research findings strongly agree that dissonance is the precondition for social learning to take place, for without it, there is no learning.

Belay (2012) whose study was on participatory mapping, learning and change in the context of biological diversity and resilience, used this combination of the model and the sequential moments. He used this combination in terms of capturing and interpreting: pre-mapping activities which included sequences orientation and exploration; then the actual mapping process attributed to sequences awareness raising, de-framing or deconstructing and co-creating because the three processes are likely to occur at the same time; and lastly post-mapping activities being linked to the last two sequences of applying and reviewing (Belay, 2012). Likewise I adapted Belay's (2012) combination of the two frameworks in order to interpret the enhanced social learning in the simulated participatory radio listening group. By capturing data relating to the group's existing routines of the practice I was able to interpret the sequential moment of orientation and exploration and in the crisis and learning process of the model in Figure 2.2 I was able to interpret the sequential moment of awareness raising, de-framing or deconstructing and

co-creating. Lastly, in the embedding process according to the model I was able to interpret the sequential moments of applying or experimenting.

## **2.5 Articulation in Practice**

In practice, the community of practice shares a common body of knowledge which is their foundation and allows them to work effectively. The community explores this existing common body of knowledge as well as the latest knowledge arising in the field. This is done so as to be familiar with their community repertoire (Wenger et al., 2002). Knowledge of the repertoire provides resources for the community that enables members to handle new matters and also to possibly create new knowledge. Through this there is innovation because the practice provides a platform and language to share ideas by the community. These shared resources as Wenger et al. (2002) note often vary in terms of different knowledge types such as tangible and intangible ones. Tangible repertoire include articles, case studies, lessons learned, theories, models and best practices, while intangible repertoire are those that “embody a certain way of behaving a perspective on problems and ideas, a thinking style and even in many cases an ethical stance. In this sense a practice is a sort of mini – culture that binds the community together.” (Wenger et al., 2002, p. 39).

Looking closely on the intangible repertoire, I drew on Stuart Hall’s Theory of Articulation to elaborate it further in the context of this study. Hall’s (1980) theory originated from Bruno Latour’s work and described articulation as a way of examining how different elements are combined to serve an interest or worked towards a particular interest. In the process of creating these connections of ideas, groups or people, is how people come to know and learn (Hall, 1980). This is because the receiver of the message gets to make meaning of it by relating the message to the question of why rather than what it is about, hence making the theory much different from most communication theory, like Laswell’s theory of communication. This is useful literature for the study because it helped to examine how propositions (individuals making articulations) connected ideas, people or perhaps groups around the topic of rainwater harvesting. By doing so it helped to analyse the evolution of the practice and how its knowledge integration results into a reflection of the member’s perspective in storytelling on radio.

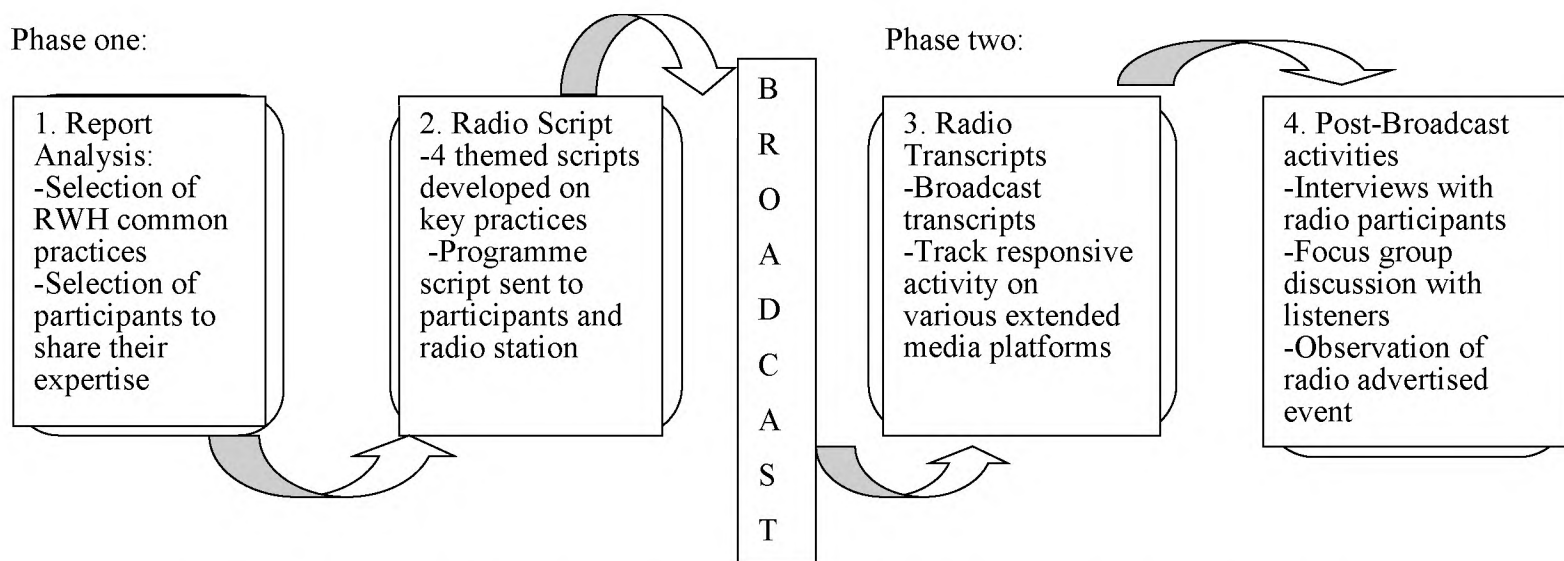
## **2.6 Conclusion**

The purpose of this chapter was to situate the study in relation to relevant literature. A brief synopsis suggests that the use of community radio in environmental education has not been widely used; neither has research relating to agricultural participatory radio campaign approach in the field of Environmental Education. This conclusion was reached through an exploration of theory, concepts and previous studies. The next chapter reports methodology used in the study.

## Chapter 3: Methodology

### 3.1 Introduction

This chapter describes the research design decisions that informed the methodology for the study. It outlines the research process, approach, methods, data generation techniques, data organisation and data analysis. Figure 3.1 illustrates the research process. I follow this illustration to present an account of the research design, the development of the research process and insights that emerged through the study.



*Figure 3.1: Imvotho Bubomi Learning Network Expansion into and through a Radio Production Research Process*

### 3.2 Research Orientation

An interpretative perspective was used in order to understand how Imvotho Bubomi as an emerging Community of Practice (CoP) was further expanded through radio programming. The study was centred on the radio programming processes and on what occurred in the public sphere after the broadcast, as shown in figure 3.1. Thus, data was generated from lived experiences of the participants in the expansion of the learning network into radio or who became involved in learning about rainwater harvesting through the radio. Cohen, Manion and Morrison (2011) describe an interpretive paradigm as a perspective which attempts to understand an individual's experience from within his or her subjective life experience of a particular topic or matter. By

generating data on the experiences of participants, this project focused on the future oriented action that developed through learning experiences, a process which Cohen et al. (2011) justify as “behaviour-with-meaning,” (p. 17). It was this action-emergent meaning that became my concern in a view of the radio programming process and associated expansions of the learning network and its activities.

Cohen et al. (2011) further note that “actions are only meaningful to us insofar as we are able to ascertain the intentions of actors to share their experiences,” (pp. 17–18). This meant that through the data generation methods described in Section 3.3, I was able to represent and probe the experience of being part of an expansion into radio programming as well as explore some of the learning associated with the radio programming and its broadcast. This was achieved by generating data through observations, interviews and focus group discussions both within the radio programming and following broadcast.

### **3.3 Research Design and Approach**

As explained in Section 3.2 and illustrated in Figure 3.1, this research process was based on an interpretative case study research design, which Yin (1994) describes as an investigation of a problem in its context and is backed with human subjective interpretations. This decision came about because the research was part of a bigger project – Amanzi for Food – as explained in Section 1.1. 1. This particular study was a case study of the Imvotho Bubomi Learning Network within the Amanzi for Food project. My research interest was the network’s transformation from a course based approach to radio production.

### **3.4 Research Population and Sample Frame**

A research population is a large collection of individuals which are the main focus of a scientific query (Bless & Higson-Smith, 1995). The population of this study was the Imvotho Bubomi Learning Network and a group of homestead and smallholder food growers in Middledrift, Eastern Cape.

### **3.4.1 Imvothu Bubomi Learning Network (IBLN) Sampling Technique**

During the IBLN strategic planning meeting on 14<sup>th</sup> January 2016, I was given an opportunity to present how I could be of help in their expansion into radio production after they addressed their interest in such an initiative. The group comprised of farmers, extension officers, agriculture college lecturers and non- governmental organisation personnel. The technique I used in choosing these participants was homogeneous purposive sampling, which Sarantakos (2005) describes as choosing units of analysis or participants that the researcher thinks will be relevant to the study of a uniform interest, in this case RWH. I specifically chose this group because they had undergone a training of trainers course on rainwater harvesting. One of them had come to learn and know about the Amanzi for Food Project through a radio programme broadcasted in 2015.

### **3.4.2 Middle Drift Radio Listening Group**

On 30<sup>th</sup> March 2016, I was given an opportunity to meet a group of farmers, comprising both smallholder and homestead food growers, during their monthly meeting with extension officers at the Middledrift office. Here as per Sarantakos (2005) I employed the sampling technique of snowball where I had initially called one of the farmers in the learning network to refer me to farmers who would be interested in participating in this study. She brought to my attention a monthly meeting which farmers in the area attend. I contacted the agriculture extension controller of Middledrift for a formal invitation. After giving a synopsis of what the study was about, eight farmers indicated that they were interested in participating and they proposed a day that suited them for our first meeting which was Monday 4<sup>th</sup> April 2016. From there, we had two more meetings with numbers of participants decreasing from ten to four to three after each meeting. The decrease was attributed to lack of transport and clashing with other commitments.

## **3.5. Research Methods**

The radio programming was developed through an analysis of Amanzi for Food Project Reports. This analysis was used to frame the radio programming content and to select participants to contribute their stories on the radio (see Figure 3.1). Appendix A provides the scripts for the radio programmes.

Scripting and the tracking of the outcomes of radio broadcast were developed in two phases. The data was generated with small scale farmers and food growers who were part of the learning network. The development of the radio programming (Phase 1) was undertaken with members of the existing network to produce the radio programmes that were recorded. The transcripts of the radio programme broadcasts were compiled for the case record (Appendix B).

In Phase 2, I developed an interview guide to follow-up and capture some of the key outcomes of the radio programming. This work was done with a listener group, members of the learning network who participated in the process and at a farmer training activity that was promoted through the radio broadcasts. The outcomes of these research processes were compiled in three data sets:

- Focus group interviews with listeners after two of the broadcasts (Appendix C)
- Follow-up interviews completed by the learning network members to capture their experience of being part of the programming (Appendix D),
- Observation records at the farmer training event that followed the radio broadcasts (Appendix E).

### **3.5.1 Report Analysis for Key Rainwater Harvesting Practices**

For the purpose of selecting content and stories for scripting the radio programming, I carried out document analysis. The process of content selection involved my reviewing of previous radio programme scripts which were broadcasted in 2015. I did this to get a sense of what was said on air and how it could be strengthening for the 2016 broadcasts. I also reviewed the project reports to pick out water conservation farming practices that were emerging among the learning network members. Some of the common practices identified for the proposed broadcast scripts were:

- Mulching
- Grey water
- Tide ridges
- Ponds (*amadanyana*)
- Diversion furrows
- Infiltration pits (*galesha*)
- ‘A’ frame



In addition, I attended the Imvotho Bubomi Learning Network annual strategic planning meeting held on 14<sup>th</sup> January 2016. During this meeting the network showed interest in expanding into radio programming. As a result we centred the programming theme on *the need for farmers to think ahead in times of drought*.

### **3.5.2 Documenting Learning Experiences**

I used radio programme scripts in order to see how the network explained their enterprise of rainwater harvesting as a CoP. Being part of the Amanzi for Food team, I was responsible for managing dissemination of rainwater harvesting knowledge on various media platforms. I had to produce the seven radio programmes between 2015 and 2016. I based my study on data from four radio broadcasts produced between February to April, 2016. These were run as a sequence and were embedded on the drought experienced in South Africa. Here a key focus was on exemplifying how farmers could think ahead of time in preparation for their late summer crops and animal production into winter.

The radio shows were broadcast on 15<sup>th</sup>, 22<sup>nd</sup> and 29<sup>th</sup> February and 11<sup>th</sup> April 2016. The shows were spaced out because between 29<sup>th</sup> February and 11<sup>th</sup> April the radio station, Fort FM lost its frequency signal, its Agriculture slot was given off to a national address and lastly due to not having enough in studio feedback on one of the 2015 shows because it fell on a public holiday (27<sup>th</sup> April 2015). I was very cautious of not having one of the 2016 shows falling on a public holiday. I recorded each of the four radio broadcasts and later transcribed them with the aid of an isiXhosa speaker who transcribed the isiXhosa parts

### **3.5.3 Probing the Learning Outcomes and Expansion of the Learning Network**

After each radio broadcast, I reviewed the broadcast transcripts and interviewed learning network members who had shared their knowledge and stories on the radio. I did this through face to face semi-structured interviews with three members and sent the interview guide to three other members who were unable to meet physically. I also had a radio led event observation which was advertised during the second radio programme; and a focus group discussion with listeners who were not part of the learning network or the radio broadcasts. Face to face semi-

structured interviews were done so as to increase comprehensiveness of the data generated in a systematic way (Cohen, Manion and Morrison, 2011). In this case the interviews enabled me to review the key attributes of the rainwater capture and water conservation farming practices developed in the radio broadcast scripts.

The focus group discussion was with listeners. This allowed me to discuss the radio broadcast topic in a conversational manner after participants had listened. As the researcher, I steered the focus group discussion with questions. This helped me capture the essence of the social learning among the farmers. I called this process a participatory simulated radio listening group discussion. As discussed in Section 2.1.5 this process is a different concept from the traditional concept of radio listening clubs proposed by the Food Agriculture Organisation (FAO). By doing this, an opportunity for the listeners that did not listen to the show was created and refreshed the minds of those who listened but had forgotten. So the recorded broadcasts saved as a model radio with immediate feedback from the actual listeners in that setting. A translator helped me in the translation during the focus group discussion process.

Initially I gained access to two groups of farmers in Alice and the other in Middledrift. After the first meeting, the group in Alice were not responsive for a second meeting, and excused themselves from the meeting. On countable times they did not avail themselves. Ultimately, I concentrated on the Middledrift farmer group.

In addition, the drawback of using focus group discussion as a method of collecting this kind of data was that even though farmers opened up in the discussion, some other farmers never voluntarily gave input. I had to occasionally probe them to give input because I feared their voices would be side-lined by stronger voices.

I made general observations each time I was in the field and I got to write them in my research journal. This became my field notes because the space allowed me to reflect on the study. Furthermore, I did an observation of a training event that was advertised on the radio by the learning network in a village called Gwali. This technique helped me gather data live in its

natural setting and not depend on second hand information (Cohen, Manion and Morrison, 2011).

### 3.6 Analysis

For this study, I analysed data in two stages. In the first stage, I read all the transcripts pertaining to each data set and thereafter begun coding the categories that emerged from them (see Table 3.2). I did this in order to reduce the data from various data sets into one analytical memo (see APPENDIX G). This process is known as inductive analysis. The coding enabled me to highlight emergent themes in the categorised data and right next to sentence I wrote the theme in pencil (see APPENDIX H for an example). I then used the analytical memo produced in stage 1 for stage 2 of analysis. In stage 2 I mapped out themes using theoretical lenses of Community of Practice theory and social learning. This process of analysis is called abductive analysis. The theoretical frames enabled me to identify meaning making processes and social competencies, the latter which Wenger (1998) outlines as:

- Joint enterprise,
- Mutual engagement,
- The emergence of Shared Repertoire, and
- Identity as being engaged in a shared practice.

This framework allowed me to identify expansion of the learning network and to map categories within the emerging learning transactions. Table 3.1 summarises the categories developed in the inductive analysis, how these were characterised in the detail of the emerging themes and the essences of these processes that appeared to be driving the emergence of enhanced water conservation farming practices.

*Table 3.1: Category list derived from stage 1 inductive analysis of data*

Phase 1: categories relating to the expansion and enactment into radio programming		
Category	Emerging themes	Data essence
Network talk	Personal story Roles and responsibilities Training Relationships Practice in personal story Membership Resources	How they learn (through sharing of experiences, stories ,books, visiting one another); sharing their identity (as a network) with people beyond their network as a whole; Identification of diversity; shows effects of network into individual work experience and personal lives
Practice talk	Drought	Shows a linkage of practice to different

	Chemical (greenhouse gasses) Soil erosion Evaporation Techniques in practice Chemicals in tap water	elements which are in the sub theme column under practice
Indigenous Knowledge	Resources Personal story	
Personal story	Personal story	
Drought	Personal stories	Drought in personal stories
Demonstration site talk	Personal stories practice	
<b>Phase 2: Categories relating to the enhanced learning</b>		
Indigenous knowledge	Personal story practice	Associating practices with IK through making reflections.
Practice talk	Chemicals in tap water Drought Dangers Personal story Experimenting	Practice articulations were made in relation to emerged sub themes in order to create meaning of practices. Also, did experiments in order to learn from them – learning by doing.
Demonstration site	Practice Visitations Personal stories	Captures the essence of learning by seeing and doing.
Network talk	Theme acknowledgement IBLN members	IBLN being seen as a knowledge information hub.

### 3.7 Data Management

All collected data was indexed according to the table below (Table 3.2) and was analysed. I kept a backup of my data by saving it on my computer and in my Google drive. In addition, I had someone translate and transcribe my audio interviews and focus group discussions with participants that were isiXhosa speaking. Nevertheless, I transcribed interviews that were in done in English.

*Table 3.2: Data index codes for each type of data*

Data Code	Data code meaning	Data generating method	Data source
RSP	Radio script programme	Four radio talk show discussion scripts	I formulated this with regards to a report analysis of common practices in the IBLN
RFN	Research field notes	Journal entries and various notes written during field visits and informal conversations and my own observations	Encounters with all participants in the study
RTP	Radio transcript programme then a number to indicate which one	Four radio talk show discussions transcripts	IBLN members on radio
RTP-LF	Radio transcript (number) then Learning network farmer with a number to	Four radio talk show discussions transcripts	Two farmers from the network who were on radio

	indicate who		
RTP-LE	Radio transcript (number) then learning network educator with a number to indicate who	Four radio talk show transcripts	Two educators from the network who were on radio
RTP-LT	Radio transcript (number) then learning network trainer with a number to indicate who	Four radio talk show transcripts	Two trainers from the network who were on radio
RTP-LS	Radio transcript (number) then learning network student with a number to indicate who	Four radio talk show transcripts	Two students from the network who were on radio
RTP-LR	Radio transcript (number) then learning network researcher with a number to indicate who	Four radio talk show transcript	Two researchers from the network who were on radio
LIF	Learning network interview with a farmer	Semi-structured interview	One farmer from the network who was on radio after broadcast
LIT	Learning network Interview with Trainer then a number to indicate with whom	Semi-structured interviews	Two trainers from the network who were on radio after broadcast
LIE	Learning network Educator interview then a number to indicate with whom	Semi-structured interviews	Two educators from the network who were on radio after broadcast
LIS	Learning network Student interview	Semi-structured interview	One student from the network who was on radio
RLD	Radio listening discussion then a number to indicate with whom	Three focus group discussion	Seven farmers across three sessions of radio listening

### 3.8 Validity: A Tale of Two Hats

Validity can be described as a process or approach that poses threats to a research (Maxwell, 2009). Maxwell (2009) further explains that there are usually two common threats to a research which are researcher bias and reactivity. While working on the Water Research Commission Amanzi for Food Project, I had to constantly remind myself that I was wearing two hats when I was in the field. At times these two hats were vividly distinguishable, while at other times they were not and it was necessary to remind myself that though I was working in the project I was also a researcher. Maxwell (2009) points out the main two threats to validity are usually bias – which is the distortion of data collection – and analysis by the researcher due to his or her preconceived theories and values they pose. This eventually leads to how a researcher maintains integrity.

One example of how I maintained validity in this way was during one radio show which was aired on February 29<sup>th</sup> 2016, where one of the learning network members asked me prior to the show about how an '*A frame*' is constructed. At that time, I was radio programme producer of the four week series on rainwater harvesting and so had produced the radio scripts for the panellists and had sent them two days before the broadcast for their preparations.

At that moment, I was unable to tell her how an '*A frame*' (a RWH&C practice) was constructed because my researcher hat was on and my telling her would have been distorted during my analysis of the radio programme interview transcripts because I was not sure if she would have quoted me word for word while on air and used my jargon which I was going to be analysing. As a result, I could not help her and she quickly said she would ask one of the other panellists to explain the construction of an '*A frame*', to which the other agreed but did not explain it while on air. Though I maintained integrity for my study by doing so, I realised afterwards, however, through a peer review discussion with other students that I could have reminded her why I was unable to explain how an '*A frame*' was constructed so as to maintain the relationship between the two of us.

Nevertheless, in attempts to provide ways in which validity threats can be dealt with and increase credibility, Maxwell (2009) proposes a few ways which I adapted to during both my data collection and data analysis. He proposes that there should be long-term involvement with the participants. This was made possible by having radio listening focus group discussions with two groups of farmers over three meetings to not only ensure social learning processes, but also to seeing value aspects of the information they were receiving from the radio and how they were articulated. This, I could not have generated from one meeting with them. In addition, due to the constant meetings we had and my use of different data generation techniques, (including my keeping a research journal) I was able to collect what Maxwell (2009) refers to as rich data.

It was "rich" because it was fully detailed which was a result of my transcribing immediate translations from the farmers and also having a translator translate the recorded audios in

isiXhosa to English. The data was rich because it was collected using different methods which also helped to ensure validity through the use of triangulating my diverse use of methods.

### **3.9 Ethics**

In order to ensure that my study was in line with ethics, I had to continuously be aware of the ethical concerns more especially since I was part of the Amanzi for Food Project. Below are some of the ethical considerations I addressed when I conducted this study.

*Access to research participants:* before beginning my data collection process I had to introduce myself and explain my research to the Imvotho Bubomi Learning Network during their strategic planning meeting in January 2016. Members in attendance showed interest in being part of the research. I did the same with the radio listening group of food growers and out of the numbers present in both instances those interested wrote down their names and phone numbers for a meeting.

*Informed consent:* after my initial contact with the research participants I drew up consent letters for the participants to sign, which Cohen et al. (2011) say gives them right to freedom and self-determination. In the letter, I made clear aspects such as a summary of what my research was about and volunteerism. An example of how volunteerism was exercised by the participants was when the farmer listening group in Alice decided not to attend the meetings as described in Section 3.5.3. Before getting a participant to sign I went through the consent form with them and sometimes with the aid of a language translator, to explain to them what each single point outlined entailed including a permission to use their photographs. At the end, I created a space for questions from them to which none were posed. During this time, I also openly shared with the research participants at Middledrift about my providing refreshments during the meetings. The meetings were scheduled to run for two hours (one hour for radio listening and one hour for discussion). I raised concerns that my providing refreshments might attract large participation as people might be more interested in the refreshments than in the research activity. The participants assured me that my providing food would not hinder their participation. I was reminded to take cognisance of the fact that they left their homes very early in the morning on empty stomachs due to problems of transport in their residential areas. They argued that they

would be hungry during the meetings. On the basis of their arguments and assurance of participation, I decided to provide refreshments.

### **3.10 Conclusion**

This chapter has highlighted the research process, the types of data generation methods I employed and demonstrated how I ensured validity and the ethical deliberations I had encountered during my study. I was constantly bringing the course of my study into play and how it would be shaped at every given time I was making decisions. The next chapter focuses on the representation of the findings and how it was analysed.



## Chapter 4: Findings of the Study

### 4.0 Introduction

This chapter presents findings of the study generated using the research methodologies as described in Chapter 3. The findings are presented in a chronological thematic manner that followed the emerging radio programming and the themes that develop within this process. The synthesised findings are attributed to sources which can be found in APPENDIX G. These narratives enabled me to probe for learning processes and trajectories reflected in the thick descriptions of learning interactions evident in short vignettes associated with the radio programming.

In this chapter I present and interpret report learning experiences and expansions that developed through the radio programming into wider learning interactions through the radio broadcast into the public sphere. Here my theoretical lens (CoP and social learning) was used to track and read the research data generated on the expanding learning process. This helped me document and understand the learning experiences, the expansion of the learning network and knowledge practices related to rainwater harvesting. In summary, the interpretive research tradition helped generate subjective knowledge in a constructed ontology where people's values were contingent and plural in a methodology reliant on interview and observation accounts of experience.

Further, the findings of this study have been presented with Wenger's categories as these enabled an in-depth reading of the data in relation to the expansion. Here what was notable were a shared history that developed through an emergent identity and shared practices in a joint enterprise of mutual engagement around common matters of interest that developed as focal points for learning. The chapter is concluded with the evidence of collaborative learning during a participatory radio listening activity with a group of local farmers. This served to explore areas of interest, collaborative learning in light of social learning processes.

#### **4.1 Imvotho Bubomi Learning Network Shared History of Learning**

The Imvotho Bubomi Learning Network was initially activated through a course based approach to the introduction of rainwater harvesting and conservation practices developed in the manuals produced by the Water Research Commission (WRC) (see Section 1.1.1 and 1.1.3). During the expansion into radio, members of the network often recalled and drew on their shared history of learning together. It was with the core group from the network that the radio programming was undertaken around a selection of key practices described in section 3.5.1 This was the first time that most members of the network were involved in radio programming and this became the focus of this study to investigate the associated expansion of learning and the learning network.

#### **4.2 Radio Production as a Means of Sharing Identity in Practice**

In the first radio show an educator emphasised their identity as a network. This served to capture the attention of the listeners as is evident in these extracts:

*We were a group of different stakeholders like your farmers, your researchers, extension workers, colleges, Rhodes University (RTP1-LE1 //141-143); Imvotho Bubomi is made up by different calibre of people. We have those who are lecturing, farmers, NEDA, Dohne [Agriculture] Research Institute (RTP4-LT1// 47-50); In this particular project a lot of people have come together to form a network which is called IBNL (RTP4-LR2 // 6-8).*

These representations exemplified who is involved in the network and a shared identity extended to those listening in. The radio programme participants noted that: *We share information of experiences one to another*” (RTP1-LE1// 204-209) and details of activities such as “*Within this network a number of [RWH] demonstration sites have been established and they are various different RWH structures that have been implemented*” (RTP4-LR2 // 6-8).



*Figure 4.1: shows of IBLN members in studio at one of the radio programming shows.*

The intention of the radio programming was to target people in the community by sharing information on rainwater harvesting practices. Here the idea was to involve “[People] who use their backyard gardens to feed their own families. They are our main target group. We have focused to improve local communities starting from grass root level” (RTP3-LS1 // 75-78). By doing this the intention was to help the community make the practice of rainwater harvesting for local food production their own.

The radio programme participants talked about how being part of the network had benefited them as individuals, subsequently contributing to their personal identity which comes in various ways other than being part of the training of trainers’ course. On review they noted that, “*This network has been helpful for me in that it has made me realise the importance of water and the importance of conserving*” (RTP1-LF1// 71-72). One participant pointed out that, “*The network has made me to know that water should be used in an appropriate way so that one may be able to irrigate his crops*” (RTP1 –LF1 // 72-74).

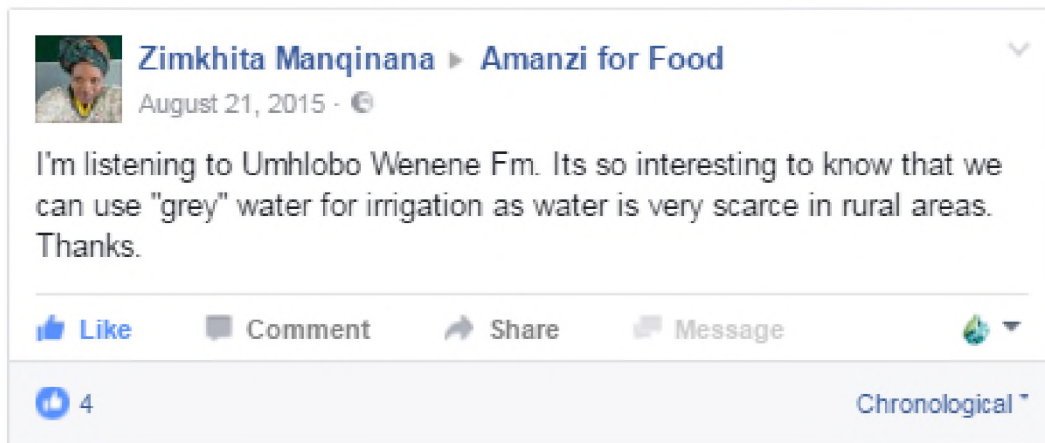
Furthermore, being on radio extended their shared identity because they were being recognised by listeners in the public sphere. A shared identity had already developed through the members of the network informing others prior to their being on radio. Here the hope was to bring their activities as a network to the attention of their colleagues (LIE2, //48-49). For instance, one participant said, “*I told my fellow farmers and the people that I am within the executive with the*

*Middledrift farmers association and Nkonkobe Farmers Association,” (LIF2, // 41-43), and another commented, “I did tell a lot of people.... I think it was close to 50” (LIT2//61-63).*

In addition, individuals came directly to the members to inform them after hearing them on radio and wanting more clarification on what they were talking about. After one broadcast a member of the network reported: *“I got response(s) from them [farmers not part of the network] that we heard you from the radio, while others want to make up appointments so that I can tell them more about what was said over the radio programme” (LIT1//13-15).* This information sharing was most common among the trainers of the network especially extension officers. Lastly, by virtue of being on radio, participants were exposed to a much wider community beyond those that personally knew them and through other media platforms. For instance, a member of the network noted:

*I even listened to another radio station which is not Fort Hare. It was Umhlobo Wenene with agriculture that continues in early morning on Fridays and so they were people that were talking about that they heard from Fort Hare. And they were giving contributions to this radio station about water harvesting. (LIF2//91-95)*

Not only were people making references and commending the network members on other radio stations but also on new media platforms such as Facebook, for example:



### **4.3 Theme of Radio Programme as Evidence of Joint Enterprise**

The main shared motive that the learning network members had when expanding into radio programming was sharing the reason why they were on air. The data below outlines elements such as negotiated enterprise. The sense of being involved in a joint enterprise is what Wenger

(1998) describes as the shared motive that the members have that brings them together (see Section 2.2.1).

As discussed in Section 3.5.1 the radio programmes were designed around the *theme of thinking ahead in times of drought*. This theme was echoed by the network members while on radio, thus ensuring their agenda of being on radio was well known. These interview extracts are good examples of how the theme was articulated:

*Farmers are advised to keep ready by taking this advice in preparation for the coming season because none of us know what will happen in the next coming summer.* RTP2-LF2, //252-254

*Farmers should protect themselves because the climate is changing and there is a lot of variability in season.* RTP3-LR2, // 265-266.

This themed information sharing was mostly coupled with an acknowledgement of the climatic condition of drought that the Nkonkobe District was facing and where both homestead and smallholder farmers were greatly affected.

The acknowledgement of drought and climate variability was made across the four radio programmes by different members of the network, one member noting, *“This drought has severely affected the farmers. There is no water at all”* (RTP1-LF1//82), while others pointed out, *“When it was no longer raining, farmers were in greatest catastrophe”* (RTP2-LF2//246-247) and *“This past season 2015/2016 if you talk to any farmer in the Eastern Cape, they will tell they had a lot of challenges because of the drought”* (RTP3-LR2//261-262). The drought in the area justified to the listeners their being on radio with the aim of educating listeners on their experiences and stories of using rainwater harvesting practices. In order to justify this one participant noted, *“I am glad that we are talking about rainwater harvesting in a year that has drought and I am sure that will give us more audience”* (RTP2-LF2//53-55) during the second radio programme.

#### **4.4 Mutual Engagement in Learning**

Mutual engagement is another dimension of what constitutes a community of practice and social competency. Wenger (1998) describes this dimension as one that establishes an avenue where community members talk and share knowledge with one another towards their enterprise. It outlines elements such as relationships, roles and responsibility and membership as elements helping in defining the competence (see Section 2.2.1b).

#### **4.4.1 Relationships**

As the network expanded into radio programming, it was noted that the relationships in the network were strengthened because the members worked together on a shared enterprise. Here one participant noted that *“it has improved in terms of interaction between farmers, between the extension officers, between the municipality and other government spheres”* (LIT2//10-11). The strengthening of relationships within the network was seen during their preparation for the broadcasts where a trainer reached out to an educator and a fellow trainer, revealing, *“I spoke to LE2 in Fort Cox and also LT2 from NEDA those are the people that I contacted [on] how to handle some of the questions that were in that prepared paper [radio programme script]”* (LIT1//31-32 and //34).

Furthermore, a strong relationship had flourished between a farmer and educators from an agriculture college. This was evident because the farmer lived near the college hence had easy access to the educators for advice and information (RFN). This was interesting because farmers ordinarily have stronger relationships with their agriculture extension officers. The participant noted, *“I was motivated to dig a dam of my own which is a 2m by 2m by 2m because I got motivated when we went to Fort Cox to see their dam even though theirs is big because they have bigger land...”* (LIF2//106-110). In addition, the WhatsApp group contributed to the strengthening of relationships as they continually reminded the other members in the group about radio shows and also commending fellow members who were on a particular show (RFN). One informant noted that *“On WhatsApp people were commending the groups that were on radio saying that it was an interesting discussion”* (LIF2//119-120). Additionally, during one of the field visits, the Fort Hare FM radio programme manager had joined the network and had taken interest in the learning network because he saw the network as a source of information for the station’s agriculture programme (RFN).

#### **4.4.2 Roles and Responsibility**

Initially the members had given each other roles and responsibilities to ease the functionality of the learning network as a CoP. However, not all members knew these roles at the time of expanding into radio programming, for example a trainer did not know the network’s chairperson

(LIT2//22-24). Nevertheless, the research data shows that these roles and responsibilities came into play more clearly during the radio programming process. For instance, the then training coordinator was given the responsibility to organise training with farmers in an area called Gwali, Msobomvu, and during this process she worked together with other members of the learning network (RTP3-LS1//57-60). She described how she went about this process:

*Currently, we do not have a scheduled training. Our target is to make a community to own this practice and be its own. So, each community should report the problem and state whether they desire to have this training. What usually happens at community level is that if you just bring something to them and say here it is and it is free, people usually do not show any appreciation and it appears as a useless programme. For example, in Gwali, we met with people from there and had a chat with them. When we asked them of their needs, they complained that they are working from early hours of the day but there is no water. They asked us to go and help them. So, we responded to that need because these people had explained their problem to us. As a training co-ordinator, I managed to organise a team made up of people with different expertise. Then we discussed the ways in which we were going to solve the problem at hand. We did not end there, we checked other things. My point is this, if a community is allowed to approach us and tell us their challenges, we as a team we will work from the risen need (RTP3-LS1// 226-238).*

This training was advertised on radio during their second programme (RTP2-LE2//315-318). Having attended the event, I observed that network members delegated different roles during the training. For instance, the educators and one farmer explained the different practices to the farmers. This was done because extension officers, who were the trainers responsible for this work were not present (RFN). Additionally, other members took up the role of being language translators for the group and to the farmers, while writing details of what was to constitute the report for the members who were not present (RTP3-LS1// 84-88).



*Figure 4.2: IBLN members demonstrating to farmers how mulching is done at Gwali, Musobomvu during the radio advertised training event.*

During the planning of the training, members without a particular skill reached out to those that had in order to do the work. For example, the training coordinator visited different members in the network who had in-depth knowledge on rainwater harvesting practices, thus acknowledging the skill sets that the other members were contributing to the network (RTP3-LS1// 53-57).

Overall, the expansion into radio programming was a responsibility on its own for the network as it was seen as custodians of rainwater harvesting practices in the differing contexts of their work (RFN).

#### **4.4.3 Membership**

As members of the learning network continued to broadcast on rainwater harvesting, the topic caught the attention of listeners. This was seen through their participation during broadcasts and also through their interest of wanting to join the learning network. This resulted into growth of the CoP in terms of interest from listeners or as Wenger calls them, onlookers (Section 2.3.2).

For instance, one network member specified that the listeners, *“had listened and they were interested and some asked if they could, how could they join or get access,”* (LIF2// 43-44). In other instances, this interest resulted in actual growth of the network. This happened when a smallholder farmer listened to a radio show as advised by her fellow farmer and extension officer who is part of the IBLN. She recalled:



*I listened to the radio show as I was advised and I heard that they were talking about Amanzi for Food, Imvotho Bubomi Learning Network. After that I wanted to know more about this thing and they explained it to me. Later on, they invited people to go to a show which was held at Cwaru on June last year [2015]. I found out that this practice is not new to me because I have been following it. I use indigenous knowledge in my farming practice. Indigenous practice follows/uses the natural things. As we know that the water from taps is being cleaned by chemicals. We do not want to use them in our plants. We prefer rain water. So, I found that I have more interest on this programme because it involves exactly what I have been doing. Thus, I joined them and I was called to attend a meeting which was held at Fort Cox College. When I joined the network, I was given a duty there and appointed as a deputy chair-person of Imvotho Bubomi Learning Network. From there, the rest is history because now I am fully in Imvotho Bubomi Learning Network. The importance of the programme/movement is that you cannot be a farmer without water. You will find out that we waste water and I also find out that there are varieties of ways on how we can save water” (LIF2//111-124).*

After joining the network, she was then later exposed to new knowledge due to the various members' expertise in the network and their histories of the knowledge they brought to the community. This contributed to her overcoming some of the challenges she was faced with before joining the network (LIF2//63-66). Similarly, her becoming a member of the network was seen as an achievement by other members of the network. One member in particular, a trainer (extension officer) mentioned that she had “*heard about the programme over the radio and was interested and now she is an active member of the network and she's practicing perma-culture where in perma-culture she does mulching*” (LIT1//59-61). In addition, as the radio programming continued, the radio station's programme manager showed interest in the network and eventually joined it. He did this as a way of getting information and guests for his agriculture show on the radio programme (RFN). Generally, across all the members involved, the expansion into radio brought a sense of confidence among them in terms of sharing knowledge as I observed this through their interest in continual of sharing knowledge on RWH&C via the radio (RFN).

## **4.5 The Emergence of a Shared Repertoire**

### **4.5.1 Shared Mutual Resources**

During the preparation for the radio shows there was a varying sense of the kind of materials to which the learning network referred. Most of the materials referred to where those given during

the training of trainers' course. For instance, these extracts justify some of the materials used in preparation of the broadcasts: *"I used both books that I was given by the network... the whitish with blue and the other black"* (LIF2//61 and 63); *"based on the questions what were provided for me, I went and refreshed myself from the materials that we had during the training"* (LIT1//27-28). On the contrary, some of the members did not use any materials in preparing for the radio programmes because they accredited the rainwater harvesting practices and knowledge as being a part of them. For instance, this was echoed by an agricultural college educator in the network:

*I did not have much to prepare at that time since I had been part of the network and its activities for some time and so I was ever ready to engage in the radio interview. However, I had a chance to look at the interview questions just before the radio show. A book titled Water Harvesting and Conservation by Jonathan et al., was mostly used during the activities. (LIE2// 32-36)*

Additionally, prior knowledge on rainwater harvesting practices was another reason for not using materials. The knowledge could be accounted for because of a member's profession, the previous ToT course and the daily use of the practices in farming. These extracts exemplify this:

*When you answer something that you do on daily basis you don't need preparation (LIT2//38);*  
*I did not use any materials because remember I did that course so I have that internalised knowledge (LIT2//44-45);*  
*because I am a farmer that has been growing veg [Vegetable] organically, I had a little bit of information on how to conserve water on things like mulching, because with our agro ecology, we do a lot of mulching and we know that we have to preserve water through the use of mulching (LIF2// 33-34).*

In spite of some members using materials and relying on prior knowledge, the majority, if not all the members, did not use the Amanzi for Food website (their shared physical repository). Reasons for this were mainly attributed to poor internet connectivity (LIF2// 60-61). However, when members of the network were asked for further details about the practices after the broadcast by listeners, they directed the listeners to the website. This was mostly done by trainers in the network (LIT2// 69) but, be as it may, the website was also used by the presenter in preparation for the broadcasts and to get acquainted with the topic of the show (RFN).

Other than direct use of web resources during preparation of the broadcasts, network members on radio also shared some of the rainwater harvesting materials they used on a daily basis during the broadcast. These shared materials- which were in English- were used as references to justify some of the practices that they discussed. For example, a step-by-step process on grey water harvesting practice – a water conservation practice – was said to be in the WRC books while on air (RTP1-LE1//173-175). By doing so, they promoted the WRC books which they were given during the course in terms of how they can help farmers choose a practice that best suits them using a navigation tool (RTP3-LR2//134-144). Likewise, they conferred the materials in relation to their use in their professions. For example, educators noted including rainwater harvesting in their teaching curriculum (RFN) and trainers related rainwater harvesting practices in their work materials that they use such as the Integrated Development Plan of the municipality (RTP4-LT2//70-72). In addition to this, trainers while on air gave a descriptive process of how they help farmers from this information:

*We get farmers that want to be assisted with how they can deal with situations of drought and how they can do farming with this crisis ... where we don't have water. What we do is we have the materials that we got from this IBLN which came from WRC and from Rhodes University. These materials are in forms of manuals, pamphlets, charts and posters. So we share that with the farmers ... those who just walk in but also over and above that, we try to see if we can visit the farmer and assess that particular farmers situation because it's not one size fits all. Each farmer has their own situation so we really need to make that visit so we can give a proper advice according to the situation (RTP4-LT2//137-145).*

Another trainer, an extension officer, gave the following account:

*Most farmers often come to my office, especially when they have heard about the programme in question. This is because that Amanzi for Food programme/show has been in action for a long time on the Fort Hare FM. There are many farmers who are coming to my office for help. We have manuals which we give them in order refer them to. We are also able to refer them to the institutions such as University of Fort Hare and also to other farmers, i.e. our demonstration sites such as Lloyed, Keiskamahoe, and the site we are using at the University of Fort Hare, Fort Cox, where they go so that they are be able to observe. We arrange meeting for farmers in order to meet other members of Imvotho Bubomi. As LR2 has already mentioned, Imvotho Bubomi is made up by different calibre of people. We have those who are lecturing, farmers, NEDA, Dohne Research Institute. So we lead the farmer to meet such people (RTP4-LT1, LINE 40-50).*

During the radio advertised event, the network members handed out Water Research Commission books to the different farmer co-operative groups present. They were told how to

use the books for implementing water conservation and rainwater harvesting practices in their farming (RFN). Likewise, network members used the WRC books when showcasing how to implement different practices at the event, this was done mostly when an educator was constructing an ‘A-frame’ for measuring the length of diversion furrows he and the network planned to show the farmers in Gwali (RFN).

#### **4.5.2 Practical Rainwater Harvesting Demonstration Sites as Shared Resources**

Rainwater harvesting practical demonstration sites were developed by the members of the learning network. These demonstration sites showed different implemented rainwater harvesting practices which either depicted in-field or ex-field techniques. In-field techniques include mulching, tied ridges or diversion furrows, while ex-field techniques included practices such as ponds, which are implored usually outside of the cropping field (RTP2-LE2). During the broadcasts, members discussed the different sites in the network and how each person uses the sites differently. The educators gave descriptive technical elements when talking about the demonstration sites which are on their college grounds:

*We've implemented so far are basically the farm ponds infiltration pits, trench beds, tied ridges, and also we do a lot of mulching. So if you come to Fort Cox like I did mention earlier, we have got ponds that's about 120 cubic metres that's about 120 000 litres of water so if you are doing say for instance one hectare of water, should last you come thing like three months but it also depends on which type of crop you are dealing with but that's just a rough estimation. So with a farm pond what you basically do is to dig like in our case we used a till bin to dig such a pond because it's quite a job for human labour to be able to dig in such a time so what you basically need to do is position that pond at a strategic position. Strategic in the sense that when water runs off it runs off along certain channels it does not run off anywhere. You must position your pond in such way that you are close enough or you are downstream those channels so that yours is just to divert your water it goes into the pond and if it's strategically positioned that should be a big job of having to diverting the water. With the infiltration pits, what you simply do is to dig holes of about 250 mm in diameter, 150 mm deep that capture water. With trench beds, you also dig a trench around a cropped area of about 1 sq. metre or 2 sq. metre where the water runs into and it infiltrates with tied ridges you are looking at basically barricading the furrows on your normal ridges which you would grow your potatoes so you would grow in the furrows of those ridges, so you would barricade smaller ridges that reduces the run off speed allows also the water to infiltrate and with mulching. I did mention that we also did a lot of mulching, what you basically do is that you collect material such as grass, tree leaves but there is also plastic mulching. But what I want to focus on is grass and tree leaves. What the mulch does is it reduces the kinetic energy of the rain drops as they fall on the ground and hence the water will have less energy to run*

*off and hence it takes time to infiltrate and the mulch is acting as a physical barrier to water flow so that in its self-enhances these infiltration process. So as you might have observed the focus of run-off water harvesting in an IFT is to allow infiltration so infiltration, infiltration, infiltration. That's the most important thing you must focus on. So we allow this infiltration to happen so that the water does not go to areas that are not targeted. Our targeted area is the crop area, that's where we want our water to be so it must infiltrate deep so that the plant roots can go down and fetch the water unlike when it has run off, they can't go to the river and fetch the water from there (RTP2-LE2//206-234).*

The educator's explanation of their demonstration sites was different from how trainers spoke about demonstration sites. They mainly used the sites as teaching aids to farmers;

*We are also able to refer them to the institutions such as University of Fort Hare and also to other farmers, i.e. our demonstration sites such as Lloyd, Keiskamahoe, and the site we are using at the University of Fort Hare, Fort Cox, where they go so that they will be able to observe (RTP4-LT1//44-47).*

Another participant recounted:

*Lloyd village is a very dry place. They were in a serious situation in the past season, as we know that drought was all over South Africa. Hence when they heard about the program of Amanzi for Food, they became the first people to hold it with both hands and asked that the demonstration site should be in their place. This has really helped them because the situation is no longer the same as before the site was pitched. Now they can be able to irrigate their backyard crops. This is where the usefulness of water harvesting is manifested, as Amanzi for Food gives discourse. It all means that people from Lloyd have been faced with a challenge of being vulnerable during the drought seasons. Nonetheless the initiatives and techniques by Amanzi for Food have brought a big difference (RTP4-LT1//121-129).*

In other instances, demonstration sites were spoken of as sites for curbing stigmas and myths surrounding some rainwater harvesting practices. For example, potential stigma surrounding grey water was talked about at a practical demonstration site using this practice (RTP1-LE1//193-202).

#### **4.6 Rainwater Harvesting and Conservation Practices Made Explicit in Radio Talk**

While on air different rainwater harvesting practices were talked about, some more than others, while some not spoken of at all. Most of the practices spoken about between RTP1 to RTP4 and at the radio led event were mulching, diversion furrows, ponds, and infiltration pits. These practices were spoken of as either separate entities or in association with other practices or

already in use in practical demonstration sites. The extracts below show the extent of the engagement with specific rainwater harvesting practices in the radio programming and activities.

In each case the narratives translate and illustrate a practice in illustrative detail:

*You bath, you take that water you put it together, if you are a family of five and you are putting together all of you are using five litres, five litres, how much are we having at a goal, we are having twenty-five litres and how many times are you bathing, maybe you might be bathing three times, now you are having 75 litres to save (RTP1-LE1//186-190).*

*If you do not have a tank, use your water drums in order to keep this water. Moreover, you can also dig up a pit for yourself. The other easiest way to do this is, in your garden you should try to dig up small ponds and when you are planting your cabbage, dig a deep hole. Let these pits be dip so that the water will not get finished fast. Secondly, around your plant, put the thing which we call mulching, using the grass or leaves from the trees or else chicken manure (RTP2-LF2//136-141).*

*You will take your hoe and make furrows. Your furrows will direct the water to where you want it to be. This is to avoid the wastage of water because there is a widespread scarcity of water. This is called diversion furrows (RTP3-LS1//109-111).*

These narratives developed as practical translations of the rainwater harvesting practices between reading about it in the books or hearing it from others and relating it out of learning to apply the rainwater harvesting in a local context.

After listening to the radio programme, a network of participants implemented what they heard as indicated by LIF2//23-25: *I have done my homestead garden where I have raised beds, I have dug trenches and I have done the small dams so that I can be able to collect water when it rains. The water can be harvested.*

Other than giving descriptive accounts on how to use and implement various RWH&C practices the members on radio spoke of practices from differing perspectives. Some of these are detailed in the next section.

#### **4.7 Social – Ecological Articulations of Practice**

Social – ecological articulations are in relation to rainwater harvesting practices. These were made most times rainwater harvesting practices were spoken about in relation to other social

ecological factors such as evaporation, soil erosion, drought and chemicals in tap water. Below are some extracts showcasing how these articulations were made:

*It is very hot and high level of heat increases the level of evaporation. To combat the high levels of evaporation, they should try to do the mulching with grass. This is to help the crops to keep water from not being evaporated easily (RTP1-LF1//259-261).*

*Mulching will minimise water evapo-transpiration. Minimised evapo-transpiration will also reduce the chances of plant wilting. These are the ways of water harvesting (RTP2-LF2// 141-143).*

*Water conservation is important, especially for farming and cooking. The process of this practice is followed by firstly preparing the soil in such a way that when the rain comes, your soil will be able to preserve the rain water (RTP1-LF1//97-99).*

*If you harvest water as much as you can, and store them in small dams, you will be in a better position than the one who has not (RTP1-LF1//76-77).*

#### **4.8 Practice in Relation to Indigenous Knowledge Radio Talk**

Another notable thing during the broadcasts was the relation of rainwater harvesting to indigenous knowledge. The members spoke of how people in the area had forgotten about these practices and called on them to learn from the past in collaboration with current research more especially that from the WRC. The extracts below emphasize how this was done:

*Do you know the blue drums we usually have on our homes? When it has rained people used to harvest water using drums and put them in order. This is an ancient practice but it appears as if it is new because it has been given a new name, Amanzi Bubomi. Yes, Amanzi Bubomi (Water is life indeed (RTP2-LF2//131-134).*

*Imvotho Bubomi, has come to revive an ancient practice which our people have been following (RTP4-LT1//23-24).*

Amidst this, they also gave personal stories of seeing RWH&C as indigenous practices:

*I found out that this practice is not new to me because I have been following it ... I use indigenous knowledge in my farming practice. Indigenous practice uses the natural things. As we know that the water from taps is being cleaned by chemicals. We do not want to use it in our plants when we are ploughing (RTP2-LF2//114-117).*

*In the office, as extension officers, our work is to take the new techniques (innovations/new technology) to the people. This means that there is a link in this initiative because we take the information from the Water Research Council through the University of Fort Hare and through the Amanzi for Food. We take this information to the farmers. Fortunately, farmers have received this information with gladness. The*

*reasons being that this initiative is reminding them about their indigenous practices. It used to happen that at the start of the rainy season, people would be opening trenches that led water to their backyard gardens (RTP4-LT1//24-30).*

#### **4.9 Social Learning in a Participatory Simulated Radio Listening Group**

The above data gives a rich and deepening picture of the dimensions of the social competency in the CoP associated with the radio programming. This does not, however, give an in-depth picture of learning interactions when listening to the broadcast. To develop this insight and to explore the possibility of using the broadcast materials in further extension work a listening group method was used to explore the discursive processes of learning in interaction with the broadcast materials (See Section 3.5.3).

After the four radio broadcasts, two broadcasts were re-played to a group of farmers. The two broadcasts were from the second and fourth radio programmes which were on the common rainwater harvesting practices and information hot spots for farmers to get more information on rainwater harvesting respectively. This activity functioned to explore how the broadcast materials could be used in collaborative learning and to get deeper insights into the learning associated with a group listening to the radio broadcast.

Listeners listened to recorded broadcasts while sitting around a model radio as shown in Figure 4.3 below, thereafter ensuing a discussion.



*Figure 4.3: Radio listeners listening to recorded broadcast on Monday 4<sup>th</sup> April 2016 at Middledrift.*



I was able to track the collaborative learning through highlighting the different processes in a learning system cycle among a group of farmers during the participatory radio listening such. Below are sub-sections indicating the different processes in a learning cycle as indicated in Section 2.4.

#### **4.9.1 Existing Routines**

Existing routines are usually those that outline fixed habits and systems, training and conditioning and already existing knowledge among the farmers. It was mostly getting to know the context in which the farmers work in and are coming from, which also meant outlining the challenges they face in their practice.

Farmers' representatives during the discussion were a mix of both homestead food growers and small holder farmers (RFN). They just like most parts of the country experienced a drought and as a result, depended largely on tap water for their crops and occasional rain that fell during the drought situation (RFN). They listened to radio for different genres of programme such as religious shows, music, news and agriculture. Fort FM Community Radio Station was among the radio stations that they listened to yet hardly listened to its agriculture programme. Even when they did, it was more passive listening than active listening, resulting in not seeing community radio as a medium where they could learn (RFN). For this reason, recorded broadcasts had to be played during this process. Before the broadcast was played, participants expressed their reason for coming and many saw this opportunity as a way of gaining knowledge and some sort of training. An illustration of this was expressed as *"I think we will know how to save water"* (RL5-RLD1// 87).

After the radio listening, as the facilitator I posed questions to evoke a discussion. Participants noted that this was the first time they had come across a radio programme on rainwater harvesting. They acknowledged, however, that they practiced rooftop rainwater harvesting through the use of drums and JoJo tanks for consumption and domestic purposes (RLD 1.3 //152, 156-157). Nevertheless, one participant noted that she had prior knowledge of grey water as a water harvesting technique through a friend before the participatory radio listening (RL1-RLD1.3 //163).

As discussed in Section 3.5.1, the radio programmes were set on a theme of *farmers thinking ahead* by the IBLN on radio, farmers also echoed this emphasis by saying, “*In our days we do not usually put our tomorrow into consideration*” (RL2-RLD3.3 //5), meaning that they did not usually think about the scarcity of water for their crops as “*We do not usually take care of water because we think that we are not in really need*” (RL1-RLD3//2).

In addition, as an existing routine, one participant shared how he was currently experimenting with two gardens where one was dependent on rainwater while the other on tap water, in order to see the different taste of his crops (RL2-RLD1.1//73-76). Other participants shared the type of crops they planted which included pumpkins, peas, spinach, onions, cabbages and potatoes (RLD1-RLD3). They also shared some of the challenges they faced other than water which included bird and livestock invasion on open fields (RL1-RLD3 // 2 and RL2-RLD3 //26) and market for selling products (RL1-RLD3// 40-41), resulting in only producing crops for home consumption. Furthermore, they added that they highly depended on ploughing their crop land with human labour or cattle than machinery. These challenges were common during discussion sessions.

#### **4.9.2 Crisis**

This step involved participants deconstructing by seeing their current drought situation as being problematic. They also constantly compared the past in the form of what they called ‘indigenous’ or ‘ancient days’ to the present day of how they did things, therefore bringing about chaos and dissonance. After playing the broadcasts, participants began to see the matter of rainwater harvesting was not something new but something that they practiced or had seen being practiced. An exemplification of this is: “*Yes, in olden days, their [our] parents used to have contours lines*” (RL3-RLD1.2 // 47); “*during those days, you would see that the back of our house is lined by the drums which are full of water*” (RL1-RLD3.3 // 2-4); “*In ancient time, we used not to throw away this grey water. It was mainly used when making mud for building ...*” (RL1-RLD3.3 //55-56).

They attested to the fact that contour lines were made in their fields in order to harvest rain and minimize soil erosion. This reason was given in form of a present-day example by one of the participants of how her neighbour, though using tap water, was able to keep his garden evergreen and reduce soil erosion in his garden due to having contour lines and trenches in his garden (RL1-RLD3.2 //23-29). The crisis process also saw participants giving reason of why they abandoned the practices which they implemented in their farming practices growing up. Some of the reasons were referenced to colonialism and land redistribution policies by colonial masters where people were removed from productive land to unproductive ones (RLD3.2 //77-80). Another reason was conferred to failure of disseminating the knowledge from generation to generations, resulting to a generation forgetting about the rainwater harvesting indigenous knowledge practices (RLD3.2 // 82-84). They also credited the abandonment of the knowledge to dangers that were associated to the practices. The following extract exemplifies this: *“Yes, when we were growing up, people had small dams in their yards. We were not aware that the small dams in our yards could be useful. As a new generation, we feel not safe of having the dams within our own yards. This is due to some dangers which are embedded in owning a dam inside your yard (RL1-RLD3.2// 87-89).*

After discussing and associating rainwater harvesting with forgotten indigenous knowledge, the concept of rainwater harvesting became clear as is evident in the following extract by one of the participants: *“I now understand this teaching because we had no extensive knowledge about it. As you all know that some of us are coming from steep areas, now we will be able to control water run-off” (RL5- RLD1.2 // 88-90).* All in all, during the discussion as each participant shared, other participants began to see the need to visit each other as farmers and learn from one another (RLD1.2 //102-103).

#### **4.9.3 Meaning Making: Learning Process**

This step involved the meaning making that happened during this process. This was when participants were re-thinking and renegotiating rainwater harvesting practices by sometimes using social ecological justifications not to mention experimenting practices learnt from the participatory radio listening sessions. Moreover, emerging knowledge, new relationships and emerging norms and values were elements associated with the learning process. Most of the

emerging knowledge came from instances where participants would make social ecological justifications in relation to rainwater harvesting techniques. This was done in order to resolve a problem that arose during the discussion associated with a certain rainwater harvesting practice. The extracts that follow signify how dangers were associated with using ponds as a rainwater harvesting technique and a solution is given:

*Yes, when we were growing up people had small dams in their yards. We were not aware that the small dams in our yards can be useful. As a new generation, we feel not safe of having the dams within our own yards. This is due to some dangers which are embedded in owning a dam inside your yard. (RL1-RLD3.2 // 87-89)*

What dangers?

*Our children are naughty. So, in order for us to successfully practice this water harvesting techniques, with the use of a dam, it will be more important for us to keep our gates closed. This is because these kids would come with their friends and play in the same dams you have dug for farming purposes. Therefore, closing the gate will limit them from entering where the dam is. (RL1-RLD3.2 // 16-20)*

A participant also noted that mosquito infestation was an associated danger to a water harvesting practice. This danger was later resolved by other participants in the group. For example, participant RL1-RLD3.2 // 96-99 observed that:

*Somebody once told me that in order to chase mosquitoes and other water worms away you have to pour paraffin inside your tank. We all know that water and paraffin will never mix together. The paraffin will always float over the water. This is what will drive all the worms and mosquitoes away. This is also helpful to chase away some other worms which are usually brought by birds. These worms are known as chicken lice which birds bring over your water. So, when these chicken lice are over your water, it can be damaged, echoed participant RL2-RLD3.2 // 100-102. “So you must pour two spoons of paraffin. The paraffin will never mix with water. This also applies to your dam. Do the same thing in your dam, said participant RL1-RLD3.2 //103-104.*

Likewise, there seemed to be emerging new knowledge when participants emphasised what was common knowledge among them. Participants seemed to associate grey water with pests and seen as a pest control mechanism:

*The plants are safe from the harmful pathogen that may be found in the water if possible. For example, if you have planted peas in your garden. You can simply take the same water and sprinkle it to your crop because the peas have that outer cover which protects*

*the seed from the direct contact with the surrounding environment. This also applies to the cabbage. You can simple pour your water directly to the roots. (RL2-RLD3.2// 61-65)*

Furthermore, they also gave examples of people they knew who had implemented rainwater harvesting practices in their fields. By giving examples they were testifying about how the practices were working for people they already knew: *“There is a certain man in my village. He has trenches in his garden. Every plot is surrounded by plots. The tap in his garden is strategically put so that water will run down between the plots (RL1-RLD3.2 // 17-19). “...Yes, his garden gives him best yield ever commented participant RL1-RLD3.2 // 21.*

In addition, some participants also noted during the discussion about how they were experimenting in their gardens after listening to the radio:

*The issue of this water was not very clear to me. Now I understand. As I am learning from here, I am also trying to test this teaching back at home. I have two gardens. In one of them I am using tap water and in another, I am using rain water. The results of my experiment showed that the produce is not the same at all. The tastes of pumpkins from irrigated by tap water is bitter compared to the one which was irrigated by rain water (RL2-RLD1.2// 72-76).*

By them experimenting there was a sense of value of what they were learning from the participatory radio listening. In the same way, emerging value could be seen from participants referring to rainwater harvesting practices as *“being good” (RL1-RLD 3.2 // 60)* and them *“learning a lot” (RL1-RLD3.2 //56)* from the participatory radio listening.

#### **4.9.4 Embedding**

Embedding (see Section 2.4) happened in the form of participants making new plans which was seen with the emphasis of strengthening existing relationships, establishing new relationships with other members in the IBLN, implementation of rainwater harvesting techniques, norms and values. New plans of what the participants would do after the broadcasts of the two radio programmes were made and shared with others. One of the new plans was seen in the essence of strengthening relationships amongst them as food growers. This was mostly instigated when they recognised one of the farmers on the radio programme they had listened to (radio programme 2) who was a member of their farmer’s association, used some of the rainwater harvesting practices

she was talking about on air. They decided to visit her place. By doing so they were strengthening an already existing relationship. The extracts illustrate a dialogue of this:

*RL2: LF2 is using these methods.*

*RL1, RL2: LF2 is applying all these methods of water saving. And we are planning to visit her house.*

*RL2: When I am about to go there I will invite this man next to me. We shall use my own car. LF2 once complained that we are not paying any visit to her garden while she has already started this farming practice. Before I implement all that I have learnt here I will organise a visit. I am sure that by next month I will have enough fuel for my bakkie [van]. As I said, I will go along with this man next to me. Our transport will help us not to be hitch-hiking.*

*RL1: Please I would love to go along with you guys. When you are going there please inform me.*

*RL2: Ok, no problem, we will organise this trip.*

*RL1: I am very interested to see LF2 garden (RLD3.3 // 90-101).*

During one of my field visits I learnt that the listeners had contacted a farmer from the network and asked if they could visit her farm in order to see the RWH&C practices that she had in her homestead garden, and in return she also invited them to a teaching garden demonstration at Fort Cox College arranged by the IBLN on 1<sup>st</sup> August, 2016 (RFN).

Not only did they seek to strengthen already existing relationships among themselves as farmers but also with their extension officer who was part of the radio programme. They mostly considered him as being the right person who would advise them on various rainwater harvesting practices (RL1-RLD3.3// 123). In addition to this, they also saw fellow farmers practicing the techniques as ideal sources of learning from as noted by member RL1-RLD3.3 // 125:

*Yes, we would really want that to happen. As farmers, we are not in the same level at all. We are still those farmers who are still learning and seeking for growth and development. To know what to plant in which type of a soil is very important. The other thing to consider as we come together is the season. So, gathering together opens our eyes to see those things (RL1-RLD3.3 //157-160).*

Furthermore, there was also evidence of them wishing to establish relationships with other members of the learning network whom they had heard on the radio. Other than relationships, there was also evidence of valuing the knowledge they received from the radio and the

discussion that evoked from this knowledge. This was mostly seen by their sharing with others in their homes (RL1-RLD3.3 //188-189 and RL2-RLD3.3 //190-191) and from their implementation of various practices that they were exposed to from the radio (RL2-RLD3.3 //37-38). Additionally, there was also evidence of value for the meetings and being part of the participatory radio listening. They referred to the process as being “*fruitful*” (RL1-RLD3.3 // 144), imaging the output of their production after implementing the practices as “*going to live in abundance*” (RL2-RLD3.3// 146-149) and also seeing the knowledge gained as more valuable than the money they spent in coming to attend the meetings (RL1-RLD3.3 // 150-152). Likewise, they showed value for media platforms like radio as relevant platforms for disseminating knowledge, “*You can listen and be able to apply what you have seen and heard*” (RL1-RLD3.3 //169).

#### **4.10 Conclusion**

This chapter presented the findings of the study as emerging major themes and sub-themes from the data analysis. The research processes methods were explained in Chapter 3. On the basis of the findings presented in this chapter, I will discuss the findings in the next chapter.

## **Chapter 5: Discussion of the Findings**

### **5.0 Introduction**

In the previous chapter, I presented findings of this study. In this chapter I critically examine and discuss these findings in relation to the research question, literature and theoretical framework as discussed in Chapter 2. This deliberative work on the research findings is undertaken in the hope of developing insights that will be useful for continuing media-orientated work in the learning network. The findings presented serve to address the research question: How did the development and enactment of a radio programming process on rainwater harvesting expand an emerging community of practice (Imvotho Bubomi Learning Network) and how did it enhance the social learning processes in the network?

### **5.1 How the Development and Enactment of a Radio Programme Expanded IBLN as an Emerging CoP**

As discussed earlier, the learning network was activated as a CoP through a course led training of trainers' course on rainwater harvesting. Section 4.1 attributes this to one of Wenger's (1998) dimensions of social cohesion as participants began to work as partners sharing a history of practice. The section further notes that time and again during the expansion into radio programming, the network continually referred to their shared history of learning rainwater harvesting for improved food production. This overview brings me to my insights into a sedimenting of identity within the community of practice during the radio programming process.

#### **5.1.1 Analytic Statement 1:**

**Continuous negotiation of rainwater harvesting as an emerging enterprise developed around participants identifying with the shared enterprise of the CoP, to create a knowledge community**

Evidence presented in Section 4.2 illustrates how members of the learning network shared an identity as a learning community in a twofold manner. By virtue of expanding onto radio production they shared who they were as individuals in a community of practice with expertise



they brought to the network and how the network in return was benefiting their learning (see Section 4.2). Moreover, each time they shared their stories and insights they identified as a network. This was narrated in light of the shared enterprise that had brought them together and the purpose of the network in relation to rainwater harvesting as their domain of emerging expertise (see Section 4.3). Wenger (1998) and Wenger et al. (2002) justify that this shows how members of a community of practice are accountable within their shared enterprise because they begin to make it known to outsiders so that they can be identified by their enterprise.

This is clearly seen in evidence presented in Section 4.2 which shows how members informed people as a knowledge network by their being on radio. By doing so they were able to set the agenda as to why they were on radio (see Sections 4.2 and 4.3) which McCombs (2002) says is done in order for the listeners to view and identify with the topic of value and importance. Here there was an agenda around the theme of farmer listeners thinking ahead in light of drought (see Section 4.3). These processes of identifying and framing the shared enterprise were brought about while they discussed their shared motives and experiences. Wenger (1998) points to this as a process of negotiating the enterprise. It is through this process that a sense of commitment and accountability to the domain emerged through a continual mutual engagement of negotiating the enterprise across the four radio shows described in Chapter 3 (see Section 4.2). In this way, the radio programming contributed to the defining of the identity of the community and expanded to those listening in.

Evidence in Section 4.3 also shows that some members in the CoP every now and then made social – ecological justifications developing new ways of talking about rainwater harvesting practices. In light of this, Section 2.3.2 indicated that when a community of practice is active for a while – possibly to a point it reaches in maturity stage – its enterprise begins to evolve because it is based on a domain that targets an issue that requires co-engaged learning over time. This evolves in the sense that its members begin to have multiple interpretations of the enterprise, notable in this case, in the social ecological justifications of the rainwater harvesting as a domain of expertise. These social ecological justifications were mostly narrated in the light of climatic variables as those presented in Sections 4.3 and 4.5.

Drawing on articulation theory as a concept discussed in Section 2.5, when a shared motive is evolving there is a space for creating new meaning (Hall, 1980). Likewise, Wenger et al. (2002) accredit such a scenario to members of a CoP demonstrating this in either a tangible and intangible manner, the latter being ideas embedded in an emerging thinking style new to the domain [of rainwater harvesting in the network]. This aligns with Hall's (1980) argument that the elements that are combined in the narrative serve an interest through the created connections that underlie how individuals come to know and to share this learning. Additionally, it strongly agrees with Wenger (1998) who notes that the process of negotiation by facilitating members contributes to the enterprise in a relational way with other members of the CoP (Section 2.3.4). This creates a space for ownership of meaning of the rainwater harvesting practice. This is because for emergent members, the meaning of the practice becomes a part of them through personal meaning of the enterprise and by making articulations with various climatic variables (see Sections 4.3 and 4.5).

The evidence in Section 2.1.4 demonstrates how in setting the agenda beforehand and negotiating their enterprise, the associated learning led to recognition from those they knew in person. Also, they learned from those who listened in on the radio programme but had never met; and those on other media platforms they had never met on virtual spheres (see Section 4.2). Wenger (1998) strongly argues that this recognition can either be identification in a reificative or participative manner. Here identification can be likened to members of the CoP being recognised by those they knew after the broadcast. The listeners recognised or were familiar with those who were speaking on the radio because they had spent time with the person in shared relational instances. The other two forms of recognition stated above can be likened to Wenger's (1998) notion of identification in a participative manner (see Section 2.3.3). Evidence of identification in a participative manner was suggested in Section 4.2 when listeners were able to take the discussion of the rainwater harvesting from a radio station where they and the learning network developed a shared identity activated in other virtual spheres such as Facebook and re-broadcast on other radio stations.

Wenger (1998) strongly argues that this is due to the listener's interest and background, thus, being able to develop relations of identification with the enterprise and fellow listeners locally

(on other radio stations) and globally on virtual platforms like Facebook. This then shows that the IBLN's identity as a learning network had spread and expanded beyond their intended community audience in Nkonkobe Municipality. This all demonstrates how useful and powerful radio is because of its multi-layered functionality and ability to reach many people across different communities (see Sections 2.1.2 – 2.1.4).

Furthermore, evidence in Section 4.4.1 suggests that radio broadcast preparation saw members reaching out to each other and in other instances the enactment contributed to the formation of new relationships in the network such as that of a farmer and an educator which was due to them living in close proximity. This is no different from the findings presented in Section 4.4.2 where members recognised each other's skills and expertise. Also, this section showcases a story of how the network's training coordinator visited different members in the network who had in-depth knowledge of the rainwater harvesting enterprise, thus acknowledging various skills sets that members contributed to the network. This shows an indication of members identifying and articulating with fellow members in a participative manner of identification process.

Identification in a CoP is as a result of continuous mutual engagement of the enterprise (see Section 2.3.4). The section underlines the issue of investing time as suggested by Wenger (1998). This is because members of the CoP spent time together thus making it possible to know about the different skills and expertise that their fellow members possessed, such that they are able to identify with them when need be or were able to explain a role of their fellow member when not present as explained in Section 4.4.2. Members were able to articulate to each other expertise of the network in a social way so as to bring about shared understanding in their radio programming preparation.

It is through this continuous identifying, articulating and negotiating of the practice that the Imvotho Bubomi Learning Network can be identified as a knowledge community:

by looking at it through its members articulating with one other's skills and reaching out; through its evolution of the enterprise of rainwater harvesting using social ecological justifications of climatic variables and making the enterprise their own;

through members recognising the importance of their enterprise and setting the agenda for their listeners; and  
through listeners identifying with the enterprise (participative) to the point that they share it with others so that they too can identify with it and through identifying members of the CoP in radio with hopes of identifying them as potential persons for further information.

### **5.1.2 Analytical Statement 2:**

#### **Radio programming supported the expansion of the network and fostering widening mutual engagement and agenda setting**

Expansion was noted in terms of having a shared history of learning from the course based approach to the radio production (see Section 4.1). Members of the CoP spoke about this in terms of sharing with listeners where they were coming from and where they were now in a process of sharing what they had learned and were now able to do. They spoke of a history and a widening mutual engagement into their new radio programming phase of the community of practice (cross reference). The sharing of who they were can be resonated to the theory of agenda setting where participants shared a bit of their history to listeners in the hope of it crediting their main reason of being on radio. By giving a historical account of learning together it helped members define their enterprise's role in the CoP (see Section 4.1).

Furthermore, the findings show that not only was the radio programming the only actual expansion but that expansion happened in terms of changing relational dynamics embedded in element of social cohesion, mutual engagement (see Section 2.2.1b and Section 4.4). Here, the relationships among members were strengthened in terms of them reaching out to each other when preparing for broadcasts and also in terms of commending and alerting each other about the radio programmes.

Wenger (2002) notes that this reaching out to other members is usually as a result of a developed level of intimacy that members in the CoP have with one another. Literature discussed in Section 2.4 outlines that this intimacy results from constant engagement with one another where members begin to know each other's styles, approaches, strengths and weakness, such that when

need arises as exemplified in Section 4.4 where members knew who to reach out to, based on expertise. Due to the constant mutual engagement around a shared enterprise, evidence shows that expanding into radio production contributed to the formation of new relationships in the network. Section 4.4.1 gives an example of a farmer who knew about the CoP from a radio broadcast and formed a new relationship with educators in the network. Living in close proximity to each other contributed to the fostering of this relationship. Literature in Section 2.4 shows that when there are newcomers in the CoP, older members in the core group usually mentor the newcomers about their domain resulting into having a relationship. This formation of relationship can usually be as a result of similar geographic location with each other, similar approach or interest in the domain, as that seen in an example in Section 4.4.1 and explained by Wenger et al. (2002).

The mutual engagement in relating to others in the CoP can also be alluded to as a way of articulation where propositions connect with other individuals so as to bring about a shared understanding around what they both share (Hall, 1980). In this case, it is the connecting of a farmer to a group of educators and connecting the IBLN members to the Fort FM radio programme manager (see Section 4.4.1), thus bringing about a new meaning of farmer-educator relationships through mutual engagement. The same can be said of evidence illustrated in Section 4.4.1 which indicates how the Fort FM radio programme manager joined and formed relationships within the CoP. By doing so, these new relationships strengthen the understanding of the enterprise even more due to the engagement in exploring diverse approaches, ideas and understandings, hence contributing to the non-homogenous character Wenger (1998) talks about.

In addition, Section 4.4.2 highlights evidence pertaining to roles and responsibilities as a way of expansion of the mutual engagement among members of the CoP. The section points out that already established roles were extended into the radio programming process, such as the IBLN training coordinator organizing and advertising the event (see Section 4.4.2 for other examples) and a shift in roles among members. This particular set of evidence points to Wenger's (1998) notion of "complementarity of participation", where members became well acquainted with each other's roles such that when a particular member was not present, others were capable of taking up that particular role. Literature in Section 2.5 relates this as peripheral access of participative

connection because due to a continuous mutual engagement of the practice in a landscape of practice, where there are so many expertise and skills present, members are bound to have an idea of how to go about something when fellow members are not present.

Evidence also indicates that since expanding into radio programming there was a growth of members in the network; this came through listeners joining and showing interest in wanting to join the network (see Section 4.4.3). Wenger et al. (2002) associate this happening during the maturity stage of a CoP's life cycle; where the community through reaching out to wider communities, sparks interest in onlookers and individuals keen on actually joining. In this way, the learning network developed from a somewhat isolated community into one engaged around the emerging enterprise as it defines its boundaries for effective sharing (see Section 2.4).

Section 4.4.3 further illustrates a story of a farmer who joined the network after listening to a radio broadcast. She explains how joining the IBLN helped her overcome some challenges she faced and how her joining was seen as an achievement to the network because of skills and expertise she brought to the network. While on this point, Section 4.4.3 in a similar way further illustrates a story of Fort FM radio station programme manager joining the network because he saw it as a repository of agriculture knowledge due to the contraband of skills and expertise in the network. Even though literature discussed in Section 2.4 does warn that newcomers are likely to spiral down the community's momentum in their engagement of practice, evidence presented in Section 4.4.3 illustrates that newcomers did not make the community's momentum lag because the core members saw the new members joining as a contribution to the knowledge repository of the CoP. This is because of the skills and expertise that they brought to the CoP.

### **5.1.3 Analytic Statement 3:**

**The radio profiling and expanding relations shaped network members as knowledge stewards in relation to rainwater harvesting.**

The whole interest in the radio programming process and its expansion into a wider community is evident in the research findings presented in Chapter 4. This is a good example of the CoP members becoming knowledge stewards of their rainwater harvesting domain. This is all because

it shows as a sign of members taking pride in their domain and having a way of sharing their developed repertoire with those outside their community (Wenger et al., 2002). The evidence illustrates that by doing so during this radio programming process the learning network members were able to take up other opportunities to share their knowledge of their enterprise other than being on radio. This is illustrated in stories relating to an advertised radio programme, productive demonstration sites (Section 4.5.2) and actual physical mutually shared repertoire (section 4.5.1). Literature in Section 2.4 demonstrates this resulting in formation of new alliances, a shift in ideas that they possessed and ultimately seen as stewards of their domain by outsiders. This Wenger et al. (2002) note helps sustain the CoP's momentum through seeing these instances as ways of rejuvenating the entire community of practice. Literature discussed in Section 2.4 indicates sustenance as a result of members spurring each other's knowledge as they engage around the enterprise within the network, across communities and beyond their community.

Another way in which the members of the IBLN came to be seen as knowledge stewards of rainwater harvesting during the radio programming process is as evidenced in Section 4.5.1 that during their preparation of the programme while some referred to materials given to them during their training of trainers' course, many didn't do so but credited prior knowledge. Prior knowledge was an accreditation to members' profession, attending the course and daily use of practice.

This highly aligned with Wenger et al.'s (2002) understanding of members having to internalise the knowledge and it becoming a part of them such that they did not need reference to any material. This can also be said to have happened with evidence presented in Section 4.4.3 where members of the core group mentored new members to the CoP. These newcomers and some onlookers were given materials of the CoP, mentored by these stewards of the domain and also shared their knowledge repository (see Section 4.5.1).

Sharing of the community's knowledge repository can be seen in the evidence presented in Section 4.5.1 where members shared their materials, website links during broadcasts, in relation to their professions (such as educators wanting to incorporate rainwater harvesting into their curriculum (Section 4.5.1), in their daily practice and radio advertised events. Additionally,

during the expansion into radio programming some members spoke of their use of rainwater harvesting practices through connecting them to different climatic variables. This illustrated them trying to make meaning of the practice (Hall, 1980) and as a way of taking ownership of the practice (Wenger, 1998) and seeing the knowledge becoming an integral part of them because of their continuous use of the practice ultimately leading to their serving as a repository of the knowledge (Wenger et al., 2002).

#### **5.1.4 Analytic Statement 4:**

**An expansive narrative engagement in an emerging RWH enterprise was simulated in a radio listening group around dissonance which enabled new ways of thinking and implementing rainwater harvesting practices.**

Section 4.9 provides an account of the social learning processes in a learning system that happened in a simulated participatory radio listening focus group in the public sphere. Based on literature discussed in Section 2.1.6 and 2.4 this enabled tracking how social learning interactions occurred in this setting.

Evidence in Section 4.9.1 presents the existing routines of the participants in the simulated participatory radio listening group. Evidence suggests that the different type of farmers that were present; the different challenges such as drought, livestock and bird invasion; articulated the different diversity in their crop production for mostly subsistence consumption and occasional selling of some. They also shared their radio listening habits as mostly being passive and not active listening with different genres. However, in their passive listenership they had never come across an agriculture programme on rainwater harvesting but some had little prior knowledge of the concept. Furthermore, other existing routines included how some farmers currently experiment with the idea of having some crops depending on rain with others on tap water while not entirely harvesting the rainwater. In line with literature presented in Section 2.7, by investigating this evidence one can clearly see that through discussion of their backgrounds, expertise and experiences they were able to arrive at a common environmental problem that they are all facing which is drought and their coming together was in the hope of finding a solution to this problem. This discussion of the rainwater harvesting narrative is a clear indication of a



continual negotiation of the already set enterprise by the IBLN in other sections and will be seen throughout this section. As a facilitator of this discussion, noting the environmental problem through their sharing of existing routines was a premise for the continuation of the participatory radio listening. This process of sharing the existing routines as evidence suggests can be associated with a sequential moment of orientation and exploration as proposed by Wals (2007). This is because participants were able to share their experiences and background and together found a shared purpose in participating in the radio listening. This is similar to Wenger's (1998) trait of a shared enterprise or domain in community of practice, where he says the trait is what brings people together as they find purpose. However, this was not a community of practice because it was just simulation likened to a radio listening club (see Section 2.1.5).

In previous sections of this chapter I discussed how the IBLN set the agenda of the programmes by having the idea of farmers thinking ahead of time in preparation of drought. This, as evidence suggests in Section 4.9.1, echoed with the farmers and gave reason to suggesting that the environmental problem they were facing was because of their lack of thinking and planning ahead of time. This evidence justifies the theory of agenda setting because, the IBLN did set a perspective for the listeners and themselves. The listeners in this group 'wore' that perspective. This particular evidence resonates with social learning sequential moments presented in Section 2.7. There is evidence of self-awareness of their own frame and by doing so they deconstructed their notion and co-created the idea by wearing the identity of being labelled as farmers that do not think ahead. Evidence in Section 4.9.2 indicates the crisis that came during the actual process of listening to the radio programme. Here, listeners in the simulated participatory listening group began to view their own frames by seeing rainwater harvesting not as a new concept but as something associated to practices they had seen growing up and being practiced during their youth. This association with indigenous knowledge later led to the participants becoming more aware of what rainwater harvesting was about. This reflection can be likened to the sequential moment of self-awareness (see Section 2.4). Wals (2007) notes that during these processes, participants are likely to realise their own frames that they have held onto. This resonates with Dyball et al. (2007) when they noted that the process of social learning exposed individual perspectives.

Findings in Section 4.9.3 further illustrate reasons why the practices were abandoned. These reasons included colonialism, land distribution policies by colonial masters, failure of intergenerational learning of the different practices and dangers associated with the different practices. This evidence can be associated with Wals's (2007) social learning sequence moment of de-framing or deconstructing. Literature presented in Section 2.7 suggests that through a continuous negotiation and collaboration of the – to borrow Wenger's (1998) word – 'enterprise' creates conflict or dissonance of ideas; which both Wals (2007) and Belay's (2012) research findings justify as the precondition for social learning, thus underlining how learning take place. The process of co-creating can be seen in evidence shown in Section 4.9.3. This section illustrates how after participants through a continuous negotiation of the enterprise and deframing their own frames began to co-create by rethinking and renegotiating rainwater harvesting practices. This was mostly done through using social ecological justifications by associating rainwater harvesting and how to overcome the dangers that are associated with it as presented in a dialogue in Section 4.9.3. By articulating the different solutions of overcoming the dangers of the rainwater harvesting it was prompted by the discomfort and deconstruction of their own frames, thus providing alternative ideas as Wals (2007) outlines. By doing this articulation, it brings about an essence of making meaning and ownership of the practice (Hall, 1980). This whole process is justified by Dyball et al. (2007) when they attribute reflexivity being the cause for rethinking perspectives and consideration of new insights and knowledge.

Findings in Section 4.9.3 and corroborated in Section 4.9.4 further suggest that during the learning process as stipulated in the model in Section 2.7, after the re-thinking and renegotiation of rainwater harvesting practices emerged new knowledge, relationships, norms, values and actual implementation of the practices either for the sake of experimenting the concept of rainwater harvesting to those that were not familiar with and to others the new ideas co-created. Evidence in Section 4.9.4 illustrates the new plans that participants made, which included: implementation of rainwater harvesting practices; strengthening existing relationships among themselves as farmers first through visiting each other and learning from each other, then with some members of the IBLN (like their extension officer whom they felt would advise them on various rainwater harvesting practices); establishing new relationships with other members of the IBLN; evidence essence of collaborative learning together and seeing meetings as "fruitful" and

imaging abundant crop production once they implemented the practices; and lastly, seeing community radio as a platform where they could learn by actively listening and engaging with the topic at hand. Section 4.9.4 highlights Wals's (2007) social learning sequence moments of applying or experimenting because it indicates that the previously translated ideas or frames in the co-creating moment were either already being put to test or planned to be tested, so as to meet their identified environmental problem that brought them together. This justifies that the result of social learning leads to social change or change in understanding of an environmental problem. The findings in Section 4.9.4 further suggest this can be seen through different new plans that the participants were seeking to implement or to strengthen. The reviewing sequence moment of social learning can be seen through the participants using their imagination in seeing their production as being plentiful after implementation of practices. The same can also be said for viewing the collaborative learning as being fruitful and viewing community radio as a learning platform for contributing to sustainable living. This resonates with Wals's (2007) meaning of this moment of being one that assesses the addressed environmental problem to the new frames and ideas. A limitation to the study at this point is that due to the time frame of the study I was not able to find out more about the degree at which the actual initial environmental problem was or could be assessed against the new frames contrasted because rain had not yet fallen for the implemented practices to capture, store or conserve it.

## **5.2 Summary of Findings**

The study sought to answer the research question of how the development and enactment of a radio programming process shaped an emerging community of practice (IBLN) and the expansion of social learning in relation to rainwater harvesting. The study found that the Imvotho Bubomi Learning Network developed the radio programming processes through continuous negotiation of the enterprise of rainwater harvesting, which was led by a contributing involvement of members connecting the enterprise to climatic variables. In so doing, they identified with the practices and the radio programming process expanded their identity from an isolated community of practice to one that became established as an identifiable social practice through various media platforms and with personal recognition from onlookers. This led to the contributing participants being recognised as a knowledge community.

It is through the expanded mutual engagement and their identity as being a knowledge community that they were recognised as knowledge stewards of rainwater harvesting. They came to be seen in this way because of their exhibition of ownership of the practice. This is seen throughout the study by virtue of them extending their knowledge sharing opportunities into radio programming. This alone, is an act of knowledge stewardship that they came to possess in tangible shared mutual resources and also in intangible ways such as by making their domain a part of them.

Since the development and enactment of the radio programming process led to the CoP being identified as a knowledge community due to their expanded mutual engagement and being knowledge stewards, a group of farmers in the public sphere identified them as a knowledge community. This recognition was from participants in a simulated participatory radio listening group, which came about as a continued narrative of engaging and negotiating the rainwater harvesting enterprise and an emerging agenda set by the IBLN. It is here where the evidence of social learning interactions is exhibited through using Wals' proposed sequence of moments of social learning which were taken up into a co-engaged and developmental learning system model probed in this study. Here the successive resolving of dissonance was a core dimension of the social learning taking place in the group (Wals, 2007). It is notable here that the deliberations on the enterprise also led to the new ways of thinking and implementing rainwater harvesting practices by the participants.

### **5.3 Conclusion**

This chapter has discussed the findings of this study as presented in Chapter 4. The discussion was done through the framework of the research question, associated literature and theoretical framework. The next chapter presents the conclusions of this research, summary of the study and provides some reflections on the entire research process that I undertook.

## **Chapter 6: Conclusion**

### **6.0 Introduction**

After an in-depth discussion of the findings in Chapter 5, this chapter presents a summary as a conclusion for the entire study. The chapter begins with presenting concluding research remarks (6.1) followed by a reflection of the study as an ending to the thesis (6.2).

### **6.1 Summary of the Study**

The study was developed around the relatively uncharted area of a media project component in the Amanzi for Food Research Project. Giving more attention to media had emerged as a recommendation from a previous study (Weaver, 2015) (see Sections 1.3 and 1.1.3). The recommendation called for further exploration of the use of media by the Imvotho Bubomi Learning Network. Exploration of this seemed purposeful to this study because it went hand in hand with revelations from literature which showed how environmental education research on the use of community radio in extending social learning has not been widely explored in the South African field. Additionally, literature also suggested that previous research in the field examined community of practice from an initial point of view in the CoP life cycle and not further along or in its expansion.

Through the use of various data generative techniques discussed in-depth in Chapter 3; the study was able to generate and discuss findings responding to the research question of how the development and enactment of radio programming process shaped an emerging community of practice on the expansion of social learning interactions on rainwater harvesting. The underlining argument of the thesis in relation to the question is that there was a relational process to rainwater harvesting as an object, thus making it ‘an identifying process’. The identifying process is what constituted the actual learning process which was embedded in the expansion of the three COP social competencies namely, their joint enterprise, the processes of mutual engagement and the emerging shared repertoire. The same can also be said to be present in the actual occurrence of social learning sequence moments in a learning system.

Furthermore, the first half of the study concludes that the participants in the Imvotho Bubomi Learning Network identified with the object of rainwater harvesting. This process then led to the identification process where they identified with and came to identify themselves as rainwater harvesting custodians. In this way they both began to see themselves and came to be seen as a knowledge community of the rainwater harvesting knowledge. In the same way, this identification process was evident in the second half of the study – the micro level– where the participants in the simulated participatory radio listening group identified with the object of rainwater harvesting which was evident through the various articulations made. This created space for learning in such a way that the identifying process was embedded in the tracking of social learning sequence moments in a learning system. For the study, this means that the radio programming process on rainwater harvesting was developed and enacted through a relational process to the object which made it an identifying process at both the macro and micro levels of emerging learning and learner-led engagement. This can be seen in the expansion of the social competency dimension of a community of practice and through the tracking of social learning sequence moments in a learning system, thus bringing about and expanding the actual learning process in both cases.

## **6.2 Reflections on the Study**

Having done this study and reviewed the literature, I have seen that the theory of community of practice can be used in different research contexts for different studies. My selection of the theoretical framework fitted the nature of this study and I found the concepts chosen spoke to the study because they complemented each other at many levels. For example, the issue of power can be seen in the use of radio and in the setting of the agenda to the masses. This complemented very strongly with the aim of a CoP and its transformation over time. If I were to redo this study, I would have spent more time reading more literature so that I could have had an in-depth view of the entire study. I wish to have figured out my time management strategies in advance before collecting my data. As far as collecting data is concerned, I would have liked to have individual interviews with the farmers in the simulated radio listening group. In the same way, I would have liked to do follow-up interviews with these farmers and observe their implemented rainwater harvesting practices after the rains had fallen, because at the time of collecting data the rain had not yet fallen even though the farmers had implemented the practices. All in all I enjoyed to

doing this study because by the end of it not only did I grow in knowledge but in respect for others, especially the elderly. Valuing who they are and they know. The study has helped mould me into person who seeks to serve others with my skills before serving myself.

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## APPENDICES

### Appendix A: Example of a developed radio programme script

#### RADIO PROGRAMME SCRIPTS FROM RADIO PROGRAMME 1 TO 4

#### **Programme 1 15<sup>th</sup> February 2016: Introduction of Amanzi for Food and what is already known**

Presenter

Panel Members

RPL1– (Lecturer from Fort Cox College of Agriculture and Forestry; she is part of the Amanzi for Food Imvothu Bubomi learning network) (Speaks English)

RPF1 – (Farmer from Perksdale; He is part of the Amanzi for Food Imvothu Bubomi learning network) (speaks isiXhosa)

RPR1 – (From Rhodes University Amanzi for Food member) (Speaks English)

Questions

Last time you were on air we talked about Amanzi for Food and who you are. Kindly remind the listeners about Amanzi for Food and what you do?

(To be answered by RPR1: Highlight the what it is, when it started, who is involved in the Amanzi for Food)

How different will your time on radio this year be from last year, what would you like the listeners to watch out for?

(To be answered by RPR1: highlight with emphasis that we will be talking about the different WRC RWH sustainable practices and that the audience should share with us what they know about these practices.)

Presenter:

Remind listeners who the panel are and why A4F is on air, where they can find information [www.amanziforfood.co.za](http://www.amanziforfood.co.za) and Facebook page – Amanzi for Food.

Give listeners the call number, SMS number 073 641 3872, Facebook page.

Also encourage listeners to share their stories of using rainwater harvesting practices.

So Amanzi for Food deals with sharing information on rainwater harvesting, why is this necessary, why do you do it?

(To be answered by RPL1: Link answer by giving reason as in relation to current drought situation; Link answer by informing farmers to think ahead while embracing the current drought crisis)

RPF1, as a farmer you have used some of the rainwater harvesting practice, tell us what kind of practices have you used?

RPF1: (highlight your use of galesha and amadanyana; explain how they work)

Presenter: Notify listeners to call in NOW! Repeat phone number SLOWLY and SMS line 073 641 3872. Also inform them that they call with questions and share what rainwater harvesting practices they know of.

The rainwater harvesting practices that RPF1 has explained, how are they different from the practices that WRC Amanzi for Food is trying to share with the farming community?

(Answered by RPL1: highlight on traditional practice of gelesha and amadanyana in relation to modern WRC rainwater harvesting practices (what are they in English))



From your observation and working with farmers have you seen these practices being used in the farming communities and are there any other practices?

(RPL1 and RPF1: Highlight some of the practices being used and also ask audience to share their stories of practices that they are using or know of.)

With people not using much rainwater harvesting practices, why do you think this is the case?

(Any of the panellists: highlight certain myths that are associated with rainwater harvesting and try to debunk them. Touch on the use of grey water etc.)

Presenter:

Remind listeners who the panel are and why A4F is on air, where they can find information [www.amanziforfood.co.za](http://www.amanziforfood.co.za) and Facebook page – Amanzi for Food.

Give listeners the call number, SMS number 073 641 3872, Facebook page.

Also encourage listeners to share their stories of using rainwater harvesting practices.

RPL1 you are a lecturer and you are part of the Imvothu Bubomi, kindly tell us what does Imvothu Bubomi do?

(Highlight how Imvothu Bubomi helps people in sharing information and if it helps train people; talk about the training at RPF2 and also the one IBLN under RPS2 is organising. This training is informed by the WRC rainwater harvesting material.)

Where could listeners find the advice or see the options about Amanzi for Food and most importantly on rainwater harvesting practices?

(Answer to include the Website: [www.amanziforfood.co.za](http://www.amanziforfood.co.za), Tel: 073 641 3872

Facebook Page: Amanzi for Food, Imvothu Bubomi Learning Network ‘stakeholders’)

Highlight a brief description of the next show based very much on the practices people are particularly interested in

**Programme 2: 22<sup>nd</sup> February 2016: Selected common practices and articulation of these practices.**

Presenter

Panel Members

RPL2 – (Lecturer from Fort Cox College of Agriculture and Forestry; he is part of the Amanzi for Food Imvothu Bubomi learning network) (Speaks English)

RPF2 – (Farmer from Fort Beaufort; she is part of the Amanzi for Food Imvothu Bubomi learning network) (speaks isiXhosa)

RPR1 – (From Rhodes University Amanzi for Food member) (Speaks English)

Questions

Last time you were on air we talked about Amanzi for Food and who you are. In case we have any listeners listening in, kindly give us a recap of last week's show.

(To be answered by RPR1: Highlight a brief description of what was discussed last week. This includes a summary of Amanzi for Food.)

RPL2 as a lecturer and being part of the Amanzi for Food Imvothu Bubomi Learning Network, what does one need to harvest rainwater?

(To be answered by RPL2: Explain by highlighting the need for the catch, storage and use of water. Emphasize that these differ according to a chosen practice)

Presenter:

Remind listeners who the panel are and why A4F is on air, where they can find information [www.amanziforfood.co.za](http://www.amanziforfood.co.za) and Facebook page – Amanzi for Food.

Give listeners the call number, SMS number 073 641 3872, Facebook page.

Also encourage listeners to share their stories of using rainwater harvesting practices.

RPR1, on last week's show you said you have implemented some of these practices in your homestead garden. May you kindly tell the listeners what goes into preparation of some of these practices?

(RPR1: Link answer to testing soil type and that the college helps with soil testing, also to calculating rainfall with a rain gauge and calculating slope. You may also include how you prepared for the practices your place)

RPF2, as a farmer how did you come to know about Amanzi for Food and the information of rainwater harvesting practices and why did you join the Imvothu Bubomi Learning Network?

(RPF2 highlight how you came to know about Amanzi for Food and rainwater harvesting practices of listening to the radio and why you joined the network)

RPF2, are there any practices have you implemented since hearing Amanzi for Food on radio and joining the learning network?

RPF2: (Highlight your use of a rainwater practice you have used i.e. your use of mulching and any other practice)

Presenter: Notify listeners to call in NOW! Repeat phone number SLOWLY and SMS line 073 641 3872. Also inform them that they call with questions and share what rainwater harvesting practices they know of.

RPL2, do you have any rainwater harvesting practices at Fort Cox College of Agriculture and Forestry? What are they and detail out how listeners would implement them.

(RPL2: describe to great detail your use and implementation of ponds and drip irrigation or any other practice. Please explain and describe in great detail)

RPL2, you are a lecturer at Fort Cox College and you are also the chairperson of the Amanzi for Food Imvothu Bubomi Learning Network. What other rainwater harvesting practices would you like to share with the public?

(RPL2: describe to great detail the use of diversion furrows as a rainwater harvesting practice)

RPF2 would you like to add on another practice from what Mr. Matambo has said?

(RPF2 describe to great detail the use of roof water harvesting as a rainwater harvesting practice)

Presenter:

Remind listeners who the panel are and why A4F is on air, where they can find information [www.amanziforfood.co.za](http://www.amanziforfood.co.za) and Facebook page – Amanzi for Food.

Give listeners the call number, SMS number 073 641 3872, Facebook page.

Also encourage listeners to share their stories of using rainwater harvesting practices.

As Amanzi for Food Imvothu Bubomi Learning Network you promote the Water Research Commission rainwater harvesting practice, is there another way you do this, do you give training to people who would want to know about them?

RPL2 and RPF2: (Highlight how Imvothu Bubomi helps people in sharing information and if it helps train people; talk about the training at RPF2 and also the one IBLN under RPS1 is organising. This training is informed by the WRC rainwater harvesting material.)

RPR1, after all has been said and the different practices have been highlighted in today's show, why should people reach out and know these Amanzi for Food rainwater harvesting practices?

RPR1: explain the need to have and implement these practices in relation to drought situation and how farmers are to think ahead before the crisis gets worse

Where could listeners find the advice or see the options about Amanzi for Food and most importantly on rainwater harvesting practices?

RPF2: Answer to include the Website: [www.amanziforfood.co.za](http://www.amanziforfood.co.za), Tel: 073 641 3872  
Facebook Page: Amanzi for food, Imvothu Bubomi Learning Network ‘stakeholders’ such as Fort Cox College, NEDA, UFH, Rhodes University)

N.B. For any immediate questions concerning the questions please reach me Chisala on 0727275794.

**Programme 3: 29<sup>th</sup> February 2016: Selected common practices and articulation of these practices.**

Presenter

Panel Members

RPS2 – (member of Imvothu Bubomi Learning Network) (IsiXhosa and English)

RPR2 - (From Rhodes University Amanzi for food member) (IsiXhosa and English)

RPS1- (training officer of Imvothu Bubomi Learning Network) (IsiXhosa and English)

Questions

RPR2, welcome to the show. For the sake of new listeners and for those who may have forgotten you.

(To be answered by RPR2: Highlight a brief description of Amanzi for Food.)

Last week on the show RPL2 shared with us that the Imvothu Bubomi Learning Network will be sharing knowledge and implementing rainwater harvesting practices from Water Research Commission. RPS1 what was your role as the learning network in this?

(To be answered by RPS1: Explain by highlighting what the training was about the collaboration between UFH and Amanzi for Food, what you did as the training coordinator)

Presenter:

Remind listeners who the panel are and why A4F is on air, where they can find information [www.amanziforfood.co.za](http://www.amanziforfood.co.za) and Facebook page – Amanzi for Food.

Give listeners the call number, SMS number 073 641 3872, Facebook page.

Also encourage listeners to share their stories of using rainwater harvesting practices.

RPS2, you are part of the learning network, what was your role of being part this training?

(RPS2: Explain by highlighting what you did for the training to come together and what happened at the training, how many co-ops were present)

This question goes to RPS1 and RPS2, What kind of Water Research Commission rain water harvesting practices were shared and shown to the farmers in Gwali?

(RPS1: Explain the following rain water harvesting practices and how they work: Mulching and making an A frame and what it is used for.

RPS2: Explain diversion furrows and infiltration pits (gelesha) as was demonstrated during the training and how they work. )

RPR2 Suppose a farmer has one of the WRC books that you talking about which have these different practices, how can they find a practice suitable for them?

RPR2: (Highlight how the navigation tool works. Also highlight that the navigation tool is on the website)

Presenter: Notify listeners to call in NOW! Repeat phone number SLOWLY and SMS line 073 641 3872. Also inform them that they call with questions and share what rainwater harvesting practices they know of.

RPT1 as training coordinator of the Amanzi for Food Imvothu Bubomi, is there any other training that you have scheduled and can people be part of it?

(RPT1 explain if there is any training happening soon)

Presenter:

Remind listeners who the panel are and why A4F is on air, where they can find information [www.amanziforfood.co.za](http://www.amanziforfood.co.za) and Facebook page – Amanzi for Food.

Give listeners the call number, SMS number 073 641 3872, Facebook page.

Also encourage listeners to share their stories of using rainwater harvesting practices.

RPR2, after all has been said and the different practices have been highlighted in today's show, why should people reach out and know these Amanzi for Food rainwater harvesting practices?

RPR2: (Highlight by explaining the need to have and implement these practices in relation to drought situation and how farmers are to think ahead before the crisis gets worse)

RPS2, where could listeners find advice or see the options about Amanzi for Food and most importantly on rainwater harvesting practices?

RPS2: Answer to include the Website: [www.amanziforfood.co.za](http://www.amanziforfood.co.za), Tel: 073 641 3872

Facebook Page: Amanzi for Food, Imvothu Bubomi Learning Network 'stakeholders' such as Fort Cox College, NEDA, UFH, Rhodes University. Lastly emphasize that they can find more information in the Water Research Commission books which are in most South African Languages)

N.B. For any immediate questions concerning the questions please reach me Chisala on 0727275794.

**Programme 4: 11th March 2016: Learning about implementing practices through working together with different Amanzi for Food stakeholders.**

Presenter

Panel Members

RPR2 – (From Rhodes University Amanzi for food member) (English)

RPT2 – (From NEDA and member of Imvothu Bubomi Learning Network) ( English)

RPT1 – (Extension Officer from Middle Drift and member of the Imvothu Bubomi Learning Network) (IsiXhosa and English)

#### Questions

RPR2, welcome to the show. For the sake of new listeners and for those who may have forgotten you.

(To be answered by RPR2: Highlight a brief description of Amanzi for Food and a brief description of last week's show.)

RPT1, as an extension officer. How relevant is the Water Research Commission Amanzi for Food project to your work?

(To be answered by RPT1: Explain by saying how this project is relevant to your work as an extension officer in Middle Drift)

#### Presenter:

Remind listeners who the panel are and why A4F is on air, where they can find information [www.amanziforfood.co.za](http://www.amanziforfood.co.za) and Facebook page – Amanzi for Food.

Give listeners the call number, SMS number 073 641 3872, Facebook page.

Also encourage listeners to share their stories of using rainwater harvesting practices.

RPT1, do you have farmers that have come to your office wanting to implement some of the rainwater harvesting?

(RPT1: Explain by highlighting some stories of your experience as an extension officers working with farmers on some of the practices. For instance, you talk about how RPF2 came to know of Amanzi for Food and other farmers stories)



From RPT1 explanation we see that there is a collaborative effort between different stakeholders and the farmers. RPT2, how does NEDA find relevance the WRC Amanzi for Food?

(RPT1: Explain on how this project relates to your work at NEDA)

Could you possibly provide us with a story on the ground in relation to rainwater harvesting in connection with your work, Mr. Passmore?

(RPT2: explain by highlighting if any a story that you have come across on rainwater harvesting)

Presenter: Notify listeners to call in NOW! Repeat phone number SLOWLY and SMS line 073 641 3872. Also inform them that they call with questions and share what rainwater harvesting practices they know of.

RPT1, as an extension officer and being part of the Imvothu Bubomi learning network, what kind of help can you give a farmer who has heard you today on radio and is seeking help from you on their rainwater harvesting practice, how would you help them?

RPT1: Highlight how you would help them. Which people you would connect them within the learning network and what material you would refer them to and why

What about you RPT2, how would you help a farmer who walks into your offices at NEDA wanting to learn more about rainwater harvesting practices?

RPT2: Highlight how you would help them. Which people you would connect them to within the learning network and what material you would refer them to and why those materials.

RPT2, this is the fourth show we have had on rainwater harvesting, any last words to the listeners?

RPR2: (Highlight the need for farmers to think ahead to prepare about the drought situation to capture and harvest winter rains. Also emphasize on the importance of networking and learning together and respecting each other's knowledge)

Presenter, ask the other participants on the panel for any last words that they have for the listeners.

(Each panellist says their final remarks to the listeners in relation to rainwater harvesting)

Presenter after panel has answered 12 give the listeners where they can find more information about the rainwater harvesting practices.

Website: [www.amanziforfood.co.za](http://www.amanziforfood.co.za)

Tel: 0736413872

Facebook page: Amanzi for food

They can go to NEDA, UFH, Rhodes University, Lloyd Village

Find information in the Water Research Commission books

N.B. For any immediate questions concerning the questions please reach me Chisala on 0727275794.

## **APPENDIX B: An example of a radio programme transcript**

### **Radio Show: 29 February 2016**

Radio transcript programme 3 (RTP3)

Radio DJ: ...because of time, let me come to our guests. We have Asanda Apleni, who is a member of Invoto Bubomi Learning Network. We also have here, Mr. Pesanayi, who is coming from Rhodes University, and he is also a member of Amanzi for Food. We have also the third one, Sizwe, who is a training officer of Invoto Bubomi Learning Network. As I have said, I would like us to get started with our conversation with them. Let me start with the three of you. Let me welcome you on the show, Amanzi for Food. Let me start with you Mr. Pesanayi. Let me welcome you on the show. For the sake of our new listeners, I would like you to remind or tell them who are you, and your role in this Learning Network.

Mr. Pesanayi: Good evening listeners I am going to be speaking to you in English and I hope that you will excuse me. I am just going to briefly describe what Amanzi for Food is and I will start by saying Amanzi for Food is an innovative programme that is designed to improve water availability and water accessibility by using very few locally available resources. This particular programme is supported by the water research commission of south Africa and it is facilitated by Rhodes University and it is implemented locally in Nkonkonbe by farmers, local educators. We have the economic development agency and also the extension officers are they implementers on the ground. It is really a way to fight drought and water scarcity. In other words, it is a weapon a farmer can use their water for food. Amanzi for food as a network of agriculture educators who are composed of farmers, extension agents and educators who are collaborating on various things including developing demonstration sites for rainwater harvesting. So as we speak they are quite a number of established demonstration sites which have been established in the villages and in the colleges, especially at fort Cox College. The aim of this programme is to improve nutrition and household incomes and the improvement of household incomes is done by reducing expenditure on buying food, that is in a nutshell what Amanzi for Food is about.

Radio DJ: Yes, Ok. I just want to touch on what you have established in institutions. What exactly are those?

Mr. Pesanayi: Right. What I mean by demonstration sites is examples of different ways of capturing and storing water and using it to convey to the crops in the field. So they are various

structures like small farm dams for example if you go to Fort Cox college, you find a farm dam that is 3x3 and 1.5m deep and if you go to Lloyd village here in Alice, you find a cooperative there which is running a garden. That garden has a smaller farm dams *amadanyana* which are much smaller than the ones found at Fort Cox College and they got five of them and connected to them are diversion furrows which capture water that is flowing, what I can call run off and they channel it to these structures. Which means water is available in the garden for farmers to use. It means they can fetch the water from those structures and bring it to their crops and also the water can seep underground and water the crops underground, which is the idea. If you got to Kieskkammahoek which is the next municipality *amathlati* you find another farmer who has implemented a different water harvesting system there and she is using infiltration pits. But we are also encouraging the implementation of traditional indigenous methods like *gelesha* which is well known to the local people in this area.

Radio DJ: Ok. Sisi, let me come to you. Last week on the show Mr. Mathambo, explained to us that Invoto Bubomi Learning Network will be sharing the information on implementation of these practices as we get them from the water research commission. Can you please tell us about your role in this network?

Sizwe: I am a training co-ordinator, not a training officer in this learning network. As a co-ordinator, we identify a place where there is a need. But there are also cases whereby those who have some challenges come to us and ask for help. So, as a co-ordinator, I visit our different stakeholders who have in-depth knowledge about our practice. I arrange a meeting so that those who are farming can come for training. For example in this time, we have had training in Msobomvu whereby we were working with farmer from Gwali. This is where I met with Mr. Pesanayi, from Rhodes University. We managed to connect with others coming from Fort Hare, professors and students. Moreover, we connected with others from Fort Cox College. This is to say, we have connected with different calibre of people from this learning network. We made them to meet with farmers because there are also local people who are saying, as much as we have many challenges; these people have some solutions for these problems. So we met as a crew to help the community which has reported to have problems and wishes to be taught about this practise. For that reason we conducted a training whereby we taught them the ways of

conserving and harvesting water. This goal was to prepare the local people and farmers to be more resilient in the next coming season.

Radio DJ: O, from these training programmes, let us say, maybe it is only farmers who are involved. Did you find any other person beside farmers who is interested in this practise, for example someone with a backyard garden?

Sizwe: My brother, the definition of the word, farmer, to me, refers to someone who has a garden and uses it for agricultural purpose. For someone to be involved into farming practices does not necessary need to have a big land, as we used to see some old white men do. So, we talk about those fellows who use their backyard gardens to feed their own families. They are our main target group. We have focused to improve local communities starting from grass root level.

Radio DJ: Asanda, you are a part of this learning programme. What is your role in this training?

Asanda: First of all, we are working with farmers as the University of Fort Hare. We visit them every week. My role in the programme is to make sure that all the involved stakeholders have a clear understanding during the training program. I interpret for them English to isiXhosa so that they may grasp everything which is said during the training. I have also been an acting secretary for them so that they will be able to give a written report to the members who have not been able to attend the training.

Radio DJ: O Ok. To the two of you, from these water research commission trainings, which training have been done in people from Gwali?

Sizwe: They have been so many, sir. The first one, I would say it is easy. We can even do it ourselves. In English it is called mulching. If I were to explain it in isiXhosa, this is whereby you cover the soil which you are using for cropping. You cover the soil using dry grass, dry leaves, and other organic material. The point here is that when you follow this farming practice, you do not need to irrigate frequently. This is a water saving strategy because mulching allows the soil to keep the water for a long time. The interesting part about this practice is that, weed is controllable. Moreover, my brother, from the studies, we have found that when it is raining, we thank GOD. However, you normally see that water run-off in dirtiness. We found out that rain run-off with top soil. Top soil is the richest part with soluble nutrients to feed your plants. So when using mulching approach, the top soil is also protected. This means that this approach does not only save water but also save your soil. Let me stop here, but we also learnt one other thing which is called diversion furrows. Remember, we said we are using the available material in

order to harvest water. We make the ways not to use the municipality water but the one from rain. So, when it is raining, one of the things we advise farmers to do is that they must go out during that rain and go to your garden to see whether there is run-off. Run-off is not rare in gardens. Check the direction to which this water take. Then what you will do is that, you will take your hoe and make furrows. Your furrows will direct the water to where you want them to be. This is to avoid the waste of water because there is a widespread of water scarcity. This is called diversion furrows. For the sake of time, I am just touching the surface. There is a lot of learning and training which has taken place there. Asanda can also help to explain in details. Asanda: there is also another one called “trench fertility”. In trench fertility you take humus, cover it with grass or leaves and mix it with water. On top, mix it with soil, grass and mix it water once more. If you did that, this can take a period of up to five years long. When you have to irrigate, you will need not too much water. For example, in normal cases, irrigation is required for two times a day, morning and evening. But to this method, you will have to irrigate one time per day. We also had another one called diversion furrows. If your tank has a leaking part, you have to open a trench. Let’s say in your garden you have seed plots. You will have to open furrows which are going to hold the running water. This will permit your crops to suck this water and level of irrigation will be decreased. We also have learnt about the other which is called infiltration pits. The infiltration pits are the pits made specifically for sucking or drawing water when it is raining. You open these pits using a hoe. When it is raining, water gets into those pits. You are also able to plant your seeds/seedlings to those pits or else, next to the pits, or in both places, inside and outside the pit. Then you cover the place with water to counteract the evaporation.

Radio DJ: Ahh, wow, we are learning a lot today. Mr. Pesanayi, let me come to you. Suppose a farmer has one of these water research commission books that you talk about which have these different practices. How can a farmer find a practice suitable for them?

Mr. Pesanayi: Buhle, let me start by mentioning that the two books that we are promoting, one is entitled water harvesting and conservation which is volume two part one has a technical manual and farmer handouts for farmers that are in this particular text. The next is entitled agriculture water use in homestead gardening systems, so these are the main texts that we are promoting. In order for a farmer to be able to navigate in these books, we have developed a simple navigation tool, which is a summary of all the practices. What they navigation tool does is summarise what

each of these practices are, it could be infiltration pits that Asanda was talking about or it could be diversion furrows. So what the navigation tool does is it takes a picture which presents that practice. Then it explains very briefly what this practice is about then it also talks about the scale on what level the practice can be implemented either at homestead level or at garden level or at a much larger field level. So that's what this navigation tool does and that's what is explained in the handouts. It also explains the soil type the slop and also the rainfall patterns. So a farmer usually knows the terrain they are farming, what kind of rainfall falls in the area and they use that information to select which practice best suits them. The navigation tool is a brief description of the method and due to a page number in a book where the practice is explained in more detail. If one does not have the books they can find on the website which has got the books in electronic form and that website is [www.Amanziforfood.co.za](http://www.Amanziforfood.co.za) so one can access it through the internet through a computer and we making it accessible through a phone. This is basically what the research commission is provided. It have done a lot of research using public funds and produced these materials for use by agricultural educators, farmers, extension officers and so forth.

Radio DJ: Yes, you mentioned the one of the aims. of having these practice is improving nutrition. Could you please tell us more about that? What it the importance of that?

Mr. Pesanayi: Buhle, nutrition is a very important issue in south Africa, there are lot of households who don't afford to buy food from the supermarket and if they don't do their own farming it means they don't have enough food for their families. So we end up with a situation where we have malnutrition in a home and it especially affects young children who are still growing. So if young children don't get adequate food as they are growing it means they are not going to reach their potential. Even their brains are not going to grow to the right capacity. It means we are limiting the potential of those children. So if households are able to grow their own food then we are able to improve the nutrition of the children and the nutrition of everybody in the family. So you cannot improve the nutrition when you don't have water. So what we are basically saying is this water harvesting is a way of improving your access and availability of the water so that you can improve the amount of food that you have and therefore improve your nutrition.

Radio DJ: Listener of Fort Hare FM, you are still with Buhle Mfihlo. The name of this programme is Ezolimo. Today we are discussing about Amanzi for Food Learning Programme,

Invoto Bubomi Learning Network rather. We have our guests in the show. We have Asanda Apleni, who is a member of Invoto Bubomi Learning Network. She is with Mr. Pesanayi from the University of Rhodes, who is also a member of Amanzi for Food. We also have Sizwe Mqalo who is a co-ordinator in Invoto Bubomi Learning Network. The importance of this learning network is that in our days we are faced with water scarcity. So, we are making ways to conserve the available water. I've seen some advertisement in the TV, showing that water is diminishing little by little and we should try to preserve them as much as we can. This is another initiative and you can also see on Facebook, people have liked the programme. Here, Ondela Dolla Mahlathini likes their Facebook page. To you my listener, if you have any question, I would love you to make a phone call on 0406530042 or else if you want to check them on the internet, you can find them on [www.amanziforfood.co.za](http://www.amanziforfood.co.za). I am sure even if you try to search them on Google; there is something which can lead you to them. They have also their cell phone number which is 073 6413 872. If you have any question or idea, you can send them an SMS.. Here is also another, named, Kuhle Mabona. He also liked it on Facebook. We also see it on our programme when there is somebody who likes their Facebook page. Let's have a little break. Break... Break... There is a phone call. You can even make a phone call and make your voice be heard. Caller from Qwarhu: Truthfully, there is a great need to save water. For example, if all dams. can dry out, we will be in danger of lack of water. Your discussion is very clear even though people seem not voicing out their views. Thank you.

Radio DJ: Thank you a lot, Tamhlo. Where are you, are at Qhwarhu?

Caller from Qwarhu: Yes, I am from Qhwarhu.

Radio DJ: That was Tamhlo, Mhlobeni Jezile, saying that we should take care of our water because of its importance. Radio Fort Hare, Hello

Second Caller: Hello DJ, how are you doing?

Radio DJ: I am very fine, and how are you doing?

Second Caller (Qeqe): Yes, we are fine. Water is very important. However, our people are not like white people. If you can observe something at our township in Cumakala. There is a place prepared by government. The place is steep prepared for climbing at the Township known as Mlungisi. There is a tar road there, but we as black people have broken the steel which was there. So, this also applies to this water. You might find kids playing on the local taps and water will be flushing out. This is very hard. Let me stop there.



Radio DJ: Can you remind me your name.

Second Caller (Qeqe): I am Qeqe from Cumakala.

Radio DJ: You have been very scarce nowadays

Second Caller (Qeqe): No I am around.

Radio DJ: That was Qeqe. Let me come back to you, Sizwe. As a training co-ordinator, do have other trainings to conduct? If yes, is it possible that everyone can be involved? And where will they be held?

Sizwe: Currently, we do not have a scheduled training. Our target is to make a community to own this practice and be its own. So, each community should report the problem and state whether they desire to have this training. What usually happens at community level is that if you just bring something to them and say here is it and it is free. People usually do not show any appreciation and it appears as a useless programme. For example in Gwali, we met with people from there and had a chat with them. When we asked them of their need, they complained that we are working from early hours of the day but there is no water. May you please come and help us. So, we responded to that need because these people have explained their problem unto us. As a training co-ordinator, we managed to organise a crew which is made up of people with different expertise. Then we discussed the ways in which we are going to solve the problem at hand. We did not end there, we checked other things. My point is this, a community is allowed to approach us and tell us their challenges. We as the team we will work from the risen need.

Radio DJ: From your observations, when you look at the farmers, how do they view this initiation of water harvesting?

Asanda: First of all let me say, when something is still being discussed it is not clear up until it is done practically. At first it was not clear, but later they rejoiced when they see it being implemented. They promised that they will go back to their houses and organisations. Each organisation has about 15 members. Out of those members, four members came and represent their group. Those members will go back with new knowledge and report to the members who could not be able to attend the training. We were also there for them as the facilitators from ARDRI of the University of Fort Hare. This was to make sure that the information is shared among the farmers. We help in doing and speaking.

Sizwe: Let me add a little bit. Our trainings are not just discussion or chatting trainings. Yes, we admit that there are times meant for teaching but we usually go out and tell the farmers to bring

their ploughing materials such as hoe. We go out and show them in practical on what are they going to do after they have arrived in their garden and how is it going to help. In reality, we have had a great reception.

Radio DJ: Mr. Pesanayi, after all has been said and the different practices have been highlighted on today's show, why should people reach out and know about these Amanzi for Food practices

Mr. Pesanayi: Buhle, this past season 2015/2016 if you talk to any farmer in the Eastern Cape they will tell they had a lot of challenges in the Eastern Cape because of the drought. They will also tell you the drought events are increasing intensity and in season, so that means there is less water available for farming for crops for vegetables and for livestock. So this is a very good reason why farmers should protect themselves because the climate is changing and there is a lot of variability in season. So rainwater harvesting is a way of beating drought. That's one very important thing. Another important reason is that the little water that falls, or sometimes there is a lot of water that falls for a short time that is important for the farmer to capture this important rain that falls. I think U Sizwe explained that if you don't capture it, you are going to watch it go to the oceans and rivers and as it goes it goes with the farmers' soil also. The third reason is to preserve the farmers' top soil and make sure it continues it is productive. So this is actually the need to plan ahead and thinking ahead and every farmer should be doing that. we talked about the wrc books, I should have mentioned that there also handouts that are written in isiXhosa in there and that they are a number of examples that are written in those books of people from different backgrounds who have been practicing rwh for 50 years or so and have been successful and are maintaining it. So it very important for us to realise that there are examples for us in their some are here in the Eastern Cape some of them in Gauteng, you go to Free State they are there.

Radio DJ: Sisi Asanda, where can listeners get further advice from Amanzi for Food, especially for water conservation?

Asanda: They can visit the website [www.amanziforfood.co.za](http://www.amanziforfood.co.za) or make a phone call on 073 6413 872. Alternatively, they can visit our Facebook page or they should connect with people who are working with Invoto Bubomi, like Fort Cox College, NEDA, University of Fort Hare and Rhodes University. Lastly, for more information is available on water research commission's books. Their books are written in different languages.

Radio DJ: Thank you...this is the end...let's meet next week.



## **APPENDIX C: An example of a simulated participatory radio listening group transcript**

RLD 2

# 1

Chisala: Did you listen to the radio show which was held on the 11<sup>th</sup>, Monday?

RL1: Yes, I did listen.

Chisala: What did you think about it?

RL1: I think that we have been taught about some of the things which were being said there. And we knew the people who were speaking there. They clarified it that the water harvesting initiative have been there, it is not a new thing. The only thing we can tell is that some of the things which were said there have flushed out of our minds.

Interpreter: Do you see that they understand?

Chisala: Yes, but I need to know what they are saying for me to have a follow-up question.

Interpreter: Can you repeat this Sir. She said she need a person who will translate for her. But I have observed that you always understand when she speaks, but she does understand when you answer her. Hence, if we are able, let's try to mix English and isiXhosa. (From 01:14 to 01:24\_ She tried to interpret Participant 1's response).

Chisala: Ok, what did you think about the show itself?

Interpreter: Interpreted

All participants: The show is very fine and we are ok with it.

Interpreter: Interpreted

Chisala: Should we go ahead discuss it, do you feel you understood from it?

Interpreter: Interpreted

RL1: Let's discuss about the show, in case there important things which were not discussed.

Interpreter: Interpreted

Chisala: Ok. We are going to play the show again for the person who did not listen to it and then we will discuss from there onwards.

# 1

Chisala: Was there anything that you did not understand from that Radio Broadcasting?

RL 1: Nothing.

Chisala: You understood everything? Have you been to NEDA, before? Nkonkobe Economic Development Agency, in Alice?

RL1: I went to Fort Beaufort.

Chisala: Is it a place where you think as a farmer you would benefit from the information that they provide?

RL 1: Yes we understand, but we thought we are going to go to other programmes. But we thank you for doing the programmes you have already done. The messages you are giving us are very important. They help us to remember to switch on our Radios.

Chisala: And so you listen to the show?

RL1: Yes

Chisala: Last time you said the presenter was very fast. How was the presenter this time?

All Participants: Fast.

Chisala: It was still fast, you did not pick it up?

All Participants: Yes.

Chisala: Was there anything else you did not like about the show?

All Participants: We think there is nothing.

Chisala: What about the last time when we were here with the discussion that we had, what did you do with the information that you acquired from other people?

RL1: We have briefed our people that they should dig holes in their garden according to the steepness of their land in a way as to harvest the rain water. This water will be beneficial during the drought season. Moreover, we told them about the grey water.

RL2: I have also made for myself a dam in my yard.

Chisala: Ok, that's nice.

RL1: When the summer rain comes, it will come having a place prepared for it.

Chisala: And is there anything that you would improve or change about the show?

RL1: No, we do not think so.

RL2: (Addressing the woman participant) were you not around last week?

#3

Chisala: The last one is; having heard the last Radio Programme and this one. What did you decide to do with the information?

Interpreter: Interprets.

Participants: To save water.

Interpreter: To save water.

Chisala: And so what did they do with the different practices that we talked about last time?

Interpreter: Interprets.

RL 1: We have tried to teach other people.

Interpreter: Interprets.

Chisala: Oh!

Interpreter: So, what did you do? Did you dig up daMs.?

RL1: Yes, as for me, I have made the dam for myself, although it is not very big.

Interpreter: Interprets.

Chisala: Ok.

Interpreter: So, did you prepare your plots?

RL 1: I have plots to prevent soil erosion.

Interpreter: Interprets.

Chisala: Ok, what did the people that they taught think about the practices?

Interpreter: Interprets.

RL 1: Some of them really complemented the programme. To the point that some of them were interested to come and learn from here.

Interpreter: Interprets.

RL 1: And I am hoping that they will also come here and learn for theMs.elves.

Chisala: Ok. Through the discussions that we had last time, was there anything that they picked up from their fellow farmers?

Interpreter: Interprets.

RL 1: Yes, they have seen that we came for the good thing here.

Interpreter: Interprets.

RL 1: They also wished that the drying daMs. should be considered.

Interpreter: Interprets.

Chisala: Which side, as you are going to Keiskamahoek?

Interpreter: Around Fort Cox College.

Chisala: That's where we had our agricultural show,

Interpreter: Yes, next to the tar road. They are from that are.

Chisala: Ok. Suppose someone ask them about the rain water harvesting, what would they say it is from their own understanding?

Interpreter: Interprets.

RL 1: Water harvesting to us is water saving strategy.

Chisala: And from this particular radio show, they talked about demonstration sites. Do they know what demonstration sites are?

Interpreter: Interprets.

Participants: no answer.

Interpreter: I am sure that demonstration sites is where people are practically shown what they had been taught.

Chisala: Yes.

Interpreter: If you desire to see them you can go. Chisala, can you take them to the demonstration sites?

Chisala: Yes, we can. As Amanzi for Food we have demonstration sites at Fort Cox, Keiskammahoek, Seven Stars Dairy Farm and Lloyed village, on to Fort Beaufort.

Interpreter: She explains that they do have demonstration sites. So, when we talk of demonstration sites is where they practically show people their practices. If you are interested to visit them, you can organise the day with her. The importance of visiting the demonstration sites is that you always see what you were taught.

All Participants: We really wish to see those sites. This will help us not to depend on theory without having the site of it.

Chisala: In terms of different practices, which one do you prefer, the one in the book or the one from the demonstration sites?

All Participants: The demonstration sites is very better.

Chisala: Ok, because you see it?

All Participants: Yes, you can see nothing on a paper.

#4

Chisala: I was asking which do they prefer; demonstration sites or in the book, showing different practices.

Interpreter: Interprets.

All Participants: We want to see demonstration sites.

Interpreter: For them understand, they prefer to see the demonstration.

Chisala: Ok.

#5

Chisala: In terms of the people on the radio, do you prefer to hear lectures or the fellow farmers from the radio shows?

Interpreter: Interprets.

Chisala: Or do you prefer extension officers?

Interpreter: Who is holding this on the radio?

Chisala: Right now we have Mr. Dubasi, Mr. Dongi, from NEDA, one student lecturer.

Interpreter: Do you have problem with that?

All participants: No problem.

Interpreter: Interprets.

Chisala: Language wise?

Interpreter: Interprets.

Chisala: Language, isiXhosa?

RL 1: I think isiXhosa is fine for us. The reason being that none of us is struggling to understand isiXhosa.

Chisala: So, when I sent that message telling you that you should listen to the radio, did you tell other people to listen?

Interpreter: Interprets (Paraphrasing).

RL 1: Yes, we do tell other people to listen. We even give phone calls to some of our friends telling them that they should turn-on the radio.

Interpreter: Interprets.

Chisala: Ok, do they talk about it afterward?

Interpreter: Interprets.

RL 1: Yes we do talk about it before the programme starts. We say, the thing we were talking about is now on the radio.

Chisala: So, what did the others say?

Interpreter: They showed the interest.

Chisala: What was the main subject of the discussion? Were they asking you questions?

Interpreter: Interprets.

RL1: You know what; the people we were engaging are that kind which wants to see the demonstration before they can take many steps.



Interpreter: Interprets.

Chisala: What about making a phone call during the radio show or sending an SMS.? Why did they not ask questions during the radio show?

Participants: We do not know those things. Sometimes we prefer that you should give us a phone call.

Interpreter: Interprets.

Participants: We wished to ask some few questions, but we noticed that the people who were asking more questions were those who never attended any of our meetings. On the other case, we wish to ask questions but the Way programme is handled is very fast.

Interpreter: They understand everything. The only thing which is lacking is the demonstration sites.

RL 1: Once we go to the demonstration and see the procedure, we surely practicalise. After you have sent us to the demonstration sites, come and visit our homes and see. And this will attract the interest of other people who are not here.

RL 2: Everyone passing by will be interested to see. After seeing, surely he/she will go and practice it in their house.

Interpreter: Interprets.

Chisala: So, they can see? Ok. I wanted to find out whenever you have a problem in your homestead; which people do you go to for help, in terms of agricultural practices? Do you come here to the agricultural extension officers? Or do you go to place like NEDA, Fort Cox College, University of Fort Hare?

Interpreter: Interprets.

RL 1: We usually visit the agricultural extension officers. Sometimes they visit to our places, and we would be meeting in a community hall. This helps us to understand our problems, and we would be able ask them questions when we have come to their offices.

Chisala: Ok.

RL2: Another thing is that this method of approaching things is new. We never had an encounter where people would come and teach us on how to solve our own problems. In life we have learnt that every person has to face one challenge or another and that makes us not to worry too much. Hence people were finding it unfamiliar for me to come for the classes and later put what I have seen into practice.

Interpreter: Interprets.

Chisala: Ok, would they like to meet farmers who have been doing this, from elsewhere?

Interpreter: And they come to the office for the advice.

Chisala: So, have they been taught about water harvesting from these offices?

Interpreter: Interprets.

Participants: No.

Chisala: Do you think the officers should teach them?

Interpreter: Interprets.

All participants: Yes we do.

Chisala: And do they it is good that the officers are on the radio talking about this?

Interpreter: Interprets.

All Participant: Yes, it is good.

Interpreter: Yes, but they want them on-ground... (Other parts in English)

Chisala: That's all.

The End

## **APPENDIX D: An example of an interview transcript**

Interview MP

30<sup>th</sup> March, 2016.

My name is MPII

C1: You came into the learning the network as a member who heard the about Amanzi for Food through the radio. Tell me what was the programme about?

MP: Yeah, I heard that ehh a controller Mr. Dubasi who is a controller in the service centre where we associate with our Middledrift Farmers Association. Eh one farmer told me that he was going to be on Fort FM for Amanzi for Food then I should listen the programme started at 6 to 7. So I listened and then that is then I came to know about the network of Amanzi for Food.

C1: was there there anything that you liked about the programme? On rainwater harvesting. Was it something that you found interesting?

MP: Yes, it was very much interesting and it was beneficial to us because as communal farmers we don't have water we lack water and it is becoming a challenge for us to continue with our food gardens so water is very important and I found the programme interesting and very much helpful and informative.

C1: How has been your stay and being part of the learning network, have you benefited from being part of the learning network or not and in what way?

MP: Yes I have benefited and I have seen the benefits because even now I am practicing the methods that we were taught of the different types of how to conserve water.

C1: What kind of practices have you so far implemented into your homestead garden, is it a homestead garden or

MP: It's a homestead garden now because we've abandoned the one for the co-operative because of drought and I was told I must start by practicing it into my homestead garden first so I have done it were I have done raised beds, I have dug trenches and I have done the small daMs. so that I can be able to when it rains the water can be harvested. And since our training from Lloyd that we heard that there was a Mr. Phiri who was saying he wants the water and the soil to get married so I have done that also.

C1: so umm being part of the learning network and being part of the radio broadcast, how did you prepare to be part of the radio broadcast after sending you the questions before hand?

MP: ehhhh because fortunately, I am a person who does a lot of research and studying, I even googled some of the other methods and I even used the books that I was given by the group and it prepared me so that I will be able to talk about this and again because I am a farmer that has been growing veg organically, I had a little bit of information on how to conserve water on things like mulching because with our agro ecology, we do a lot of mulching and we know that we have to preserve water through the use of mulching.

C1: did this information that you got from these books, did it by any chance help you in terms of preparing for the radio broadcast?

MP: Yes it did

C1: and mmm before the broadcast did you tell any of the people that you will be on air?

MP: yes I did. I told my fellow farmers and the people that I am with in the executive with the Middledrift Farmers Association and Nkonkobe Farmers Association because we've got a group on WhatsApp and I told them on that WhatsApp group.

C1: and what was the reaction after you told them?

MP: They told me they had listened and they were like interested and some asked if they could, how could they join or get access and I told them that there will be training that will be coming when that comes I will be able to inform them.

C1: did you discuss this with any of the other IBLN members?

MP: yes because we continually like IBLN has got a WhatsApp group where we share some of the information there and even Mr. Dubasi as the controller in our service centre, I also informed him.

C1: so you informed that people are interested in this

MP: ... yes in this way of saving water.

C1: and how about the programmes scripts that you are given beforehand, did you by any chance go through it with the other IBLN members or did you prepare it on your own? In terms of the way you would answer

MP: for now I prepared it on my own, the way I would answer, yeah, I just studied and in fact perused what was there and even adding to the knowledge that I have already.

C1: Did you use the aff website or anything that?

MP: not yet because the Amanzi for Food website because I had challenge with my phone with internet but I used both books that I was given by the network.

C1: which one? The blue one or the brown?

MP: the whitish with blue and the other black, yes ummm.

C1: coming to the programme itself was there anything that you learnt from being part of the panel in studio?

MP: yes sharing of information, because now if you are a member of a network they are things that you don't know or things that you were doing differently so because of you've got a network now, you see what other people do and maybe the challenges that you had then now will be solved by you using the methods that other people are using.

C1: was there any particular challenge that you had that was umm that you found a solution while being part of the radio broadcast?

MP: Yes in particular with the way I was mulching, for me I used to first plant the seedlings and then mulch later but then the fort cox group told us that it is easier to put in the mulch and then you put in the seedlings after that then I have found it to be a bit easier and handy that way.

C1: and this was on air when you got this, during the broadcast?

MP: eh it was during the broadcast and the training we had at Ms.obomvu

C1: the training which was informed by the broadcast itself

MP: yes

C1: and umm what about, was there anything that you didn't like about the way the broadcast itself was?

MP: No there wasn't anything instead I would have loved maybe more sessions of the broadcast because I am sure a lot of other people have not heard the programmes that we had, they would have loved to listen to more programmes

C1: So you think it would benefit them?

MP: yes

C1: why do you say so?

MP: because you know reaching the radio reaches a lot of people than you would maybe a classroom than you would a meeting level. With radio there is more reach to people.

C1: what about the listener feedback that we got during the broadcast itself, how did you find, was it encouraging?

MP: Yes it was encouraging, it showed that people they have got problems.. I even listened to another radio station which is not Fort Hare it was Umhlobo Wenene with agriculture that

continues in early morning on Fridays and so they were people that were talking about that they heard from fort hare and they were giving contributions to this radio station about water harvesting.

C1: So at this radio station you heard of people who listened to Fort FM

MP: yes as farmers yes

C1: on rainwater harvesting and they were contributing

MP: Yes they were contributing to this other

C1: about what they learnt....

MP: .... yes about what they learnt from this other station

C1: thats great when was this?

MP: eh hh I think it was twice back on a Friday morning with Umhlobo Wenene

C1: ah h h h h h

MP: there is an agricultural programme there that continues every Friday morning at half past 5

C1: aahhh ok, so two weeks back

MP: yes

C1: so after the expansion into radio programming as a learning network has there anything visible that has come out of this expansion?

MP: yes there has been, for instance the garden that I am using for the co-operative, eh I was motivated to dig a dam of my own which is a 2m by 2m by 2m because I got motivated when we went to fort cox to see their dam even though theirs is big because they have got bigger land so I was motivated to dig mine but I haven't collected water because the rains have not been enough for me to collect water into that dam but I have it now.

C1: I know that you are new to the learning network but what kind of roles and responsibilities do you have with the network.

MP: eh hh in the network I am the deputy chair person, yes, and I was asked to coordinate the training together with Ms. Mqalo and helping and assisting with facilitation when the network goes to the farmers in the village

C1: did any of the network members contact you after being on radio?

MP: eh h h h on what's app that's where we...

C1: and what the discussion about?

MP: it was about the programme itself, how it went and eh the people were commending the groups that were on radio saying that it was interesting discussion.

C1: OK THANK YOU VERY MUCH

APPENDIX E: An example of an observation record

<p>1 August, 2016.</p> <p>Field Notes</p> <p>&gt; Ngele pointed out that people were wont to express themselves orally, than in text so having radio &amp; various forms or platforms of new media embrace the idea of oral expression rather than text. She says this is evident in Africa.</p> <p>&gt; Again the idea of identity comes to mind and its highly evident even Mrs Peters joining of the IBLN she knew of it because of the identity they were promoting &amp; expanding into</p> <p>Don't forget</p> <p>* Remind Tich about asking if FORT COX sells Nguni Cattle.</p> <p>* Ask Journ' Students for core readings on Articulation theory by Stuart Hall and give them to Ingrid.</p>	<p>2nd August, 2016</p> <p>&gt; Remember that the IBLN came up with their own presenter for the show @ Fort FM-Get extract from WhatsApp group of Mrs Peter saying they have found someone to present the Agriculture radio show.</p> <p>Think Piece</p> <p>On Articulation over these past two days</p> <ul style="list-style-type: none"> <li>▶ Articulation of agricultural practices to or as Green skills.</li> <li>▶ Articulate Social articulations to working together i.e students, farmers, lecturers &amp; researchers.</li> <li>▶ Socio-ecological articulations. RWTHC ~ food sovereignty ~</li> <li>▶ Listen to Mrs Peter's video clip, listen carefully and try to link to radio as an articulation ground.</li> <li>* Articulation to RADIO &amp; different media platform for MS. radio, internet, &amp; Youtube.</li> </ul>
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## **APPENDIX F: An example of a consent letter given to participants**

### **INFORMED CONSENT FORM**

I..... (name and surname), understand that I am being asked to participate in a research study conducted by Chisala Lupele of Rhodes University in South Africa. This research study will follow a process that has been described to you in the interview you will or have taken part in. The study is looking at how a radio programme on Rain Water Harvesting and Conservation (RWH&C) was developed by an emerging community of practice, Imvothu Bubomi Learning Network (IBLN), and what learning arose through this expansion into radio as well as learning in the public sphere after the broadcast amongst rural smallholder farmers. The study is made of interviews, focus group interviews and discussions, and will allow farmers and the IBLN members to share their learning and social experiences.

I will be sharing back the information from the interview through a feedback session where you will check the interview transcription of our interview and validate that it correctly and accurately represents what we discussed and what you shared.

I am aware of the benefits of this study, such as providing an opportunity for smallholder rural farmers and the IBLN members to learn together with the researcher and to share experiences on learning with specific focus on rainwater harvesting and conservation. I am also aware that the expected outcomes of this study will benefit the research and the Water Research Commission Amanzi for Food project.

I also understand that my participation in this study is entirely voluntary, that I may withdraw from this study at any time should I wish to do so.

I authorise the researcher to use any professional photographs that include me in her research reports.

I am aware that my identity will be kept anonymous by the researcher as she has said it will be in light of the Research ethics procedures at Rhodes University.

The study has been explained to me. I have read and understood the consent form, all my questions have been answered and I agree to participate. I understand that the research process will continuously provide opportunities for research findings to be shared with the farming support community in Eastern Cape, Nkonkobe local municipality.

By agreeing to participate in the study, I am free to ask any questions about the study or about my participation in the research by Ms. C Lupele via email, mobile phone or office number which I have been given.

Signature of interviewee: .....

Date: .....

Place: .....

## APPENDIX G: Inductive analytical memo for radio programme transcripts

Category	Data Extract	Data Source
Network talk	Before some farmers where having so much water, that even in the network when we were sharing they were saying there is no need in my area because I have water but recently, they are the ones who were saying, whaoo we have a problem, water is no longer coming the way it used to.	RTP1-LE1 line 55-57
	In this network we share such information, experiences therefore everybody is coming has to think ahead from your land preparation techniques, capturing to irrigation.	RTP1-LE1 line 58-59
	This network has been helpful for me in that it has made me realise the importance of water and the importance of conserving.	RTP1-LF1 line 71-72
	The network has made me to know that water should be used in an appropriate way so that one may be able to irrigate his crops.	RTP1 –LF1 line 72-74
	This network since we were a group of different stakeholders like your farmers, your researchers, extension workers, colleges, Rhodes University, we had to develop demonstration plots.	RTP1-LE1 line 141-143
	Imvotho Bubomi is a network so we share information of experiences one to another, we do trainings, so find that we have had training last year for eight months and people were certified. We have other trainings that are happening between February and April, we have one that coming training people that are interested at one of the farmers who is participating, RTP2-LF2. We do the communication and if anyone is interested they give us their details and we work with them. You find that lot of farmers out there are interested in learning about IBLN.	RTP1-LE1 line 204-209
	We need to learn from books website and we need to learn from people in this area who are being successful and producing food. I think that's what makes a network work.	RTP1-LR1 line 266-268
	If you decide to plan making your food with water you capture, best thing you do is visit a friend you know is being successful and that's what they college and universities is trying to do, taking students to farmers and because they	RTP1-LR1 line 268-273

have been learning from the books and they get a much more complete picture and also look back in history and see how people lived in this area and how they successfully produced food. Most of all in the network is we learn from each other and I think the network is learning together.

Most of all in the network is we learn from each other and I think the network is learning together. RTP1-LR1 line 272-273

I am a backyard farmer and RTP2- LF2 is the farmer and through Amanzi for Food we meet and we talk about the problems. and then people are able to come up with their own solutions and this is the important thing we learn that they are different things that we learn but each person must work out a way that works for them best. RTP2- LR1 line 275-278

We talk about those fellows who use their backyard gardens to feed their own families. They are our main target group. We have focused to improve local communities starting from grass root level. RTP3-LS1 line 75-78

Our target is to make a community to own this practice and be its own. RTP3- LS1 Line 226-227

At community level is that if you just bring something to them and say here is it and it is free. People usually do not show any appreciation and it appears as a useless programme. RTP3- LS1 Line 228-230

In this particular project a lot of people have come together to form a network which is called IBNL and within this network a number of demonstration sites have been established and they are various different RWH structures that have been implemented. RTP4-LR2 Line 6-8

We were using in this IBLN is WRC RWH &C as a source of information. And also farmers are the practitioners were also bringing in their knowledge so knowledge was being brought from various angles to come together and negotiated. RTP4-LR2 Line 12-15

We arrange meeting for farmers in order for meet other members of Invoto Bubomi. As RTP4-LR2 has already mentioned, Invoto Bubomi is made up by different calibre of people. We have those who are lecturing, farmers, NEDA, Doney Research Institute. So we lead the farmer to meet such people RTP4-LT1, line 47-50

Network talk + Personal story	<p>We have as Amanzi for Food IBLN the trainings has changed the way we do the training in the academic life. Like myself I was offering a course on water soil conversation. Sometimes you get stuck with the only resources you were having at the institution but after having the network around. The way we do practicals has changed because it means what I can do I do and what I can't do means I go and fetch it somewhere else, it's like you take your group, they go and learn from this one a different technique and they come to another farm, they see a different technique. What I have learned about agriculture is we tend to think everything is book, book, book but when you start looking at it from outside and information from students, you find that everybody has an idea of how rainwater is being harvesting but to them it wasn't something being used in the farm. But after this network you find that students are now interacting so much because they know these things and they used to look at it now we have a different way of understanding such a thing.</p>	RTP1- LE1 Line 236-246
	<p>I learned more in this network as RTP1-LR1 and people think professors know all this stuff, we don't but we need to learn together to produce food and now I am producing food and I didn't know that. The farmers from KKH they are teaching me that and its very interesting.</p>	RTP1-LR1 Line 273-276
Network talk + roles and responsibilities	<p>I am a training co-ordinator, not a training officer in this learning network. As a co-ordinator, we identify a place where there is a need. But there are also cases whereby those who have some challenges come to us and ask for help. So, as a co-ordinator, I visit our different stakeholders who have in-depth knowledge about our practice. I arrange a meeting so that those who are farming can come for training.</p>	RTP3-LS1 line 53-57
Network talk + training	<p>This Wednesday [24<sup>th</sup> February] we are going to have a training at Gwali so it's basically the farmers from around the Gwali area and other areas in the Nkonkobe district. What will be happening there will be training on some of the RWH techniques just this coming Wednesday.</p>	RTP2-LE2 Line 315-318
	<p>We conducted a training whereby we taught them the ways of conserving and harvesting water. This goal was to prepare the local people and farmers to be more resilient in the next coming season.</p>	RTP3-LS1 Line 65-67

Currently, we do not have a scheduled training. Our target is to make a community to own this practice and be its own. So, each community should report the problem and state whether they desire to have this training. What usually happens at community level is that if you just bring something to them and say here is it and it is free. People usually do not show any appreciation and it appears as a useless programme. For example, in Gwali, we met with people from there and had a chat with them. When we asked them of their need, they complained that we are working from early hours of the day but there is no water. May you please come and help us. So, we responded to that need because these people have explained their problem unto us. As a training co-ordinator, we managed to organise a crew which is made up of people with different expertise. Then we discussed the ways in which we are going to solve the problem at hand. We did not end there, we checked other things. My point is this, a community is allowed to approach us and tell us their challenges. We as the team we will work from the risen need.

RTP3-LS line  
226-238

Our trainings are not just discussion or chatting trainings. Yes, we admit that there are times meant for teaching but we usually go out and tell the farmers to bring their ploughing materials such as hoe. We go out and show them in practical on what are they going to do after they have arrived in their garden and how is it going to help. In reality, we have had a great reception.

RTP3-LS1 Line  
252-256

Network talk +  
relationships

We have had training in Ms.obomvu whereby we were working with farmer from Gwali. This is where I met with RTP3-LR2, from Rhodes University. We managed to connect with others coming from Fort Hare, Professors and students.

RTP3-LS1  
Line 57-60

Network talk +  
practice+ personal  
story

Practice

Till your soil so that it will be a little bit soft. So, when the time for rain come, your water will come and stay on those tilled areas. This allows planting seed after the rain has come over those cultivated areas to follow. The reason for doing this is for the newly cultivated crops or seeds to use the water which was

RTP1-LF1 line  
99-103

stored on the tilled soils.

If you have access to a dam, or else you make for yourself a dam, for example your dam is one meter deep and five meter wide, and place a plastic on the floor of the dam or pit. Rain water will run into the pit and conserved inside there.

RTP1-LF1 Line  
105-107

This will also help you to avoid using water from the tap.

RTP1-LF1 Line  
108-109

Is before we even started with Imvotho Bubomi I used to see daMs. around the area on your road to king WilliaMs. town you see a lot of JoJo tanks around the area to collect rain water.

RTP1-LE1 Line  
138-140

Grey water harvesting, like he is saying most of the people in small gardens are using the rainwater harvesting techniques.

RTP1-LE1 Line  
172-173

If you use your used water to irrigate your vegetable there is no harm, no sickness that is coming yet you are still having your vegetables.

RTP1-LE1 Line  
181-182

You bath you take that water you put it together, if you are a family of five and you are putting together all of you are using five litre, five litre and all of you are five, how much are we having at a goal, we are having twenty-five litre and how times are you bathing, maybe you might be bathing three times, now you are having 75 litres to save.

RTP1-LE1,  
Line 186-190

I would like to advise our people to use 'grey water'. They should not think that it is stained or dirty water because of soap. They should even try to make use of pail pac of up to 20 litre size.

RTP1-LF1, line  
257-259

A pit that is dug in the field where you are going to be, its normally dug next to a cropping area so that you fetching your water from that pit and irrigating your cropped area. So, it is basically a pit, it can be of different sizes.

RTP2-LE2 line  
92-94

The programme is that you cannot be a farmer without water. You will find out that we waste water and I also find out that there are varieties of ways on how we can save water. As RTP2-LE2 has already said, we keep this water by using tanks. The pit or pond which he is talking about, we interrelate it with daMs..

RTP2-LF2 Line  
122-127

You can dig a dam in your field or garden so that you can be able to use your bucket to fetch water for irrigation purposes, using rain water

if you do not have a tank, use your water druMs. in order to keep this water.

RTP2-LF2,

Moreover, you can also dig up a pit for yourself. The other easiest thing to do this is that, in your garden you should try to dig up small ponds and when you are planting your cabbage, dig a deep let these pits be dip so that they water which shall be there will not get finished early. Secondly, around your plant, put the thing which we call mulching, using the grass or leaves from the trees or else chicken manure. Line 136-141

You can hear from RTP2-LR1 that he is talking about the grey water. When comparing the water from the tank and the one we use for bathing, which are the most clean? You just even testified that the tomato which you just tasted now is sweet. That tomato was irrigated by grey water, the water which was used in laundry and put in a drum. So, how much more now the water which comes from the tank will be more useful compared to the grey water? {Chisala this is a comparison} RTP2-LF2 Line 153-158

We've implemented so far are basically the farm ponds infiltration pits, trench beds, tide ridges, and also we do a lot of mulching. RTP2-LE2 line 206-207

With a farm pond what you basically do is to dig like in our case we used a till bin to dig such a pond because it's quite a job for human labour to be able to dig in such a time so what you basically need to do is position that pond at a strategic position. Strategic in the sense that when water runs off it runs off along certain channels it does not run off anywhere. You much position your pond in such way that you are close enough or you are downstream those channels so that yours is just to divert your water it goes into the pond and if it's strategically positioned that should be a big job of having to diverting the water. RTP2-LE2 LINE 211-217

With the infiltration pits, what you simply do is to dig holes of about 250 mm in diameter, 150 mm deep that capture water. RTP2-LE2 line 217-218

Trench beds, you also dig a trench around a cropped area of about 1 sq. metre or 2 sq. metre where the water runs into and it infiltrates with tide ridges you are looking at basically barricading the furrows on your normal ridges which you would grow your potatoes so you would grow in the furrows of those ridges, so you would barricade smaller ridges that reduces the run off speed RTP2-LE2 Line 219-224



allows also the water to infiltrate and with mulching and I did mention that we also did a lot of mulching.

You collect material such as grass, tree leaves but there is also plastic mulching. RTP2-LE2 Line  
But what I want to focus on grass and tree leaves. What the mulch does is it 224-228  
reduces the kinetic energy of the rain drops as they fall on the ground and hence  
the water will have less energy to run off and hence it takes time to infiltrate  
and the mulch is acting as a physical barrier to water flow so that in itself  
enhances these infiltration process.

You cover the soil which you are using for cropping. You cover the soil using RTP3-LS1 Line  
dry grass, dry leaves, and other organic material. The point here is that when 95-99  
you follow this farming practice, you do not need to irrigate frequently. This is  
a water saving strategy because mulching allows the soil to keep the water for a  
long time. The interesting part about this practice is that, weed is controllable  
diversion furrows. Remember, we said we are using the available material in RTP3-LS1,  
order to harvest water. We make the ways not to use the municipality water but Line 104-109  
the one from rain. So, when it is raining, one of the things we advise farmers to  
do is that they must go out during that rain and go to your garden to see whether  
there is run-off. Run-off is not rare in gardens. Check the direction to which this  
water take.

You will take your hoe and make furrows. Your furrows will direct the water to RTP3-LS1,  
where you want them to be. This is to avoid the waste of water because there is Line 109-111  
a widespread of water scarcity. This is called diversion furrows.

In trench fertility, you take humus, cover it with grass or leaves and mix it with RTP3-LS2,  
water. On top, mix it with soil, grass and mix it water once more. If you did Line 115-118  
that, this can take a period of up to five years long. When you have to irrigate,  
you will need not too much water.

Diversion furrows. If your tank has a leaking part, you have to open a trench. RTP3-LS2,  
Let's say in your garden you have seed plots. You will have to open furrows LINE 120-123  
which are going to hold the running water. This will permit your crops to suck  
this water and level of irrigation will be decreased.

Include *amadanyana*, tide ridges farm daMs., *gelesha* which is really a RTP4-LR2,

	traditional Xhosa method of ahh conserving soil and water and simple things like mulching making sure that the ground is not exposed to the sun so that when it is very hot at least you can still have moisture returned in the soil	LINE 9-12
	we work with Nkonkobe Farmers Association and UFH the Institute of Agriculture Rural Development Research where we try to resuscitate or do dam scooping for those daMs. that have faced siltation to try and harvest water.	RTP4-LT2 LINE 89-91
Practice and drought	Although the drought can even be beyond the potential of daMs. at times, most of the times we rely on them (daMs.) when we want to irrigate our crops if you harvest water as much as you can, and store them in small daMs., you will be in a better position than the one who has not.	RTP1-LF1 LINE 78-79 RTP1-LF1, LINE 76-77
Practice + Chemical (greenhouse gasses)	Gases that are coming from the rain. There are ways we as farmers use in order to prevent such cases. For example, in your garden, you will never only cultivate spinach. There are herbs, aloes and a certain tree known as speck-boom which you plant. The speck-boom tree act as a ground cover or shrubs, and help you in cleaning your environment so that those gases will be eliminated.	RTP2-LF2, LINE 309-313
Practice + Soil erosion	An example of mulching, you cover the soil, so should there be any flooding, your soil is covered and there is less of erosion. Water conservation is important, especially for farming and cooking. The process of this practice is followed by firstly preparing the soil in such a way that when the rain comes, your soil will be able to preserve the rain water we refer to this kind of surfaces because they do not have other, what I can call, side effects such as soil erosion because you don't to be harvesting your rainwater and you then you leave your soil eroded and that also will have an impact on the volume of your storage, if you allow soil erosion to happen it means by the end of the day your storage is sedimented and you have lesser volume in which to store water. The little water that falls, or sometimes there is a lot of water that falls for a short time that is important for the farmer to capture this important rain that falls. I think RTP3-LS1 explained that if you don't capture it, you are going to watch it go to the oceans and rivers and as it goes it goes with the farmers' soil	RTP1-LE1, LINE 64-65 RTP1-LF1, LINE 97-99 RTP2-LE2, LINE 73-77 RTP3-LR2, LINE 267-271

	also.	
Practice + Evaporation	It is very hot and high level of heat increases the level of evaporation. To combat the high levels of evaporation, they should try to do the mulching with grass. This is to help the crops to keep water for not being evaporated easily Mulching will minimise water evapo-transpiration. Minimised evapo-transpiration will also reduce the chances of plant wilting. These are the ways of water harvesting.	RTP1-LF1, LINE 259-261  RTP2-LF2, LINE 141-143
	Infiltration pits are the pits made specifically for sucking or drawing water when it is raining. You open these pits using a hoe. When it is raining, water gets into those pits. You are also able to plant your seeds/seedlings to those pits or else, next to the pits, or in both places, inside and outside the pit. Then you cover the place with water to counteract the evaporation.	RTP3-LS2, 124-128
Indigenous knowledge	The tradition is there but the scientific point of view or application with deeper understanding might have been the lack. People of this area have been living there for hundreds of years. People have forgotten many of the things, the things of galesha of water into the soil and to collect water into the small dam, to get the ponds going and allow water to produce the food. So, I think the combination of stories. The stories of experts the scientist, the story of ancestors from our grandparents. Rainwater harvesting to us, traditionally, there should be more rain than what I harvested but if we look at from a material point of view of how people harvested, the more you harvest each time works. Do you know the blue druMs. we usually have on our homes? When it has rained, people used to harvest water using druMs. and put them in order. This is an ancient practice but it appears as if it is new because it has been given a new name, Amanzi Bubomi. Yes, Amanzi Bubomi (Water is life indeed). Invoto Bubomi, has come to revive an ancient practice which our people have been following.	RTP1-LE1, LINE 140-141 RTP1-LR1, LINE 117-121 RTP1-LE1, LINE 170-172 RTP2-LF2, Line 131-134 RTP4-LT1, LINE 23-24
Indigenous knowledge +	We learn from the past and can we learn from the best from WRC as we learn through research.	RTP1-LR1, LINE 122

resources

Indigenous  
knowledge +  
personal story

I found out that this practice is not new to me because I have been following it because I use indigenous knowledge in my farming practice. Indigenous practice follows/uses the natural things. As we know that the water from taps is being cleaned by chemicals. We do not want to use them in our plants when we are ploughing.

RTP2-LF2,  
LINE 114-117

In the office as extension officers, our work is to take the new techniques (innovations/new technology) to the people. This means that there is a link in this initiative because we take the information from the Water Research Council through the University of Fort Hare and through the Amanzi for Food. We take this information to the farmers. Fortunately, farmers have received this information with gladness. The reason being that this initiative is reminding them about their indigenous practices. It used to happen that when the reason has come, people would be opening trenches that led water to their backyard gardens.

RTP4-LT1,  
Line 24-30

Personal story

In my house my wife liked to grow flowers in the garden, this year we are growing food in the garden and my wife is much more excited and in Makana they said they not use the water in your garden or washing your car but Amatole irrigation are exploring using drip irrigation which I learned from Fort Cox and now I have small drip irrigation in own garden and I have learned from Mrs. Peter on crops and how to deal with it. Now I might be an academic professor in a visiting but I am like anybody else, we all need water for food. So when I came back from the last meeting I got a drum and connected the bath and shower into the drum, now I use water from the drum into the drip irrigation and now half of the drum I use drip irrigation and the other half I water by hand. You wanna see my garden growing its crazy and I am not a farmer but I have learnt from the farmers to grow my own vegetables and I have learnt from Mrs. Peter who is just so creative with ideas. I think if we can in Amanzi for food can encourage people to learn from each other, to challenge us, what can we do, if we can use sMs. visit the website then we've got an exciting programme that is very practical because we've got the farmers in

RTP1-LR1,  
LINE 212-224

urban areas who can learn to produce food.

Last year when the group of Amanzi for Food visited Fort Hare FM, I received a phone call from one of the farmers from Xesi (Middledrift), who is no more (dead), Mr. Grawana. He told me that at 18H00 I should listen Fort Hare FM. Mr. Dubasi will be speaking, who is a controller at the Agricultural office where we work together with farmers and Extension Workers. I listened to the radio show as I was advised to and I heard that they were talking about Amanzi for Food, Invoto Bubomi Learning Network. After that I wanted to know more about this thing and they explained it to me. Later on they invited people to go to a show which was held at Cwaru on June last year. I found out that this practice is not new to me because I have been following it because I use indigenous knowledge in my farming practice. Indigenous practice follows the natural things. As we know that the water from taps is being cleaned by chemicals. We do not want to use them in our plants when we are ploughing. We prefer rain water. So, I found that I have more interest on this programme because it involves exactly what I have been doing. Thus, I joined them and I was called to attend a meeting which was held at Fort Cox College. When I joined the meeting, I was given a duty there and appointed as a deputy chairperson of Invoto Bubomi Learning Network. From there, the rest is history because now I am fully in Invoto Bubomi Learning Network. The importance of the programme is that you cannot be a farmer without water. You will find out that we waste water and I also find out that there are varieties of ways on how we can save water. As RTP2-LE2 has already said, we keep this water by using tanks. The pit or pond which he is talking about, we interrelate it with daMs.. You can dig a dam in your field or garden so that you can be able to use your bucket to fetch water for irrigation purposes, using rain water

RTP2-LF2,  
LINE 107-127

When I was a little boy of five years old when it rains, I used to go out and play in the rain. Now I am 65 I still go out and play in the rain but you need to go out in the rain and see where the water is going. You see that water is not going into my garden I need to drive the water into my garden and that's what I did. I went out when it was raining and saw the water not going into the garden. It

RTP2-LR2,  
LINE 182-191

saves me a lot of work. So I don't have to carry a bucket and then have to go and water the garden already the rain is directed into my garden then what I had to do is prepare the soil, I had to do compost and mulching like RTP2-LF2 was talking about. It was amazing to me if I did a small piece it wasn't hard work if I did a sq. metre another sq. metre and very soon I had harvested the water. The water was in the soil and what I learned from Fort Cox is that they can calculate how much water is in the soil.

We've implemented so far are basically the farm ponds infiltration pits, trench beds, tide ridges, and also we do a lot of mulching. So if you come to Fort Cox like I did mention earlier, we have got ponds that's about 120 cubic metres that's about 120 000 litres of water so if you are doing say for instance one hectare of water, should last you come thing like three months but it also depends on which type of crop you are dealing with but that's just a rough estimation. So with a farm pond what you basically do is to dig like in our case we used a till bin to dig such a pond because it's quite a job for human labour to be able to dig in such a time so what you basically need to do is position that pond at a strategic position. Strategic in the sense that when water runs off it runs off along certain channels it does not run off anywhere. You must position your pond in such way that you are close enough or you are downstream those channels so that yours is just to divert your water it goes into the pond and if it's strategically positioned that should be a big job of having to diverting the water. With the infiltration pits, what you simply do is to dig holes of about 250 mm in diameter, 150 mm deep that capture water. With trench beds, you also dig a trench around a cropped area of about 1 sq. metre or 2 sq. metre where the water runs into and it infiltrates with tide ridges you are looking at basically barricading the furrows on your normal ridges which you would grow your potatoes so you would grow in the furrows of those ridges, so you would barricade smaller ridges that reduces the run off speed allows also the water to infiltrate and with mulching and I did mention that we also did a lot of mulching, what you basically do is that you collect material such as grass, tree leaves but there is also plastic mulching. But what I want to focus on grass and

RTP2-LE2,  
LINE 206-234

tree leaves. What the mulch does is it reduces the kinetic energy of the rain drops as they fall on the ground and hence the water will have less energy to run off and hence it takes time to infiltrate and the mulch is acting as a physical barrier to water flow so that in itself enhances these infiltration process. So, as you might have observed the focus of run water harvesting in an IFT is to allow infiltration so infiltration, infiltration, infiltration. That's the most important thing you must focus on. So we allow this infiltration to happen so that the water does not go to areas that are not targeted. Our targeted area is the crop area, that's where we want our water to be so it must infiltrate deep so that the plant roots can go down and fetch the water unlike when it has run off, they can't go to the river and fetch the water from there.

I am a backyard farmer and RTP2-LF2 is the farmer and through Amanzi for Food we meet and we talk about the problems. and then people are able to come up with their own solutions and this is the important thing we learn that they are different things that we learn but each person must work out a way that works for them best. With the drought, I have moved to grey water because the municipality said no watering in area that I live in Makana so I didn't want my vegetables die so I change to grey water and I am still allowed to water every second day and my vegetables are thriving because they are getting water every second day. I think that the more the people think it's the creativity the way that you are able to work with the big ideas of Fort Cox and the practical ideas of RTP2-LF2. We all have to be our own farmers growing our own food

RTP2-LR1,  
LINE 212-224

Fort Cox College is college that trains farmers basically. Our students can end up being extension workers, farm managers etc. but you would find the principles that they need to learn are basically the same. As part of our curriculum we have already started infusing concepts of this into the curriculum. So if you come to Fort Cox you find course like soil and water conservation and its courses that have already been existing we are going to be teaching more of the rain water harvesting concepts.

RTP2-LE2,  
LINE 288-293

In Gwali, we met with people from there and had a chat with them a. When we

RTP3-LS1,

asked them of their need, they complained that we are working from early hours of the day but there is no water. May you please come and help us. So, we responded to that need because these people have explained their problem unto us. As a training co-ordinator, we managed to organise a crew which is made up of people with different expertise. Then we discussed the ways in which we are going to solve the problem at hand. We did not end there, we checked other things. My point is this, a community is allowed to approach us and tell us their challenges. We as the team we will work from the risen need. At first it was not clear, but later they rejoiced when they see it being implemented. They promised that they will go back to their houses and organisations. Each organisation has about 15 members. Out of those members, four members came and represent their group. Those members will go back with new knowledge and report to the members who could not be able to attend the training. We were also there for them as the facilitators from ARDRI of the University of Fort Hare. This was to make sure that the information is shared among the farmers. We help in doing and speaking.

LINE 230-238

RTP3-LS2,  
LINE 244-250

Most farmers often come to my office, especially when they have heard about the programme in question. This is because that Amanzi for Food programme has been in action for a long time in the Fort Hare FM. There are many farmers who are coming to my office for help. We have manuals which use them in order refer them to. We are also able to refer them to the institutions such as University of Fort Hare and also to other farmers, i.e. our demonstration sites such as Lloyd, Keiskammahoek, and the site we are using at the University of Fort Hare, Fort Cox, where they go so that they will be able to observe. We arrange meeting for farmers in order for meet other members of Invoto Bubomi. As Mr. Pesanayi has already mentioned, Invoto Bubomi is made up by different calibre of people. We have those who are lecturing, farmers, NEDA, Doney Research Institute. So, we lead the farmer to meet such people.

RTP4-LT1,  
LINE 40-50

NEDA as an entity was tasked with driving local economic development. So, when we drive local economic development we need to have people who had

RTP4-LT2,  
LINE 65-72



food so AfF come in handy because when you have healthy nation they can also work to progress the local economy of Nkonkobe. So, we focus on economic and rural development because when you look at Nkonkobe it's a rural municipality so we must come up with ways that work for a rural situation. So the relevance of AfF, when you look at the IDP of the municipality, the integrated development plan, number one key pillar in terms of driving local economy is agriculture.

We work with Nkonkobe Farmers Association and UFH the Institute of Agriculture Rural Development Research where we try to resuscitate or do dam scooping for those daMs. that have faced siltation to try and harvest water. We had such a project with Nkonko location that's basically revived a dam that had faced siltation.

RTP4-LT2,  
LINE 89-92

Lloyd village is a very dry place. They were in a serious situation in the past season, as we know that drought was all over South Africa. Hence when they heard about the program of Amanzi for Food, they became the first people to hold it with both hands and asked that the demonstration site should be in their place. This has really helped them because the situation is no longer the same as before the site was pitched. Now they can be able to irrigate their backyard crops. This is where the usefulness of water harvesting is manifested, as Amanzi for Food gives discourse. It all means that people from Lloyd have been faced with a challenge of being vulnerable during the drought seasons. Nonetheless the initiatives and techniques by Amanzi for Food have brought a big difference.

RTP4-LT1,  
LINE 121-129

Drought (water scarcity)

So, in a way for us to have rain we know it is not depending on us but the little rain we would get if it is well captured well stored it therefore means that we will not have most of the problems in farming even when there is scarcity the time most farmer began their farming there was an abundance of water but the season is no longer the same because now we are all facing the increasing drought everywhere.

RTP1-LE1,  
LINE 52-54

RTP1-LF1,  
LINE 74-76

If you harvest water as much as you can, and store them in small daMs.

RTP1-LF1,  
LINE 76-77

they are also involved. This is because they also face the same situation of water scarcity. They try to supply their cattle with water when this water is available. For example, in the past raining days, people have harvested water for their livestock.	RTP1-LF1, LINE 161-163
This drought has severely affected the farmers. There is no water at all and even if it happens that rain comes, the water will quickly be swallowed by ground. To tell you the truth, this is very hard.	RTP1-LF1, LINE 82-84
I am glad that we are talking about rainwater harvesting in a year that has drought and I am sure that will give us more audience.	RTP2-LE2, LINE 53-55
They have been affected is that they are ploughing the grain under the dry land agriculture. Dry land is non-irrigational. So, the maize which they planted during the last season wilted because there was no rain.	RTP2-LF2, LINE 242-244
People were not practicing the culture of water harvesting, they have been greatly affected because they were using water from the taps.	RTP2-LF2, LINE 245-246
It happened that when it was no longer raining, farmers were in greatest catastrophe.	RTP2-LF2, LINE 246-247
Farmers are advised to keep ready by taking these advises in preparation for the coming season because none of us know what will happen in the next coming summer.	RTP2-LF2, LINE 252-254
This past season 2015/2016 if you talk to any farmer in the Eastern Cape they will tell they had a lot of challenges in the Eastern Cape because of the drought. They will also tell you the drought events are increasing intensity and in season, so that, means there is less water available for farming for crops for vegetables and for livestock. So this is a very good reason why farmers should protect themselves because the climate is changing and there is a lot of variability in season. So rainwater harvesting is a way of beating drought	RTP3-LR2, LINE 261-266
We are in a time where by water is a very scarce commodity, especially in Nkonkobe Municipality of the Eastern Cape Province of South Africa. This forces us that when the rain has come we should harvest water as much as we can. The harvested water will make water available for the plants even during	RTP4-LT1, LINE 31-34

the drought period.

Demonstration site  
with personal story  
AND Practice

Lloyd village has demonstration plots and Keiskammahoek as one, in seven stars, they have developed in field rainwater harvesting techniques and it is working. The thing is the farmer himself was farming in an ordinary way and after see the impact of the technique, the production was high the water use was low he was saying I think I would rather go for this one full time. So, the effect is there we seeing the practice there is a potential for a help because what is needed here is one problem for water scarcity and together we have a solution that we can implement.

RTP1-LE1,  
LINE 143-149

**In order to remove stigma on grey water:** we have demonstration plots people choose whatever technique is suitable for them because there are a lot of things to consider when choosing a practice, let's say you choose grey water harvesting, that particular group will use grey water harvesting. It means the best thing for people to understand is to go and visit hence we talking about information days, networking, our networking is not only about the classroom where we are training, even outside IB you hear me calling Mr. Mcata maybe I would want to bring my students to learn this, it means there is a venture for my students to learn that which is not in Fort Cox, so any other person who would want to know this things, it means you connect with people and sites who are already there and you go and view because when you see it, it better explains it. If you come to Fort Cox we have got a farm pond which about 120 cubic metres in size. If you go to Lloyd we've dug pits that are relatively smaller probably 10 cubic cm., so it can be any size but it's a pit that you dig out and it collects water and you irrigate from there.

RTP1-LE1,  
Line 193-202

Demonstration sites is examples of different ways of capturing and storing water and using it to convey to the crops in the field. So there are various structures like small farm daMs. for example if you go to Fort Cox College, you find a farm dam that is 3x3 and 1.5m deep and if you go to Lloyd village here in Alice, you find a cooperative there which is running a garden. That garden has a smaller farm daMs. *amadanyana* which are much smaller than the ones found at Fort Cox College and they got five of them and connected to them are

RTP2-LE2,  
LINE 94-97

RTP3-LR2,  
LINE 32-46

diversion furrows which capture water that is flowing, what I can call run off and they channel it to these structures. Which means water is available in the garden for farmers to use. It means they can fetch the water from those structures and bring it to their crops and also the water can seep underground and water the crops underground, which is the idea. If you got to Keiskammahoek which is the next municipality Amathlali you find another farmer who has implemented a different water harvesting system there and she is using infiltration pits. But we are also encouraging the implementation of traditional indigenous methods like Galesha which is well known to the local people in this area.

We are also able to refer them to the institutions such as University of Fort Hare and also to other farmers, i.e. our demonstration sites such as Lloyd, Keiskammahoek, and the site we are using at the University of Fort Hare, Fort Cox, where they go so that they will be able to observe.

RTP4-LT1,  
LINE 44-47

## RESOURCES

Rainwater harvesting tackles two things at a goal. Like the information that we get from WRC you find that its water conservation techniques but you find that the same techniques are conserving soil.

RTP1-LE1,  
LINE 62-64

WRC materials they give in depth of grey water harvesting where we talking about your water you use maybe for washing your dishes, your body, everything.

RTP1-LE1,  
LINE 173-175

The two books that we are promoting, one is entitled *Water Harvesting and Conservation* which is volume two part one has a technical manual and farmer handouts for farmers that are in this particular text. The next is entitled *Agriculture Water use in Homestead Gardening Systems.*, so these are the main texts that we are promoting. In order for a farmer to be able to navigate in these books, we have developed a simple navigation tool, which is a summary of all the practices. What the navigation tool does is summarise what each of these practices are, it could be infiltration pits that Asanda was talking about or it could be diversion furrows. So what the navigation tool does is it takes a picture which presents that practice. Then it explains very briefly what this practice is about then it also talks about the scale on what level the practice can be

RTP3-LR2,  
LINE 134-144

implemented either at homestead level or at garden level or at a much larger field level.

The navigation tool is a brief description of the method and due to a page number in a book where the practice is explained in more detail. If one does not have the books they can find on the website which has got the books in electronic form and that website is [www.Amanziforfood.co.za](http://www.Amanziforfood.co.za) so one can access it through the internet through a computer and we making it accessible through a phone.

There are many farmers who are coming to my office for help. We have manuals which use them in order refer them to.

So, the relevance of AfF, when you look at the IDP of the municipality, the integrated development plan, number one key pillar in terms of driving local economy is agriculture.

We get farmers that want to be assisted with how can they deal with situations of drought and how can they do farming with these crises of where we don't have water. What we do is we have the materials that we got from this IBLN which came from WRC and from Rhodes University. These materials are in forms of manuals, pamphlets, charts and posters. So, we share that with the farmers those who just walk in but also over and above that, we try to see if we can visit the farmer and assess that particular farmer's situation because it's not one size fits all each farmer has its own situation so we really need to make that visit so we can give a proper advice according to the situation of that particular farmer.

#### MEMBERSHIP

Last year when the group of Amanzi for Food visited Fort Hare FM, I received a phone call from one of the farmers from Xesi (Middledrift), who is no more (dead), Mr. Grawana. He told me that at 18H00 I should listen Fort Hare FM. Mr. Dubasi will be speaking, who is a controller at the Agricultural office where we work together with farmers and Extension Workers. I listened to the radio show as I was advised to and I heard that they were talking about Amanzi for Food, Invoto Bubomi Learning Network. After that I wanted to know more about this thing and they explained it to me. Later on they invited people to go

to a show which was held at Cwaru on June last year. I found out that this practice is not new to me because I have been following it because I use indigenous knowledge in my farming practice. Indigenous practice follows the natural things. As we know that the water from taps is being cleaned by chemicals. We do not want to use them in our plants when we are ploughing. We prefer rain water. So, I found that I have more interest on this programme because it involves exactly what I have been doing. Thus, I joined them and I was called to attend a meeting which was held at Fort Cox College.

CHEMICALS IN  
TAP WATER

Rainwater will run into the pit and conserved inside there. This water will be useful for your crops as they are still growing. Moreover, this will also help you to avoid using water from the tap. RTP1-LF1,  
LINE 107-109

Water from the tap is full of chemicals. When you are using rain water, plants' growth will never be stunted. Plant growth from rain water irrigated plants is accelerated. RTP1-LF1,  
LINE 111-112

I use indigenous knowledge in my farming practice. Indigenous practice follows the natural things. As we know that the water from taps is being cleaned by chemicals. We do not want to use them in our plants when we are ploughing. We prefer rain water. RTP2-LF2,  
LINE 115-118

Water from the tank is the best more than the one you think that are right. Water from the tap is full of cleaning chemicals. On the other hand, water from the tank is just natural, coming from nature. RTP2-LF2,  
LINE 151-153

ROLES AND  
RESPONSIBILITY

When I joined the meeting, I was given a duty there and appointed as a deputy chair-person of Invoto Bubomi Learning Network. RTP2-LF2,  
LINE 120-121

My role in the programme is to make sure that all the involved stakeholders have a clear understanding during the training program. I interpret for them English to isiXhosa so that they may grasp everything which is said during the training. I have also been an acting secretary for them so that they will be able to give a written report to the members who have not been able to attend the training. RTP3-LS1,  
LINE 84-88

## APPENDIX H: Example of coding the data

of these practices as we get them from the water research commission. Can you please tell us about your role in this network?

Sizwe: I am a training co-ordinator, not a training officer in this learning network. As a co-ordinator, we identify a place where there is a need. But there are also cases whereby those who have some challenges come to us and ask for help. So, as a co-ordinator, I visit our different stakeholders who have in-depth knowledge about our practice. I arrange a meeting so that those who are farming can come for training. For example in this time, we have had training in Msobomvu whereby we were working with farmer from Gwali. This is where I met with Mr Personai, from Rhodes University. We managed to connect with others coming from Fort Hare, Professors and students. Moreover, we connected with others from Fort Cox College. This is to say, we have connected with different calibre of people from this learning network. We made them to meet with farmers because there are also local people who are saying, as much as we have many challenges; these people have some solutions for these problems. So we met as a crew to help the community which has reported to have problems and wishes to be taught about this practise. For that reason we conducted a training whereby we taught them the ways of conserving and harvesting water. This goal was to prepare the local people and farmers to be more resilient in the next coming season. *network + training*

Radio DJ: O, from these training programmes, let us say, may be it is only farmers who are involved. Did you find any other person beside farmers who is interested in this practise, for example someone with a backyard garden?

Sizwe: My brother, the definition of the word, farmer, to me, refers to someone who has a garden and uses it for agricultural purpose. For someone to be involved into farming practices does not necessary need to have a big land, as we used to see some old white men do. So, we talk about those fellows who use their backyard gardens to feed their own families. They are our main target group. We have focused to improve local communities starting from grass root level. *network*

Radio DJ: Asanda, you are a part of this learning programme. What is your role in this training?

Asanda: First of all, we are working with farmers as the University of Fort Hare. We visit them every week. My role in the programme is to make sure that all the involved stakeholders have a clear understanding during the training program. I interpret for them English to isiXhosa so that they may grasp everything which is said during the training. I have also been an acting secretary for them so that they will be able to give a written report to the members who have not been able to attend the training. *roles & responsibility*

Radio DJ: O Ok. To the two of you, from these water research commission trainings, which training have been done in people from Gwali?

Sizwe: They have been so many, sir. The first one, I would say it is easy. We can even do it ourselves. In English it is called mulching. If I were to explain it in isiXhosa, this is whereby you cover the soil which you are using for cropping. You cover the soil using dry grass, dry leaves, and other organic material. The point here is that when you follow this farming practice, you do not need to irrigate frequently. This is a water saving strategy because mulching allows the soil to keep the water for a long time. The interesting part about this practice is that, weed is controllable. *practice* Moreover, my brother, from the studies, we have found