

**Learning commercial beekeeping: Two cases of social learning in southern African community natural resources management contexts**

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## **Abstract**

Community Based Natural Resources Management (CBNRM) in southern Africa has gained an important role in alleviating poverty and conserving natural resources. The attention and funding CBNRM is receiving from governments, non-governmental organisations and donors is seen as one way to strengthen civil society's involvement in decision-making and participating in activities that contribute to a sustainable livelihood, whilst at the same time learning in their social contexts to adapt and care for the ever changing environment characterised by constraints, challenges, contradictions, new opportunities for learning and change.

This study focuses on social learning in commercialisation of natural resource products in two case studies of commercial beekeeping in rural southern African contexts. In this study social learning entails a process of qualitative change taking place in a social context for the purpose of personal and social adaptation. This perspective is useful in this study as learning in the two cases, Hluleka in South Africa and Buhera in Zimbabwe involved the transition from traditional honey harvesting practices and subsistence beekeeping to commercial beekeeping.

This study is informed by two related theoretical perspectives namely Cultural Historical Activity Theory (CHAT) and Social Learning Theory. CHAT was used as conceptual and methodological framework to inform the first phase of data gathering and analysis processes; as well as second phase data gathering. In the first phase, I gathered data through semi-structured interviews, document reviews and observations to identify problems, challenges and critical incidents in learning commercial beekeeping, technically known as tensions and contradictions within the CHAT framework. These tensions and contradictions, surfaced through analysis of first phase data were used as „mirror data' in Intervention Workshops, within CHAT's process of Developmental Work Research, which supports social learning in response to tensions and contradictions in workplace activity. Use of mirror data provided a basis for dialogue and the modelling of new solutions to identified contradictions. To interpret the social learning processes resulting from these interactions, I drew on Wals' (2007) analytical lenses, through which I was able to monitor social learning processes that emerged from the Intervention Workshop dialogues while beekeepers modelled new solutions to contradictions in learning commercial beekeeping.

The findings of the study revealed that social learning in commercial beekeeping is internally and externally influenced by socio-cultural, political and economic complexities. Social learning in Intervention Workshops was supported by different knowledge bases of participants, in this study these are beekeepers, extension officers, trainers and development facilitators. Such knowledge bases were the source of information for learning and constructing model solutions. The study also revealed that learning in CBNRM workplaces can be observed across the development processes, and CHAT as a methodological tool and Wals' (2007) analytical tool are complementary and can be used in researching social learning in other CBNRM workplaces.

The study contributes in-depth insight into participatory research and learning processes, especially within the context of CBRM in southern Africa. It gives some empirical and explanatory insight into how change-oriented social learning can emerge and be expanded in Education for Sustainable Development. It also provides learning and extension tools to work with contradictions that arise from socio-cultural and historical dimensions of learning commercialisation of natural resources in southern African context. Its other key contribution is that it provides further insight into the mobilisation of human agency and reflexivity in change oriented social learning processes of commercialisation of sustainable natural resources products and poverty alleviation processes that are critical for responding to socio-ecological issues and risks and development challenges in southern Africa.

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## **Dedication**

I dedicate this study to all CBNRM practitioners who are learning from others with divergent ideas to theirs.

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## **Acronyms**

AGRITEX	Agriculture Technical and Extension Services
ARC	Agricultural Research Council
AREX	Agriculture Extension Services
BEE	Black Economic Empowerment
CAMPFIRE	Communal Areas Programme For Indigenous Resources
CBNRM	Community Based Natural Resources Management
CCD	Colony Collapse Disorder
CHAT	Cultural Historical Activity Theory
CWM	Community Wildlife Management
DA	District Administrator
DEAT	Department of Environmental Affairs and Tourism
DPW	Department of Public Works
DWAF	Department of Water Affairs and Forestry
EC	European Commission
ECHOPA	Eastern Cape Honey Producers Association
EEASA	Environmental Education Association for Southern Africa
EMA	Environmental Management Agency
EPWP	Expanded Public Works Programme
ESAP	Economic Structural Adjustment Programme
ESD	Education for Sustainable Development
FAO	Food and Agricultural Organisation
GEAR	Growth Employment And Redistribution Policy
GoSA	Government of South Africa
GoT	Government of Transkei
MDC	Movement for Democratic Change

MOA	Ministry of Agriculture
NFP	Natural Food Processors
NGO	Non Governmental Organisation
NORAD	Norwegian Agency for Development Cooperation
PFM	Participatory Forestry Management
PNRM	Participatory Natural Resources Management
RBZ	Reserve Bank of Zimbabwe
RDC	Rural District Council
RUEESU	Rhodes University Environmental Education Sustainability Unit
SAFIRE	Southern Alliance For Indigenous Resources
SAQA	South African Qualifications Authority
SME	Small to Medium Enterprise
SMME	Small to Medium Micro-Enterprise
SNV	Netherlands Development Organisation
UN	United Nations
UNDESD	United Nations Decade for Sustainable Development
UNEP	United Nations Environmental Programme
USAID	United States Agency For International Development
USD	United States Dollar
ZANU PF	Zimbabwe African National Union Patriotic Front
ZFDT	Zimbabwe Farmers Development Trust
ZPD	Zone of Proximal Development

# **Chapter 1: Introducing the study**

## **1.1 Introduction**

This chapter seeks to provide a brief orientation and introduction to the study. It outlines the purpose, and the goals of this research. It also discusses the context within which this research was conducted. The context includes all the relevant background information regarding the state of affairs in Hluleka and Buhera and how it relates to the commercialisation of natural resources products. This is also discussed in more detail in Chapters 4 and 5. The chapter then moves on to introduce the reader to the general structure and organisation of the research report, giving a brief outline of the focus of the seven chapters that make up this study. In this chapter, some key concepts that informed the research process are introduced and clarified. In essence the chapter serves to help the reader get a good sense of the overall research.

## **1.2 How the study locates itself**

This study is part of the broader South African Qualifications Authority (SAQA) and Rhodes University Environmental Education and Sustainability Unit (RUEESU) research programme on change oriented workplace learning and sustainable development practices. As a researcher I used a collective case study approach (Stake, 2000) to investigate the rural community workplace phenomenon of learning to commercialise a natural resource product. A methodology I discuss in more detail in Chapter 3.

Before undertaking this study, I worked as a development facilitator and environmental educator for over five years in the Southern Alliance For Indigenous Resources (SAFIRE), an international non-governmental organisation promoting commercialisation of non timber forest products in Zambia and Zimbabwe. I had always grappled with how enterprise groups in participating areas could effectively master and practise the phenomenon of commercialising non timber forest products as an income generating/livelihood improvement strategy. Despite the phenomenon showing great potential in addressing sustainability challenges, it had a high failure rate and resulted in a number of challenges; such as, destruction of the resource base due to over harvesting, appropriation of benefits by more powerful stakeholders as commercialisation became successful, and a lack of marketing information for natural resources products (Schrekenberg, 2004). It is against this background

that I carried out this study to understand the phenomenon of how rural communities learn to commercialise natural resource products and suggest some possible strategies to improve the learning.

This research was inspired by other researchers such as the study by Shackleton (2005) entitled; *“The Significance of the Local Trade in Natural Resources Products for Livelihoods and Poverty Alleviation in South Africa”* and Nel, Illgner, Wilkins, and Robertson (1999) in their study entitled, *“Rural Self-Reliance in Bondolfi, Zimbabwe: the role of beekeeping.”* Although these studies revealed the potentials in commercialising natural resource products for alleviating poverty and improving natural resources management by rural communities in southern Africa, they did not focus on the phenomenon of how rural people were **learning** the processes. While other researchers such as Downsborough (2007) and Pesanayi (2008) looked at the learning processes in farming communities of practice, there was little emphasis on how that learning expands beyond the communities of practice in the context of natural resource product commercialisation. Another study that used a similar methodology to the one used for this research was Mukute’s (2010), entitled *“Exploring and expanding learning processes in sustainable agriculture workplace contexts.”* While Mukute’s (2010) study focused on sustainable agriculture, this study focuses on contributing new knowledge on how social learning takes place in relation to the sustainable harvesting of natural resources and how the learning processes develop in rural contexts of supported transition to commercial beekeeping. Such knowledge would be useful in designing and implementing environmental education and poverty alleviation programmes which seek to benefit rural people working on natural resource based Small to Medium Micro-Enterprises (SMMEs).

### **1.2.1 Research Question and Goals**

The research question is “How does social learning in relation to the sustainable harvesting of natural resources develop in rural contexts of supported transition to commercial beekeeping?” To answer to this question the research addressed the following research goals:

- To investigate the transition from wild honey harvesting and subsistence hives to commercial beekeeping in the two southern African contexts of Hluleka and Buhera;
- To surface axes of tension and contradictions in social processes of learning to commercialise beekeeping in Hluleka and Buhera community contexts and;



- To develop possible strategies for fostering learning to strengthen sustainable commercialisation of beekeeping in Hluleka and Buhera.

### **1.3 Study location and contextual profile**

This study was carried out in two areas, namely Hluleka in South Africa and Buhera in Zimbabwe. Subsection 1.3.1 and 1.3.2 below introduce the two research sites and their contexts, which are discussed in more detail in Chapters 4 and 5.

#### **1.3.1 Hluleka**

One of the study areas is Hluleka, a rural area in South Africa. The beekeeping project in this area is for five villages that are next to Hluleka Nature Reserve on the Wild Coast, roughly 30 km from Port St. Johns, and approximately 90 km south east of Umthatha town in the Eastern Cape Province, South Africa. The Eastern Cape Province has a population of more than six million people, and is the second largest and poorest province in the country (Kepe, 2001). Kepe (2001) argues that seventy percent of the population in the province live in the rural areas, which have an unemployment rate of over 50 percent

Vegetation in the area between Lusikisiki and the Mthamvuna River where Hluleka lies was described by Kepe (2001) as the most sensitive as it consisted of many endemics and is referred to as the Pondoland Centre of Endemism. Sensitive vegetation types in the region include:

- Coastal and Pondoland grasslands which are rich in herbaceous plants and fynbos species;
- Vleis and marshes rich in orchids, bulbous monocotyledons, herbaceous dicotyledons and dominant sedges and rushes;
- Rocky outcrops which have unique patches of vegetation with a variety of Pondoland endemics;
- Forests on rocky ledges and steep gorges with a variety of endemic woody species;
- Riverine forest and riverine thicket; and
- Coastal Forest Thicket with endemics restricted to coastal sands (Kepe, 2001)

Grasslands are the most impacted of the vegetation types in the Hluleka rural area, mainly due to farming activities and the overgrazing of stock, nevertheless, some pristine patches are

reported to occur in remote areas (ibid). Kepe also (2001) highlights that among the key livelihood activities in the Wild Coast area were a combination of arable and livestock farming, the collection of natural resource products and various off-farm sources including remittances and pensions. The importance of natural resource products as a source of livelihood was highlighted to be particularly important for the poor and female headed households who stay near the nature reserves (Levelndal & Gelberblom, 2005). By trading some plant material such as medicinal plants, thatch grass, fuel wood, sea weed and baskets made from sedges, these households are able to earn a living (ibid). This explains the effort by government and donor agencies to address poverty through natural resource based development programmes in the Wild Coast. Examples of some of these programmes are the Wild Coast Special Initiative, Pondoland Conservation and Development Wild Coast Project, Wild Coast Community Tourism Initiative, Participatory Forestry Management and the Government of South Africa's Expanded Public Works Programme (Kepe, 2001; Levelndal & Gelberblom, 2005) which funded commercial beekeeping such as the Hluleka beekeeping project – this study's focus.

### **1.3.2 Buhera**

Buhera is one of the few districts in Zimbabwe which consist wholly of communal land. This district is located in the Eastern Province of Manicaland, a province with the highest population density, estimated at forty-nine people per square kilometre, in rural Zimbabwe (Zimbabwe. Central Statistics Office, 2004). Buhera district falls in agro-ecological zones III, IV and V which are three of Zimbabwe's five agro-ecological zones. Agro-ecological zone I is regarded as an intensive agricultural productive area and receives a high rainfall of above 1000mm per year, whilst on the other end of the continuum agro-ecological region V is considered as a low rainfall area receiving below 450mm/year, and is therefore considered not suitable for crop production unless the land is under irrigation. Land degradation in Zimbabwe, especially soil erosion is considered to be more prevalent in agro-ecological zones III, IV, and V (Whitlow, 1988; Mambo & Archer, 2007). Scoones (1992) also argues that land degradation is pronounced in the communal areas in Zimbabwe which were predominately agro-ecological regions III, IV and V. It is also argued that the contribution of communal areas to Zimbabwe's total land degradation is estimated at 80 per cent (ibid).

Land degradation has been referred as a complex interaction of socio-economic and biophysical factors (Reynolds & Stafford Smith, 2001; Mambo & Archer, 2007). In Sub-Saharan Africa some of the cited causes are population increase, poverty and overgrazing to mention a few (ibid). Whilst on the other hand climate change, in arid and semi-arid eco-regions, especially the reduction of precipitation during crucial growing seasons or even slight shifts in the seasonal distribution of rainfall, is also attributed to land degradation, as reduction in vegetation cover exposes the soil to erosion (Reynolds & Stafford Smith, 2001). Mushove (2003) reports that local knowledge systems regarding rainfall and drought identified the following seasons as drought years 67/68, 72/73, 82/83, 83/84, 84/85, 85/86, 92/93, 93/94, 94/95, 95/96, 97/98, 98/99. Mambo and Archer (2007) argue that in 1992, 70.7 percent of the total area of the Buhera district was under cultivation, while 27.7 per cent was under woodland, despite Buhera falling in a land degradation and drought prone zone. Mambo and Archer (2007) highlight the threat to natural woodlands as people continue to open land for cultivation, and use poor crop production and grazing practices.

In the study on the survival mechanism during drought years in Buhera, Mushove (2003) highlights that natural resources contribute to 19.6% of the livelihood sources in drought seasons. Mushove (2003) also argues that people in Buhera depended on commercialisation of natural resources products such as the selling of wild fruits, wild vegetables and honey among other livelihood sources during drought years. It is the concern about poverty and the conservation of natural woodlands that have seen some organisations such as the Zimbabwe Farmers Development Trust start the beekeeping project in Buhera, the second site for this study.

## **1.4 Structure of the study**

The seven chapters in this thesis have been arranged in such a way that they would address issues related to the research question, as indicated by the overview:

**Chapter 1** presents an introduction and background to the research, introducing the researcher (myself) and how the study locates itself in the research programme on change oriented workplace learning and sustainability development practices in southern Africa. This chapter also presents the research question and goals and clarifies key concepts within the study, and introduces the two research sites

**Chapter 2** reviews the literature on the history of Community Natural Resources Management (CBNRM) in southern Africa and how this is being used as a sustainable development poverty alleviation strategy. The chapter briefly describes learning commercial beekeeping and it locates itself within CBNRM approach. The theoretical frameworks used in this study, Cultural Historical Activity Theory and Social Learning theory, are described and a brief explanation is provided as to how they shape and influence the study, and why they are seen as appropriate for addressing the research question.

**Chapter 3** explains the research processes undertaken, describing and justifying the theoretical frameworks and research techniques. The study used multiple case study design within a social context of Community Based Natural Resources Management (CBNRM) context in southern Africa. The chapter also describes how the data was generated; managed and analysed using the theoretical lenses alluded to in Chapter 2.

**Chapters 4 and 5** describe and present the first phase data analysis in Hluleka and Buhera respectively. These chapters describe the history of beekeeping and how it was shaped by the changing social and political complexities within the two cases. Activity systems that interacted in learning of commercial beekeeping are also described, and tensions and contradictions in the learning processes are highlighted and described.

**Chapter 6** describes the second phase data generation and analysis. The process of carrying out an Intervention Workshop in order to model new solutions or new tools to model solutions for tensions and contradictions highlighted in Chapters 4 and 5 are described, case by case. The chapter also demonstrates how Wals' (2007) analytical tool of monitoring social learning was applied to reveal the social learning processes taking place.

**Chapter 7** is the concluding chapter. This chapter explains how I answered the research questions and goals. In this chapter I also made claims and recommendations for future studies on similar issues.

## **1.5 Clarification of key concepts**

Below are some of the key terms used in this research and their meaning based in the context of this study.

- **Beekeeping** is an activity practised by people when they own bee nests or hives and preserve bees in order to harvest honey time and again.

- **Cultural belief** is a group of ideas which are held highly by a community on the basis of their long term and sustained experiences and interaction with their local environments (Zazu, 2007).
- **Honey hunting** is an activity where people raid a bees nest when they find one and harvest honey combs from it, but do not own or take steps to preserve the bees (Crane, 1999). Honey hunting is sometimes referred as wild honey hunting.
- **Intervention workshops (Change Laboratory Workshop)**. This is a methodological tool which brings together various stakeholders including the researcher to work on a model solution to an identified problem that has arisen in carrying out an activity. This methodological tool is sometimes referred to as a Change Laboratory Workshop; however, in this research I will refer it as an Intervention Workshop because of the Interventionist approach used in modelling solutions.
- **Interventionist Researcher** is a person who helps practitioners to undertake epistemic actions of analysing the need and possibilities for change in their activity, whilst carrying out research (Pihlaja, 2005). This phrase is also used to refer to the researcher (myself) when describing the Intervention Workshops processes.
- **Natural Resources Products** refers to goods and services which can be derived from the natural resources for use by human beings, in this study these are bee hive products.
- **Small to Medium Micro-Enterprises** is taken to mean all sectors of the economy that employ less than 500 employees, including agriculture, hunting, fishing and forestry activities.
- **Sustainability** – this implies utilisation of a natural resource product in a way that will ensure its availability for future use.

## 1.6 Conclusion

This chapter provided a detailed overview of the conceptualization, and rationale of this study. The chapter further provided the background information and context within which the study was designed and conducted. The next chapter focuses on reviewing literature that

relates to CBNRM, Small to Medium Micro-Enterprises (SMMEs) and insights on theoretical frameworks. Reviewing of relevant literature helped me develop further insights into the theoretical discourse and historical perspectives pertaining to CBNRM approaches within the southern African region, and their role in poverty alleviation and enhancing environmental education learning processes.

## **Chapter 2: Situating learning commercial beekeeping, a Community Natural Resources Management practice**

### **2.1 Introduction**

This chapter describes the history of natural resources management in southern Africa, starting with pre-colonisation and apartheid to post-colonisation. The chapter also explores how the changing political terrain influenced change in natural resources management and utilisation, and how this could have been influenced by the nature culture relations in shaping Community Based Natural Resources Management (CBNRM). Some aspects of Small to Medium Micro-Enterprises (SMME) will also be described, with reference to how they relate to CBRM as a sustainable livelihood strategy and the perceived problems of SMMEs as a sustainable development ideal.

Since this research is focusing on how rural people are learning to commercialise natural resource products as a CBNRM strategy within their social context, a number of social learning processes and assumptions will be looked at. The learning assumptions and processes reviewed include formal learning and informal/workplace learning, and Cultural Historical Activity Theory (CHAT) in its application in workplace learning. The chapter concludes by looking at some key features of social learning, as described by Wals (2007), and discusses how Wals' (2007) analytical tool can be used in monitoring social learning processes in workplace learning contexts.

### **2.2 History of natural resources management in southern Africa**

Conventionally, people relied heavily on the abundant wild natural resources that surrounded them. As a result, people in Africa generally appreciated the value and role of natural resources, in some cases people incorporated nature into their worldviews, metaphors, folklores and beliefs systems (Fabricius, 2004). Fabricius (2004) further argued that most of their [Indigenous people] cultural systems of governance included rules and procedures which were designed to regulate the use and management of natural resources. Although use of natural resources in most African countries was for subsistence and/or household use, some literature reports commercialisation to some products such ivory, rubber and minerals even before colonisation (Wainwright, 1990; Marchand & Marchand-Mayne, 2003; Cambray 2005; Fox & O' Donoghue, 2009).

In Southern Central Africa, which is now known as Angola, Zambia, Tanzania and Mozambique, traders from as far as Portugal, Britain, and Zanzibar set up networks with local bee hunters to trade in beeswax (Wainwright, 1990). As demand for beekeeping products increased, bee hunters were forced to walk long distances, hence some started domestication of bees in this region (ibid). Wainwright (1990) pointed out that man-made nests from tree bark, hollowed logs, baskets and calabashes were hung in trees for bees to come and occupy. Other activities of commercialisation of honey before colonisation have also been recorded, amongst the Khoi San people who lived in the Outeniqua hills and the Xhosa people (Marchand & Marchand-Mayne, 2003; Cambray, 2005; Fox & O' Donoghue, 2009). Cambray (2005) argued that the culture of honey hunting which never matured into beekeeping south of the Limpopo River could have been influenced by Khoisan traditions of hunting and gathering, as the Khoisan never stayed in one place long enough to learn farming, since they were normally nomadic. Although I did not come across literature about ancient bee products trading in Zimbabwe, bark and log hives are considered to be cultural hives for the *Shona* culture. The impact of harvesting of natural resources during this period was regulated through cultural practices such as pulse hunting, patch burning, sacred forests and taboos (Fabricius, 2004). These practices were adaptive management systems which were geared towards enhancing ecosystem services through maintaining natural resource resilience and reducing over-exploitation of natural resources (ibid).

With the arrival of the Portuguese navigators in the sixteenth and the seventeenth centuries in the Cape, followed by the establishment of European settlements in 1652, the landscape of exploitation of natural resources in southern Africa changed. The Portuguese used indigenous timber for repairing ships before continuing on their travels (Willis, 2004). Settlers of Dutch and British origin their natural resource exploitation diversified to hunting big game especially elephant for trade throughout the subcontinent, and wealthier settlers like farmers would hunt for recreation and sport (Fabricius, 2004). Fabricius (2004) also noted that settlers' objectives of commercialisation of natural resources had gone beyond subsistence use. As commercialisation was for economic gain, rates of extraction soon stretched beyond of rates of replenishment.

The harvesting of natural resources during these olden days was regulated through cultural practices such as pulse hunting; patch burning, respects of sacred forests, and taboos (Fabricius (2004). The pressure put on natural resources by settlers during the same period



also extended to changes in cultural land use practices; while the locals used hoes to till the soil, the Europeans brought ploughs, and while the nomadic Khoi San would move their livestock before they (livestock) could have a lasting impact on the land, settlers changed to intensive systems to produce more milk and meat for marketing. Such practices accelerated erosion by disturbing natural soil processes and profiles (ibid). In 1900, after realising the level of degradation, foreign ministers representing African colonial powers – Britain, France, Belgium, Italy, Portugal and Spain gathered in London to sign the world's first international conservation treaty: the Convention for Preservation of Animals (Willis, 2004). The main emphasis was on how to restrict the use of wildlife, rather than on development of strategies to ensure their long term utilisation and ecosystem renewal (Crush, as cited by Fabricius, 2004). This resulted in subsistence hunters being called poachers by the settler population, even though subsistence hunters had once relied on this form of economic activity for survival (ibid). Further politicisation of natural resources led to the development of some notorious legislation such as the Land Apportionment Act of 1930 in Rhodesia and the Land Acts of 1913 & 1936 in South Africa, thus promoting uneven distribution of land. Local people were concentrated in agriculturally unproductive regions with poor rainfall and poor soil and which were tsetse fly and malaria infested (Fabricius, 2004). Willis (2004) argued that these repressive legislations further alienated local people from natural resources which were their major source of livelihood. This was used as one of the major justifications for the liberation wars. With the gaining of independence, the newly formed governments were pressured to consider the demands and plea of the local communities for greater recognition and improved access to ecosystem services. From this emerged Community Based Natural Resources Management (CBNRM) (Fabricius, 2004) and related approaches such as Community Wildlife Management (CWM), Participatory Natural Resources Management (PNRM), Community Based Water Management, Community Fisheries Management, Community based range or pasture management to mention a few (Mukute, 1994; Turner, 2004a).

### **2.3 CBNRM as a conservation and development strategy**

CBNRM has a number of definitions as some of these definitions relate to the various related approaches alluded to above, detailed discussion of each of these is beyond the scope of this study. For the purpose of this research, however, I draw mainly on CBNRM, which is a term depicting the way in which a group of people living in the same area have a common interest

in organising themselves in order to use and conserve the natural resources in their area (Hachileka, 2000). In the southern African context the development and agenda of CBNRM has largely been driven by social, political, cultural as well as material dimensions (Turner, 2004a). Given the long history of fighting colonisation and apartheid the new governments in southern Africa considered the plea of local communities for greater recognition of, and the need for the advent of democracy improved ecosystem services, through accessing areas that they were previously alienated from (Arnold, 2004; Fabricius, 2004). CBNRM was seen as a move aimed at removing or reducing conflict between protected areas and people, hence it signalled emerging international thinking on conservation in the late 20<sup>th</sup> century, after independence (Fabricius, 2004). CBNRM signalled that economic development in southern Africa countries was seen by central governments and international organisations to be associated with conservation issues (Arnold 2004; Fabricius, 2004). Commercialisation of natural resources was seen as one way of addressing the demands for access to natural resources and for beneficiation from these resources while also addressing conservation imperatives. Further impetus is provided to CBNRM by increased support by international donors particularly United States Agency for International Development (USAID), Norwegian Agency for Development Cooperation (NORAD) and Netherlands Development Organisation (SNV). In addition, favourable policies, such as the Millennium Development Goals number 1 & 7 which commit to reducing poverty by half and ensuring environmental sustainability respectively further spurred on the emergence of CBNRM (UN, 2009). CBNRM as a sustainable livelihood strategy is also supported by some regional and international agreements such;

- Southern African Development Community (SADC) protocol on tourism, wildlife conservation and law enforcement was produced in August 1999. Objective: each state party shall ensure the conservation and sustainable use of wildlife resources under its jurisdiction. Parties shall take measures facilitating community natural resource management (CBNRM) practices in wildlife management and wildlife law enforcement. The protocol also calls for economic and social incentives for the conservation and sustainable use of wildlife;
- Convention on Biological Diversity adopted in June 1992, its objective is to effect international cooperation in the conservation of biological diversity, and to promote the sustainable use of living natural resources worldwide as well as the sharing of

the benefits arising from the use of biological resources. Article 8j relates to safeguarding intellectual property rights and benefit-sharing and;

- Convention to Combat Desertification (CDD) adopted in June 1994. This convention applies to those countries experiencing serious drought and/or desertification, particularly in Africa. The CDD encourages integrated development to prevent or reduce land degradation, and to rehabilitate and reclaim land. Its core principles are participation of local communities, partnership and cooperation at all levels and consideration of the needs of developing countries (Fabricius, 2004, p.11).

The above mentioned policy statements were easily adopted and co-opted into newly elected governments' development plans and programmes as was evidenced by the Communal Program for Indigenous Resources (CAMPFIRE) in Zimbabwe, Wildlife Management in Khaa wildlife Management Area in Botswana, and Makuleke contractual parks in South Africa amongst others (Mukute, 1994; Fabricius, 2004; Turner, 2004a).

These government programmes focused on enabling communities to derive sustainable livelihood from wildlife management. However, most rural areas in southern Africa are devoid of such a resource, hence the search for alternative resources such as forestry products to break the poverty cycle (Grundy & Le Breton, 1998). Therefore CBNRM was extended beyond wildlife to cover natural resources products such as marula (*Sclerocarya birrea*) for making alcoholic beverages and jam, Baobab (*Adansonia digitata*) for pulp and oil, Masau (*Ziziphus mauritiana*) for jam, shrubs for herbal teas, such as Rooibos and Makoni tea; and beekeeping (Grundy & Le Breton, 1998; Shackelton, 2005). Support for learning programmes to develop small to medium micro-enterprises in natural resources was also being spearheaded by non-governmental organisations such as the Veld Products Research Development, and the Centre for Research and Information Action in Africa (CRIAA) in Namibia, the Southern Alliance For Indigenous Resources (SAFIRE) in Zambia, and Zimbabwe and internationally Phytotrade (Ham, 2003).

Despite strong support for CBNRM programmes, some of the CBNRM interventions had some drawbacks. The approach was considered to be an experimentation of a people-centred approach to the conservation of wildlife and its results were slow therefore the extinction of wildlife could increase (Turner, 2004b). However, CBNRM projects are perceived by some to alienate people from cultivating areas put under conservation to feed their families, as the

land is set aside to provide environmental services, through preserving biodiversity, rare habitats or scenic zones (Hove, 2000; Turner, 2004b; Hughes, 2006; Wolmer, 2007). Hughes (2006), however, argues that if such land is utilised it is in most cases for non consumptive or low impact tourism, which is agriculturally unproductive. Competition for land use (i.e. conservation or agricultural production) has been identified as the main reason why some rural people are fighting to cultivate in conservancies in order to meet their basic food requirements (ibid). These different philosophies of CBNRM held by conservationists and rural people opened areas for engagement amongst CBNRM practitioners. One of the key aspects CBNRM practitioners must start to consider sincerely is addressing the needs of people who have co-existed with such natural resources rather than just focusing on how such natural resources should be conserved. This then calls for relooking at the relationship between people and nature which is referred as nature-culture relationships, or co-evolution of natural and cultural landscapes (Norgaard, 1994; Head, 2000).

Co-evolution of natural and cultural landscapes involves a continuum of an understanding of a relationship between humans and nature/environment. At one end of the continuum environment is viewed as a pool of resource inputs that is transformed by scientific technological development in the pursuit of satisfying human needs (Norgaard, 1994). At the other end of the continuum environment is considered as a complex and biological system rather than a stock of separate resources, therefore species are transformed between environments as humans interact with them in the process of trade, colonization and development (ibid). The use of this continuum will help to identify some polarities in assumption, philosophy and views that still exist amongst some CBNRM partners. At one end of the continuum some people still have what Lotz-Sisitka (2009) called the discourse of wilderness-centred conservation, which is protectionist and preservationist in nature and which still undermines people's ability to manage their environment and criminalises its use. On the other end of the continuum people want to return to the land; to be in ecologically controlled parks and conservancies where they will cultivate land to feed their families whilst conserving biodiversity. This then calls for a middle ground, the discourse of sustainable development or ecological democracy (Dryzek, 2005; Lotz-Sisitka, 2009). Ecological democracy calls for mediation of tensions between different perspectives of nature-culture relationships in order to come up with a sustainable position acceptable to different actors (Dryzek, 2005). It also acknowledges that environmental issues feature a high degree of

uncertainty and complexity, which are magnified as ecological systems which interact with social, economic and political systems, therefore people are supposed to learn from their shortcomings (ibid). This is why some strategies such as commercial beekeeping which encourages beekeepers to put their beehives in the nature reserve are new approaches to CBNRM (see case study 1 Chapter 4).

## **2.4 Beekeeping as a CBNRM strategy**

Initiatives between people and the environment have traditionally focused upon charismatic mega-fauna and flora, often overshadowing the less obvious invertebrate fauna, such as insects, spiders and other arthropods. It has, however, become apparent that these natural resources can be of great benefit (Nel & Illgner, 2004). Bees contributions to rural people have hardly ever been assessed. When viewed from the utilitarian perspective, it is apparent that the long forgotten honey bee was even before the colonisation of southern Africa and is among the most widely used valuable insects (Nel & Illgner, 2004). The honey bee and its products are not only an important part of the rural economy in many parts of southern Africa as a food source, but also because bees wax is used by the local craftsmen for a variety of purposes (Nel & Illgner, 2004). Nel and Illgner also noted that in Zambia more than 50 percent of honey produced by traditional methods is sold or bartered locally for traditional rituals such as initiation. Beekeeping has several merits which resonate with sustainable development discourse especially around environmental, societal and economic sustainability such as;

- Beekeeping is non extractive and sustainable. Beekeepers are seen as friends of the natural environment, and are willing to conserve forest and vegetation where bees forage for food (Bradbear, 2008);
- Bees pollinate flowering plants – this activity is vital for life on earth. Adequate pollination leads to good quality seeds and fruits and is essential for maintaining biodiversity (Bradbear, 2008);
- Beekeeping diversifies agriculture as it can be integrated with other agricultural activities such as arable and pastoral farming, as well as agro forestry. Furthermore, bees compliment agricultural enterprises. (Nel, Illgner, Wilkins, & Roberston, 1999); and

- As bee colonies of the industrialised countries like Europe and America continue to decline due to Colony Collapse Disorder (CCD) and other diseases, it is argued that tropical forests, particularly in Africa, are some of the few habitats with healthy bee species. This gives the continent and its people the opportunity to fill the gap being created in industrialised countries (Bradbear, 2008).

The presence of diverse vegetation, a subtropical climate, high levels of poverty and increased demand for honey in southern Africa, are some of the driving forces behind commercialisation of the beekeeping system in rural areas (Nel & Illegner, 2004). A number of institutions and organisations have organically or inorganically emerged and are geared towards promoting small to medium enterprises in rural southern Africa. Such institutions and organisations include the Lesotho Beekeepers association, Botswana Beekeepers Associations, Cooperative Beekeepers of Maputo Province in Mozambique, South African Beekeeping Industry, Total Transformation Agribusiness the Makana brewery in South Africa, and Practical Action and Zimbabwe Farmers Development Trust in Zimbabwe (Total Transformation Agribusiness (PTY) LTD, n.d.).

The above mentioned institutions and organisations are training rural beekeepers to transform from traditional methods of honey hunting/beekeeping to small-medium micro-enterprise using the contemporary beekeeping techniques. My research interest is not the role of beekeeping in community natural resources management; but it is, however, to examine the social learning processes in the transition from traditional practices to a commercial enterprise (see Chapters 4 and 5).

## **2.5 Beekeeping as a Small and Medium Micro-Enterprise (SMME)**

There is lack of agreed definition of what actually constitutes a small business. Any agreed definition of what actually constitutes a small business may lack a reliable and inclusive data basis (Goss, 1991; Storey 1994). The reason why this problem exists, is because of the diversity in the types of business available in virtually all sectors of the economy ranging from criminal entrepreneurship (dealing with stolen goods, illegal substances or trading in a parallel market) through to trading in the formal business sector that contributes to national economy through paying tax and creating formal employment (Goss, 1991). On the other hand defining small businesses is based on interests and this explains why there are a variety of definitions. In some cases sectors are described by their components (Page & Steel, 1984).

To overcome this confusion in definitions, Storey (1994) argued that the European Commission [EC] had to coin a term „small to medium enterprise’ (SME) which is disaggregated into three components based on employment only;

- Micro-enterprises: those between 0 and 9 employees;
- Small enterprises: those with 10 to 99 employees;
- Medium enterprises; those with 100-499 employees (ibid).

The SME sector is therefore taken to be all enterprises except agriculture, hunting, forestry and fishing which employ less than 500 employees (Storey, 1994 p.13). However, the European Commission (EC) definition of small businesses fails to satisfy the southern African context where economies are highly dependent on the utilisation of the natural resources such as agriculture, hunting, forestry and fishing (Lotz-Sisitka, Olvitt, Gumede & Pesanayi, 2006). It is therefore for this reason that beekeeping is considered as a small to medium micro enterprise. Quantitatively classification criteria include employment, annual turnover and total assets with the size – class categories ranging from survivalist, micro, very small, small to medium enterprises (ibid). This therefore justifies the coining of the word „Small to Medium Micro-Enterprise’ (SMME).

The South African definition shares a lot in common with the Zimbabwean view of SMMEs, as Zimbabwe defines it (SMME) as using three factors; number of employees, total net asset, and legal structure (Zimbabwe. Ministry of Small and Medium Enterprise Development, n.d). To avoid further confusion in terminologies the following terms will be used interchangeably throughout this write up, SMME, SME and small businesses. On farm and natural resources enterprises such as beekeeping are also included the Small and Medium Micro-Enterprises.

Commercial beekeeping enterprises just like any other SMMEs have common characteristics when it comes to addressing sustainable development challenges in developing countries. Some of the key reasons for the promotion of SMME are mentioned below:

- Small and Medium Enterprises create employment as they are labour intensive, presenting an answer to employment of a growing labour force in urban and rural areas (Page & Steel, 1984, Harper, 1985; Malagas, 2001; Roux, 2002). Maarsberg (2002) reported that in South Africa despite the economic growth outperforming that of many other industrialised economies employment creation has remained as one of the major challenges with only 0.1% employment created between September 2001

and February 2002. Of particular importance to note was that more than 80% of employment in the agriculture, forestry and fishing sector where beekeeping falls was offered by small businesses (ibid).

- Research has also shown that SMMEs employ more labour per unit of capital, and require less capital per unit of output than large ones; and small businesses also use labour more efficiently than large firms (Harper, 1985). The efficient use of labour in SMMEs is based on its lower level union membership therefore the relationship between individual performance and job security is strong if less secure. This argument also underpins the discussion on the efficient use of labour, not always available in large firms (Goss, 1991).
- SMMEs are also perceived to be efficient in the use of other inputs such as capital and materials hence reducing unit cost, as inputs are properly valued (Page & Steel, 1984; Malagas, 2001).
- Small businesses use local or indigenous technology, raw material and equipment therefore saving on use of foreign currency which is often scarce; hence promoting local economic development (Page & Steel, 1984, Harper, 1985). Over and above saving on foreign resources small businesses can easily adapt to the changing micro and macro-economic environment thus making it easy to exploit isolated niche markets both locally and abroad. This aspect is important for job security for employees especially during recessions (Malagas, 2001; Roux, 2002). In Zimbabwe beekeeping became a business for survival under the period of economic recession in the drought stricken region of Buhera South (ZFDT, n.d.) see Chapter 5.
- Small business also contribute a great deal in the provision of a training ground for people who cannot be absorbed by large businesses or those who would want to start their own businesses, such as ambitious people. SMMEs therefore promote indigenous entrepreneurs in rural and urban settings (Page & Steel, 1984; Harper, 1985; Malagas, 2001; Roux, 2002). This is an important contribution by small businesses towards alleviating the problem of the shortage of skilled staff and managers in developing countries hence the importance for human capital formation in the objectives of beekeeping activities being implemented under the Expanded Public Works Programme in South Africa (South Africa. DPW, 2009). Enterprises



such as beekeeping, picking and selling of natural resources products like mushrooms, and herbal tea increases women's role in contributing to household income in southern Africa, unlike previously when they were drawers of water, gatherers of fire wood and bearers of children.

It is therefore important to note that small businesses contribute not only beyond economic growth but also to socio-economic and environmental objectives of development (Page & Steel, 1984; Goss, 1991). In most African countries where a bigger share of the economy is in the hands of a few who were privileged by the colonial and racial discrimination policies, SMMEs are seen as a means of redistributing wealth and promoting entrepreneurship to the formerly less privileged groups (Harper, 1985). In South Africa SMMEs are meant to redress the equalisation of income, wealth and economic opportunities for women and the black community hence the relevance of the high labour intensive survivalist and micro-enterprises such as those under Expanded Public Works Programmes (Malagas, 2001; Roux, 2002; South Africa. DPW, 2009). Because of their nature some small businesses, provide an alternative income for civil servants who do not earn a lot of money and socially disadvantaged groups such as women who conveniently work for few hours when their children are cared for by an elder sibling or relative (Harper, 1985). Such enterprises like beekeeping, the picking and selling of natural resources products like mushrooms and herbal tea, increase the women's role in contributing to household income in southern Africa, unlike previously when they were drawers of water, fetchers of firewood and bearers of children (Shackleton, 2005).

Besides the economic argument for SMMEs as important indicators of economic health of a nation, job creation possibilities, and the spirit of regenerating entrepreneurship and innovation, it is also important to note that small businesses in the CBNRM and entrepreneurship framework contribute beyond economic growth but also to socio-economic and environmental objectives of development (Page & Steel, 1984; Goss, 1991). In most African countries where a bigger share of the economy is in the hands of a few who were privileged by the colonial and racial discrimination policies and post independence governance patterns, SMMEs are seen as a means of redistributing wealth and promoting entrepreneurship (Harper, 1985). In South Africa SMMEs are meant to redress the equalisation of income, wealth and economic opportunities for women and black communities through policies such as the Strategy for Development and Promotion of Small Business of 1995 (Malagas, 2001; Roux, 2002; South Africa. DPW, 2009) hence the

relevance of the high labour intensive survivalist, micro-enterprises. It is also argued that locally owned SMMEs strengthen cultural and social fabrics by providing unity and harmony at national level as employment is created, goods are supplied at affordable prices and there is equitable distribution of income to the population (Page & Steel, 1984, Harper, 1985). Such perspectives provide the justification for initiatives such as Black Economic Empowerment (BEE) in South Africa and the Indigenisation Programme in Zimbabwe.

Large scale businesses are often considered environmentally damaging, as they tend to foreground short term material gain at the expense of environmental quality (Goss, 1991; Malagas, 2001). This amoral materialism has sustained the indiscriminate use of large scale production techniques that continue to extract finite natural resources while also changing the freedom, creativity and naturalness of individuals and societies through new forms of labour and work. Small scale enterprises are believed to possess an essential quality which in itself is humane, non violent and benign (Goss, 1991; Malagas, 2001). This is because they have the ability to use waste material, like timber, rubber packing containers from large firms, thus improving on efficiency of resource use through recycling, hence the slogan „small is beautiful’(Page & Steel, 1984). Not all SMMEs are, however, benign with nature as many struggle to comply/implement environmental regulations.

Although a number of benefits can be realised from the establishment of SMMEs, the objective and processes of establishing SMMEs has been tainted with a number of contradictions and challenges. The following are some of the challenges which appear to be common in the establishment of SMMEs:

1. Actual benefits of SMMEs: It is not clear whether SMMEs are sources of equitable distribution of income to the population in developing countries or sources of economic growth through raising productivity (Page & Steel, 1984). Although employment and productivity ideally grow together, measures to promote employment simply by favouring increased labour intensity may reduce the average level of output per worker (ibid). Investments that use labour unproductively do not promote development, whereas investment that raises output by improving productivity or efficiency may be beneficial even if it does not increase employment (Page & Steel, 1984). Goss (1991) also argued that diversity in policies governing SMMEs makes it complex to monitor their performances; therefore some people think

that they are there to promote enterprise culture rather than societal benefit and economic growth. This is typical of most SMMEs which are funded by government and donor organisations. Despite high levels of mismanagement and poor performance they still receive grants and subsidised loans as support, and in most cases these enterprises die soon after the support ends. A good example is the cooperatives which were formed in most African countries soon after independence (Page & Steel, 1984). Failure by small business to secure favourable funding is linked to lack of managerial skills to keep financial records, this has led to most small businesses having to finance themselves through supplemented gifts or loans from relatives or savings from trading and agriculture, or wages saved from employment in the large sector (Page & Steel, 1984). On the other hand provisioning of institutional financial support to SMMEs sometimes is risky as it encourages more capital-intensive techniques, thereby reducing the expected benefits of reducing unemployment (ibid). For example if a beekeeping business has access to a large cash injection from the government, it will employ advanced technology in extraction of honey instead of a labour intensive technology, therefore subsidised government programmes also risk not creating the level of employment envisaged.

2. Scope of competence: Owners of most traditional small businesses are generally craftsmen-entrepreneurs who are technically proficient in a particular skill but they lack training in marketing, financial management or business organisation, whilst on the other hand owners might be merchant traders who usually have little formal education or technical training (Page & Steel, 1984). Provision of technical assistance through training or credit; assistance and training in managerial, financial and technical skills are essential components for such entrepreneurs. For experienced entrepreneurs/workers credit is the most useful such assistance. It is therefore important for facilitators to determine the level of skills that exist, before giving training to specific SMME owners. On the other hand in SMME's that require machinery, training in use, repairing and maintenance of machinery could raise productivity and be more beneficial than a loan to buy a new machine (Ibid).
3. Real funding commitment for SMME innovation: Research has shown that, although government policy in developing countries emphasise local economic development, public funds allocated for research and development are used to develop high

technology equipment suited for large scale businesses instead of also considering technologies for small businesses, hence it is suppressing the growth of SMMEs (Harper, 1985; Page & Steel, 1984). Harper (1985) also argued that lack of infrastructure like modest roads, the availability of telephones and electricity hampers development of SMMEs in rural areas.

4. Cultural Constraints: In a South African context Roux (2002) argued that the constraints of small businesses are high amongst women in rural areas because of customary laws, cultural beliefs and behaviours which affect women participation. In Zimbabwe similar cases were recorded in the banking sector where there were barriers to women obtaining loans to finance their businesses (Zimbabwe. Ministry of Small and Medium Enterprise Development, n.d.). Such barriers include customary marriage laws requiring married women to seek consent and surety from their husbands before acquiring a loan (Kapoor, Mugwara & Chidavaenzi, 1997).
5. The rural poor as baseline: As SMMEs are mostly based in the rural areas in developing countries where they are likely to be employed and serve the needs of the locals, who are usually poor people. There is always a contradiction on pricing and demand for goods, as SMMEs try to serve the local people with limited disposal income therefore compromising charging economically viable prices (Harper, 1985).
6. Demand Supply systems: Due to technological advancement small businesses now face problems when they want to promote their products. Traditionally they would depend on personal links, but as personal links are being replaced by mass media such as radio, newspapers and posters the cost of advertising cannot be offset by quantities to be produced and sales volumes from SMME ventures. If not the case the demand created by SMME through advertising cannot be satisfied by volumes produced (Harper, 1985).
7. The dominance of large scale investment and expenditure: Trade and investment and other policies have implicitly favoured large scale industry in many countries. Venture capital for industrialisation is given to large scale enterprises through public venture capital which involve highly subsidised interest rates (Harper, 1985; Page & Steel, 1984). Small businesses are excluded because of greater costs in administering finances and processes. Costs of appraisal, disbursement, supervision and recovery do

not vary with the amount loaned hence financial institutions do not make more profit from small scale businesses (ibid).

8. SMME loan defaults and financial institutions: SMMEs have a high loan default rate of up to 80 percent (Page & Steel, 1984). This has been related to failure by government to follow up on loans disbursed, inappropriate lending procedures and SMME owner's beliefs that lending institutions will not follow and press for loan repayments (Harper, 1985). This justifies the behaviour of financial institutions which prefer lending money to large businesses which are low risk customers with capital investment to act as guarantee for loans rather than giving money to SMMEs which are high risk customers (Harper, 1985; Page & Steel, 1984).

Despite SMMEs working in such a fragile environment with a number of contradictions and tensions, there are a number of proposed ways in which to deal with the identified issues. Some of the proposed ways are;

- Provision of a loan guarantee by government to commercial banks to reserve a portion of their funds for small scale enterprises and/ or restricting of specific bank funds for the exclusive use by small scale borrowers (Page & Steel, 1984);
- Formation of cooperatives and manufacturer associations to act as agents for SMME members in obtaining materials, loans and training and lobbying for policy change (Page & Steel, 1984);
- The level of formal education in Small and Medium Micro-Enterprises is generally low. Most entrepreneurs depend on their apprenticeship programs or individual trade skills, but they lack extensive training in marketing, financial management or business organisation or technical skills (Page & Steel, 1984) therefore training of business owners to be able to apply businesses skills efficiently has been considered important (Harper, 1985).

Despite the fact that small businesses and large businesses produce substitutable products they are not in direct competition. Small scale products tend to be produced and sold directly to consumers while large enterprises mass produce and sell through wholesale and retailers (Page & Steel, 1984). There is also price differential as small businesses sometimes produce lower quality goods depending on the skill of the artisan, hence they tend to target lower income markets (ibid). Small businesses are important for a dual economy where there is

structural division between sectors of the economy; small businesses form what is called a „secondary’ or peripheral sector and large businesses constitute the core or the central sector (Goss, 1991; Page & Steel, 1984). It is therefore important to note that more business could be generated through inter-sectorial linkages.

At this point I would like to highlight that my research is not to review various ways of establishing how SMMEs can work in a more favourable environment. My interest as noted in Chapter 1 is to understand how SMMEs working in natural resources sector are learning business concepts in their own social contexts. This review of challenges, provided above, affecting SMMEs, influences learning processes, hence its inclusion here.

## **2.6 Understanding learning in small businesses**

There are two main processes of learning discussed, formal and informal learning. In this section I will try to elaborate on these learning processes, with the help of Malcolm, Hodkinson and Colley’s (2003) framework for describing formal and informal learning using process; location and setting; purpose, and content as descriptors:

- Process - in cases where learning processes are accompanied by everyday or workplace activity, it is considered as informal and sometimes as workplace learning. Engagement in tasks structured by a teacher is most often called formal learning, therefore teacher controlled learning is often considered formal learning, which differs from informal learning where a „teacher’ is not present. In another case it is all about the status of the pedagogue. A formally trained teacher often denotes formal learning, while industrial trainers, trainer mentors or counsellors denote less formal learning, while engagement in learning with a friend or colleague is considered informal learning. Another item considered under this process is assessment. There is generally no (formal) assessment in informal learning, and assessment is predominantly formative and tacit or not explicitly indicated. Where assessment is more formally structured and documented, it often denotes more formal forms of learning, including when summative assessments are used to judge practice or knowledge.
- Location and setting – In case of the physical location of learning, formal learning is associated with schools or colleges whilst informal learning is seen to take place in workplaces, local community settings or in the family. On the other hand learning in an informal setting is often described as open-ended, with few restrictions, no

specified curriculum, and no predetermined learning objectives. And learning in a formal setting is seen as the opposite.

- Purpose- the purpose of learning in the two sectors is important. In informal learning the purpose of learning is considered to be learner determined and initiated, whilst in formal learning it is designed to meet the externally determined needs of others; often by those with either more power or knowledge; such as a teacher, or the government to mention a few.
- Content- Formal learning is mostly concerned with acquisition of established knowledge/understanding/practices, while informal learning involves development of new knowledge *in situ*. It is therefore perceived that the focus of formal learning is vertical knowledge while for informal learning, knowledge is perceived as horizontal or everyday knowledge, or workplace competence. (Malcolm, Hodkinson & Colley 2003).

Malcolm, Hodkinson and Colley (2003) cautioned, however, that it is not useful to separate everyday or informal learning from formal learning, as there is an overlap. This insight is important in the context of this study where learning is viewed as either informal, everyday or workplace learning, while more formal training programmes are offered to support learning of a new practice. When analysis of beekeepers learning in workplaces is made, there will also be some formal aspects such as using beekeeping training manuals and a well defined course outline. Just as Malcolm, Hodkinson and Colley (2003) argued that it is important not to think of learning as compartmentalised into formal and informal sectors as part of formal learning processes are embodied in informal, everyday or workplace learning processes. The following section will describe the attributes of workplace learning in detail.

## **2.7 Workplace learning**

As with formal and informal learning Felstead, Fuller, Unwin, Ashton, Bulter and Lee (2005) described two types of workplace learning, „learning as acquisition’ and „learning as participation or construction’. Learning as acquisition was described as learning as a product with a visible, identifiable outcome, often accompanied by certification or proof of attendance (Felstead *et al*, 2005, p. 362). This learning might be equated to what is called „learnership’ under the South African’s Expanded Public Works Programme (EPWP), when workers are provided with an accredited qualification to use in searching for a job after the

end of their contract (South Africa. Department of Public Works [DPW], 2009). For example people working on a commercial beekeeping project will receive a certificate in farm business management, which shows their proficiency to produce a beekeeping cash flow budget. Felstead *et al* (2005) urged that this type of workplace learning is based on three assumptions which are as follows:

- Learning as a stockroom or vessel to be filled: an individual human mind which is steadily given some ideas or human considered as a container to be filled with certain material, this learning elevates the body and makes learning an individualistic activity;
- Learning can only take place when new ideas are neatly given alongside others with any inconsistencies corrected.
- Learning as gaining ownership over self contained material such as facts, schemas, concepts, notion and frameworks to mention a few.

On the other hand learning as participation is when learning happens to improve work performance by carrying out daily work activities. It involves interacting with people, tools, materials and ways of thinking as appropriate (Felstead, *et al*, 2005). This type of learning is fluid and is produced and continuously reconstructed through relationships with and interactions between individuals, rather than as an object which is acquired, internalised and owned (*ibid*, p. 363). Felstead *et al* (2005) went on to describe three assumptions of such learning as:

- Learning that emphasises the importance of action. It is impossible to separate learning from action, hence their process products are entwined with one another in a circular, interdependent loop;
- Embodied action is embedded within a particular context, hence this shapes and transforms individuals and sets the parameters of the learning environment;
- Learning is born out of interaction with the world in which we reside; the people we work with, tools and concepts we use, and the organisations we liaise with.

Communities of practice theory emphasises learning that occurs through participation in a network of relations known as communities of practice (Lave & Wenger, 1991; Felstead *et al*, 2005). The Cultural Historical Activity Theory approach – the influencing methodology for this study - focuses on learning occurring naturally in the work process where it is carried



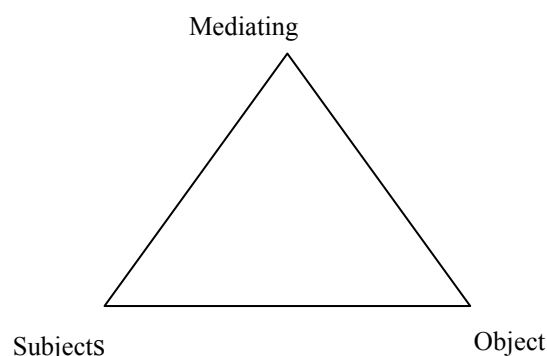
out according to accepted workplace rules, modes of behaviour and mediating tools with explicit engagement and encounters with contradictions and tensions that need to be resolved (ibid). The workplace can be seen as that place where people produce goods and services and where their primary concern is earning a livelihood, not learning. However, learning is an integral part of the process of coming to earn a livelihood in a workplace. Workplace learning is shaped by historical, cultural and situational factors (Billet, 2001), this is the reason why I used Cultural Historical Activity Theory for this study, as discussed in the next section.

## 2.8 Cultural Historical Activity Theory (CHAT)

Cultural Historical Activity Theory (CHAT) emerged from the work of Lev Vygotsky drawing from Marx's transhistorical concept of labour (or activity) in the 1920s and early 1930s (Engeström, 2001; Daniels, 2008). This concept states that the simple elements of the labour processes are:

- (i) purposeful activity, that is work itself;
- (ii) the object on which that work is performed; and
- (iii) the instruments of that work (Daniels, 2008 as cited in Marx).

The theory is known to have three generations. The first generation is derived from Vygotsky's view of mediation abstracted from context, involving subject, object and mediation artefact relations (Engeström, 2001; Daniels, 2008). In the context of beekeeping, this is when an individual beekeeper uses available mediation artefacts/tools such as a traditional hive to achieve his object of producing honey (see Figure 2.1 below).

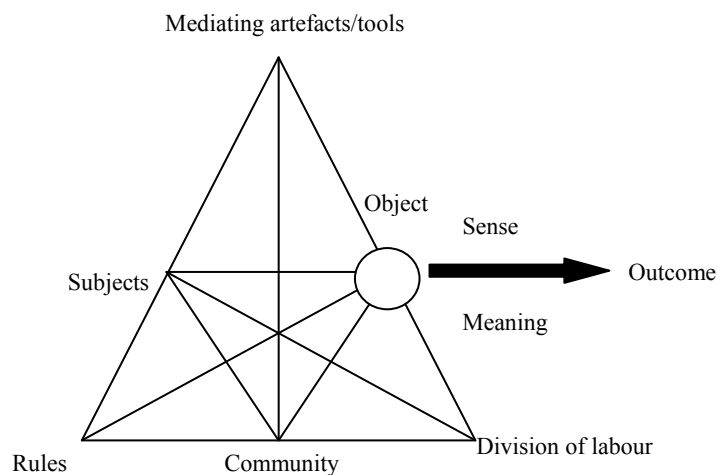


**Figure 2.1 First generation activity system**

*(adapted from Engeström, 2001, p.135)*

The second generation is based on work by Leont'ev who sought to address the Cartesian split between individual and societal structure through a focus on activity (Engeström, 2001). Engeström (2001, p.134), in describing the second generation activity system, argues that the individual could no longer be understood without his or her cultural means; and the society could no longer be understood without the agency of individuals who use the formation of logical operations in the subject. Objects became cultural entities and object-orientedness of action became the key to understanding human development (ibid)

Engeström (2001) describes this concept of learning as a concept which puts primacy on the object in understanding human development. Second generation activity theory puts primacy on the activities associated with the object to understand how human minds develop as they develop their objects. In this study second generation activity theory will be used to describe beekeepers' activities in shaping their transforming objects from honey hunting and subsistence beekeeping to commercial beekeeping. Engeström (2001) also highlighted that the limitation of first generation activity theory as a unit of analysis is the individual, while second generation activity theory takes the complex interrelationships between the subject and his or her community as a unit of analysis (see Figure 2.2 below).



**Figure 2.2 Second generation activity system**

*(adapted from Engeström, 1987, p.78)*

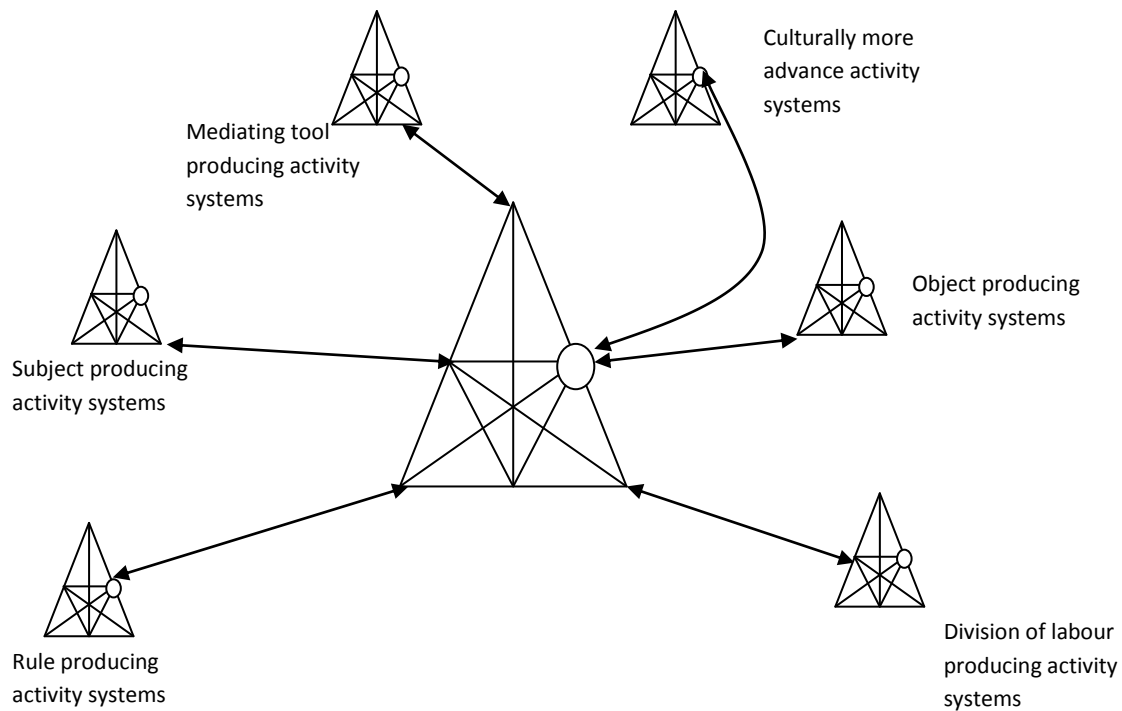
In the context of commercial beekeeping activity systems the elements/components of second generation activity system can be described as shown by Table 2.1 below.

**Table 2.1 Elements of the activity system**

Subjects	Individual or collective beekeepers
Mediating artefact/tools	Conceptual tools such as books, methodology and others and physical tools such as hive, hive tool to mention a few
Rules	Collective rules or individual rules; these include government legislations such as forestry acts & policies, cultural rules and taboos such as bees as ancestors to mention a few. These rules explicitly implicitly have a role to play in the activity system.
Community	These are collectives or individuals such as government department interested in environmental work or neighbours interested in the social well being of beekeepers or beekeepers family members
Division of labour	labour distributed between collectives or between individuals with an activity system such as placement of hives, management of hives, harvesting and marketing of honey
Objects	objects are the motives for individual beekeeper such as commercial beekeeping
Outcome	The resultant of an object in case of beekeeping it might be getting money to pay school fees or for a group of beekeepers such as increasing honey production or marketing.

*Source: Engeström (1987) and Daniels (2001)*

Engeström (2001) highlighted the insensitivity of second generation activity theory towards cultural diversity and external perspectives outside the main system hence the development of the third generation activity system. The third generation cultural historical activity system looks at tools that allow dialogue, multiple perspectives and networks of interacting activity systems (Engeström, 2001; Daniels 2009). In the case of commercial beekeeping this helps to understand the central activity system of beekeepers and how it interacts with neighbouring activity systems such as that of trainers, funding agents, to mention a few (See diagram of two interacting activity system below).



**Figure 2.3 Third generation activity system**

*(adapted from Engeström, 1987)*

Engeström (2001, pp. 136 -7) and Daniels (2008, pp. 123-6) explain that the Cultural Historical Activity Theory can be understood through five principles described below:

- The first principle is that a collective, artefact-mediated and object-oriented activity system, seen in its network of relations to other activity systems is the prime unit of analysis. The understanding of this principle as explained by Engeström (2001) is that the motive for an individual or a group of beekeepers to participate in the practice of commercial beekeeping can be fully understood if interpreted in relation to other activity systems influencing the central commercial beekeeping activity system.
- The second principle is the multi-voicedness of the activity system. The activity system involves a community with multiple points of new traditions and interests. The division of labour in an activity system creates different positions for participants, with multiple layers and strands of history engraved in its artefacts/tools, rules and conventions. The multi-voicedness is multiplied in networks of interacting activity systems. It is a source of trouble and source of innovation, demanding actions of translation and negotiation.

- The third principle is historicity. History needs to be considered not only in terms of the local history of the activity system and its objects, but also in the history of the theoretical ideas and tools that shaped the activity. In the case of commercial beekeeping the history needs to be analysed according to local context of the area being studied and the overall history of the practice in the country and the histories of concepts and procedures that shape the practices (see Chapter 4 and 5).
- The fourth principle is the central role of contradictions as sources of change and development. Contradictions are not the same as surface expressions of tensions, problems, conflicts and breakdowns, but contradictions are historically accumulating structural tensions within and between activity systems (Engeström, 2001; Daniels 2008). Contradictions are summarised as
  - Primary contradictions which are within the elements of the central activity system;
  - Secondary contradictions between elements of the central activity system;
  - Tertiary contradictions between the object/motive of the dominant form of the central activity system and the object/motive of a culturally more advanced form of the central activity system; and
  - Quaternary contradictions are between the central activity system and its neighbouring or related activity system (Engeström, 1987; Daniels, 2008).
- The fifth principle proclaims the possibility of expansive transformation in an activity system. Activity systems move through relatively long cycles of qualitative transformations. As the contradictions of an activity system are aggravated, some individual participants begin to question and deviate from the established norms. In some cases, this escalates into collaborative envisioning and a deliberative collective change effort, which is called expansive transformation, from where the concept of expansive learning was drawn (Engeström, 2001).

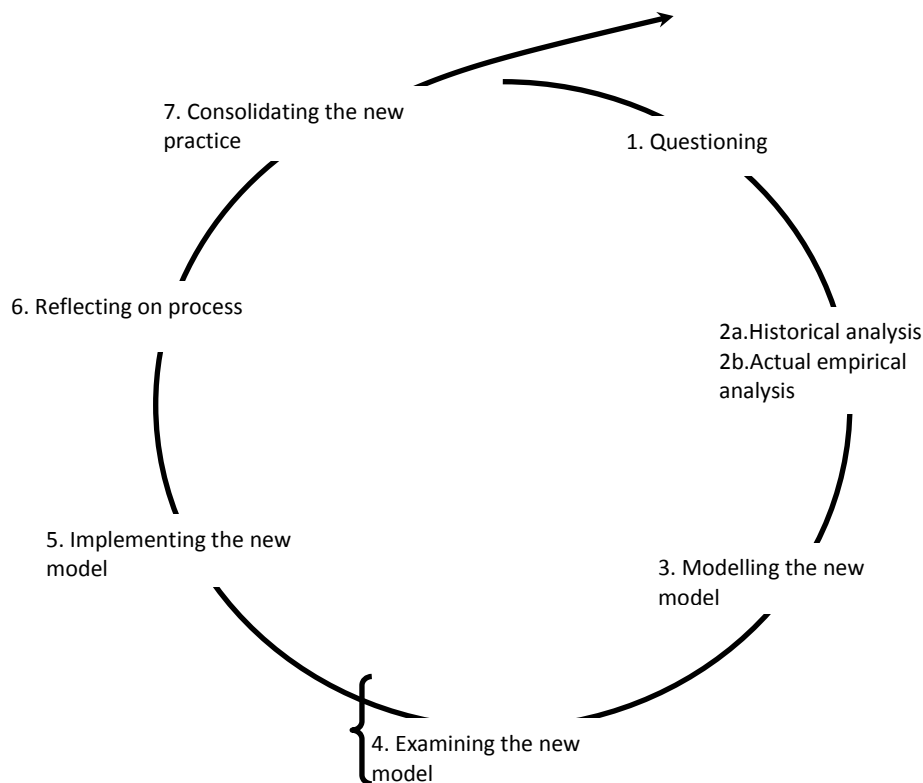
## **2.9 Expansive learning**

Expansive learning involves the creation of new knowledge and new practices for a newly emerging activity; that is learning embedded in and constitutive of qualitative transformation of the entire activity system (Daniels, 2008, p. 126). In developing this model Engeström (2001) draws from Bateson's three levels of learning. Level I refers to conditioning,

acquisition of the responses deemed correct in a given context - for instance, the learning of correct answers in classroom. Level II, which happens simultaneously with level I, is the acquisition of deep-seated rules and patterns of behaviour characteristic to the context itself. This is equated to learning the hidden curriculum of what it means to be a student: how to please the teachers, how to pass exams, how to belong to groups and others. Engeström (2001) notes that sometimes the learning context bombards participants with contradictory minds demands: Learning II creates a double bind. With such pressure from Level II, it is in Learning III that a person or a group begins to radically question the sense and meaning of the context to construct a wider alternative context. In this study of learning commercial beekeeping Level III learning is inevitable if beekeepers have understood the concepts and practices of commercial beekeeping such as pricing, they will start to question its relevancy to their activity. Engeström (1987, pp. 158-9) argues that this form of learning involves reformulation of problems and the creation of new tools for engaging with these problems. This ongoing production of new problem solving tools enables subjects to transform the entire activity system and potentially create or transform and expand the objects of the activity (ibid). It is important to highlight the concept of distributed cognition in transforming the activity system. Daniels (2001, p.70) quoting from Hutchins describes distributed cognition in this way:

All human societies face cognition as tasks that are beyond the capabilities of any individual member. Even the simplest culture contains more information than could be learned by any individual in a life time, so that tasks of learning, remembering, and transmitting cultural knowledge are inevitably distributed. The performance of cognitive tasks that exceed individual abilities is always shaped by a social organisation of distributed cognition. Doing without social organisation of distributed cognition is not an option.

In this study distributed cognition is an important concept which works together with the expansive learning cycle as beekeepers in their social context work in transforming their own objects (see Figure 2.4)



**Figure 2.4 Expansive learning cycle**

*(adapted from Engeström, 2001)*

The expansive learning cycle processes in Figure 2.4 above are explained more detail below and these are:

1. *Questioning* – this action is of questioning, criticising, or rejecting some aspects of the accepted practice and existing wisdom;
2. *Analysing the situation* – this action involves mental, discursive or practical transformation of the situation in order to find out causes or explanatory mechanisms. In discussing, by thinking or in practice. Analysis evokes “why?” questions and explanatory principles. Two types of analysis are:
  - a. *Historical-genetic*: seeks to explain the situation by tracing its origin and evolution using similar techniques to those used in anthropology (e.g. ethnography); and
  - b. *Actual-empirical*: seeks to explain the current problematic situation by constructing a picture of its inner relationship.

3. *Modelling the newly-found explanatory relationship* – this action involves constructing an explicit, simplified model of the new idea that explains and offers a solution to the situation;
4. *Implementing the new model* – making the concrete, by means of practical application such as pilots;
5. *Reflecting on the process and consolidating the practice* – these are the sixth and seventh actions which involve evaluating the new model and the process, and consolidating the new practices into a stable form of activity (Engeström, 1999; Hill, Capper, Ken, Whatman & Wong, 2007).

The expansive transformation of the expansive learning process is accomplished when object and motive of the activity system is reconceptualised to embrace a radically wider horizon of possibilities that existed in the previous mode of the activity (Engeström, 2005). The full cycle of expansive transformation may be understood as a collective journey through the Zone of Proximal Development (ZPD) of the activity (Engeström, 2001, p. 137). Engeström (2001) argues that ZPD is the distance between the present everyday actions of the individuals and the historically new form of the societal that can be collectively generated as a solution to the double bind potentially embedded in the everyday actions. In the context of beekeeping, expansive learning through the collective Zone of Proximal Development can be achieved only when the existing problems such as failure to produce and market honey are solved and beekeepers are producing honey sustainably for commercial purpose. However, the problem of work based learning including that of the expansive learning cycle is that there is little observable teaching and large quantities of learning thus it is difficult to measure (Barab & Plucker, 2002; Bamber & O' Shea, 2009). In this study Wals' (2007) steps of mapping social learning were used to trace the learning processes in the journey through the ZPD of beekeepers (see Section 2.11).

## **2.10 Boundary crossing objects and distributed cognition**

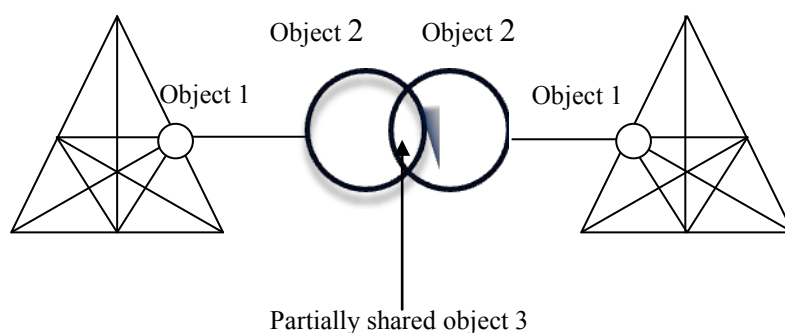
In his description of the unit of analysis during transformation or creation of knowledge and new practices for a newly emerging activity system, Engeström (2008 pp. 13-14) argued that

While one may want to focus, say on an activity system as the prime unit of a study, this unit only gains explanatory power if one makes visible transition and boundaries between the activity system and the actions it generates on the one hand and between



the activity system and the field of interconnected activity systems in which it is located on the other hand.

Engeström (2008) argues for exploration of the concept of boundary crossing to analyse the unfolding of object-oriented cooperative activity systems of several actors. This concept is important in analysing transformation of commercial beekeeping activity systems as they were analysed using the third generation activity theory, where key actors from different activity systems created a shared object as a basis of developing model solutions or tools to model solutions (see Chapter 6). This concept can be represented diagrammatically as shown in Figure 2.5 below, where a minimum of two activity systems partially share an object.



**Figure 2.5 Two interacting activity systems with partially shared object**

*(adapted from Engeström, 2001 & 2008)*

As key actors work together, it is important to highlight the concept of distributed cognition in transforming the activity system. Daniels (2001, p.70) quoting from Hutchins describes distributed cognition as below;

All human societies face cognition as tasks that are beyond the capabilities of any individual member. Even the simplest culture contains more information than could be learned by any individual in a life-time, so that tasks of learning, remembering, and transmitting cultural knowledge are inevitably distributed. The performance of cognitive tasks that exceed individual abilities is always shaped by social organisations of distributed cognition. Doing without social organisation of distributed cognition is not an option.

In this study distributed cognition was an important concept which worked together with the expansive learning cycle as beekeepers, buyers, trainers, funders and other interested parties worked together in the transformation or creation new knowledge or practices of an emerging activity system towards partially shared visions objects and motive.

## 2.11 Social learning in SMMEs

Glasser (2007) argued that there is no common and consistent interpretation of social learning. In his argument he even gave a variety of interpretations of social learning by different people. These interpretations ranged from learning for responding and adaptation in an ecologically stressed environment to responding and adaptation to socio-political changes (Ibid). In the book '*The acoustics of social learning*,' Wals, van der Hoeven and Blanken (2009) described social learning as special learning that contributes to realising the learning society in a more sustainable world.

Some of the characteristics of social learning from Wals *et al* (2009, p. 11) were described as:

- Learning for each other ;
- We learn more in heterogeneous groups than we do in a homogeneous groups;
- It is about creating trust and social cohesion precisely, in order to become more accepting and to make use of the different ways in which people view the world;
- It is about creating „ownership’ with respect to both the learning processes as well as the solutions that are found, which increases the chance that things will actually take place and
- It is about collective meaning making and sense making

From all these views and the understanding of social learning by various authors this study uses social learning as explained by Glasser (2007). Social learning is described as learning by individuals or collectives, as long as they get some form of inputs drawn from others (ibid). This perspective is useful for my study as the cases of learning that will be examined involve a transition from cultural honey harvesting practices and subsistence beekeeping to learning commercial practices. Glasser (2007) also describes how social learning involves observation, imitation, modelling, self instruction, conversation and mentoring among other strategies. The latter is part of the training practices of community support NGOs but little attention has been given to the wider picture of learning and change in the social context of beekeeping in rural community contexts. In learning this phenomenon, SMME owners, producer groups and their members are engaged through observing, imitating their fellow members and trainers when mounting and inspecting hives, harvesting, processing and marketing honey. Through such observation fellow members are supposed to copy these practices and do them in a similar way. In community development it is important for

development facilitators to promote active social learning, in the form of co-learning, because co-learning is said to support positive change by building capacity in three fundamental areas; critical evaluation of existing knowledge and problems, knowledge generation and penetration, and application of this new knowledge to policy and practice in everyday life (ibid).

Wals (2007) also mapped out some activities and sequences for monitoring social learning that might be employed during the learning processes of beekeepers and which can be planned or observed by development facilitators in their own social contexts, when applied to commercial beekeeping and which are as follows:

- *Orientation and exploration* – the identification of key actors in beekeeping and with them identifying key issues of concern to address in a way that connects their prior experience and backgrounds to learning commercial beekeeping, thereby increasing their motivation and sense of purpose;
- *(Self) awareness raising*- through interviews, observations or workshop discussions the facilitator can elicit beekeeper's own frames of reference relevant to issues and challenges in the learning of commercial beekeeping;
- *Deframing or deconstruction*- through group discussions during training workshops, facilitators can observe and take note of beekeepers articulations of the issues, and how these challenge other's frames through a process of exposure to alternative frames and thinking about the practice of commercial beekeeping;
- *Co-creating* – Facilitators can work with beekeepers in constructing and clarifying new or changed ideas together;
- *Applying/ experimenting* – during this period facilitators can encourage collaborative action using the newly co-created frames for commercial beekeeping;
- *Reviewing* – Beekeepers assess the degree to which the co-created issues or challenges on learning commercial beekeeping have been addressed, and also review the changes that have occurred in the way the issues/challenges were originally framed, through a reflective and evaluative process.

Social learning helps to reveal what knowledge, skills and competencies are being learnt as participants learn to cope with new natural, social, political and economic conditions, and as these shape and bring new meaning to people's lives (Wals & van der Leji, 2007, p. 19). If

social learning is facilitated in this way, knowledge, values and action competence (ibid), can potentially develop in commercialising beekeeping products, arising from increased participation of producer groups and individuals' ability to deal with emerging issues and threats i.e. increased reflexivity of beekeepers.

## **2.12 Conclusion**

This chapter described the history and developments of CBNRM as a poverty alleviation strategy, revealing some socio-cultural, political and economic complexities embedded in this strategy. The chapter also revealed that if this strategy is to receive the attention which it deserves practitioners should think of mediating tradeoffs between conservationist and rural people's philosophies to CBNRM. In this chapter CHAT has been described as a theoretical framework to work with in workplaces embedded with socio-historical and cultural backgrounds. And lastly this chapter looked at how Wals' (2007) analytical tool can be used in mapping social learning processes as it compliments CHAT. The next chapter looks at how CHAT and other data generation tools were used in the study.

## **Chapter 3: Methodology and Research techniques**

### **3.1 Introduction**

This chapter discusses the research context and theoretical frameworks informing this study. Key concepts which were used in the study are highlighted and explained. There was also some focus on how the theoretical frameworks provide orientation for data generation and analysis.

In this chapter I also discuss the case study research approach and five data gathering techniques which were used for the study; namely, document reviews, semi-structured interviews, observation workshops and group discussions. For each data generation technique I provide details of approach, sampling and constraints. Issues around ethics, validity and trustworthiness are also discussed and I conclude by discussing reflexivity processes during the research journey.

### **3.2 Case study as a research approach**

The qualitative research conducted for this study is structured through a multiple case study design. Two community contexts where commercialising beekeeping with the assistance of the Makana Meadery in the Eastern Cape Province of South Africa (Hluleka) and the Zimbabwe Farmers Development Trust (ZFDT) in the Manicaland Province of Zimbabwe (Buhera) are the cases under study. These two cases were chosen because they were easily accessible. As noted in Chapter 1, I have a long history of working closely with ZFDT, which influence the case site in Zimbabwe. The second site associated with Makana Meadery, was chosen as it worked closely with RUEESU and is close to Rhodes University Campus.

A case study approach was used in seeking to understand a complex social phenomenon, while retaining the holistic and meaning of real-life events (Yin, 2003). In this case the learning of commercialisation of natural resources products. A multiple case study design is an appropriate approach to research this phenomenon. Stake (2000 & 2005) argues that a collective or multiple case study approach gives a better understanding of common phenomenon and that will allow for better theorising of the phenomenon being researched. This perspective was supported by Yin (2003) who notes that the chances of doing a good case study on a particular concern will be better within a multiple-case design.

As indicated by the research question, the study looked at investigating workplace learning in two cases of transition to learning commercial beekeeping practices in South Africa and Zimbabwe. These two cases have different historical and socio-cultural contexts with regards to commercialising natural resources such as beekeeping (see Chapters 4 and 5). A multiple case study approach was used to deepen the level of analysis and to allow a better theorising of learning commercialisation of a natural resource product in two different social contexts (Stake, 2000& 2005).

### **3.3 Cultural Historical Activity Theory (CHAT)**

As discussed in Section 2.8 CHAT is a theory which emphasises the role of culture and society in developing the human mind and practices (Daniels, 2008). This framework was used for first and second phase data generation, as the first phase data analysis. In the first phase of data generation CHAT was used as a framework to trace and describe the history of honey hunting/subsistence beekeeping to commercial beekeeping using document review. The theory was also used to design frameworks to generate data on the current activities on learning commercial beekeeping in the two cases' activity systems (Hluleka and Buhera) and their neighbouring activity systems through document review, semi-structured interviews and observations schedules, discussed below (see Section 3.4). During this phase, CHAT was also used to guide the first level data analysis to surface tensions and contradictions in learning to commercialise beekeeping in the emerging socio-cultural contexts of Hluleka and Buhera.

I used both the second and third generation activity systems (see Section 2.8) to facilitate modelling solutions in transforming the beekeeping activity system of Hluleka and Buhera. The second generation activity system helped in identifying social/collective elements and their interactions, while the third generation activity system revealed the relationships between beekeeping activity systems and the neighbouring activity systems of trainers, government agents and buyers (Daniels, 2008). I surfaced all levels of contradictions namely; primary, secondary, tertiary and quaternary (see Section 2.8).

### **3.4 Data collection techniques**

As was highlighted by Rakotsoane & Rakotsoane (2006), data collection techniques allow the systematic collection of information about the objects of study and about the setting in which they occur. Data collection needs to be done systematically because if it is done haphazardly,

it is difficult to answer the research question in a conclusive way (ibid). Data collection and analysis was undertaken in two phases. Phase one involved data generation to surface tensions and contradictions which are referred to as mirror data, while phase two was a workshop which used mirror data that was generated in phase one.

### **3.4.1 Phase one data generation**

#### **3.4.1.1 Document review**

Document analysis was an important part of the data collection in the two case studies. Yin (2003) advises that a systematic search for relevant documents was important as a data collection plan (Yin, 2003). During field visits, other than looking at the documents of the Makana Meadery and ZFDT, I also visited local libraries and other reference centres such as relevant government departments and NGOs. The documents which I looked for were policy documents, written reports and minutes of meetings, proposals, progress reports, training materials, formal study or evaluation reports, newspaper articles with information on commercial beekeeping and commercialisation of natural products. These documents helped in understanding the local history of how rural people were practising beekeeping in Hluleka and Buhera. The documents also informed analysis of the cultural historical activity systems of the two areas provided historical depth and perspectives. The documents provided perspective on how learning beekeeping was being mediated and in identifying some double binds in beekeepers' practices (see Chapters 4 and 5).

As argued by Yin (2003), I noted that every document was written for some specific purpose and some specific audience other than those of the case study in question. In this case I acted as a vicarious observer, and noted how the documentary evidence reflected communication among other parties in an attempt to achieve their own objectives, and I had to observe the subjectivity of such meaning of these writers from such information (ibid). See Appendix 1, which shows how I undertook document review.

#### **3.4.1.2 Semi-structured Interviews**

Interviewing is a flexible tool for data collection, enabling multi-sensory channels, verbal, non-verbal, spoken and heard, to be used (Cohen, Manion & Morrison, 2007). There are various types of interviews ranging from natural conversation which uses questions asked verbally to structured questionnaires Gillham (2000). For this study a semi-structured

interview was used. Gillham (2000) argues that semi-structured interviews are flexible with room for probing for more information. The interview questions, which were designed prior to the interviews, only acted as guidelines in generating data as more follow up questions were asked. Two sets of semi-structured questions were developed because of different roles played by various activity systems in learning commercial beekeeping. The first set was for beekeepers that were learning commercial beekeeping and the second set was for stakeholders who were facilitating learning commercial beekeeping (see Appendix 2). Specific organisations and individuals were selected for interviewing using purposive sampling (Patton, 2002; Cohen, Manion & Morrison, 2007), therefore people who were knowledgeable about learning commercial beekeeping were interviewed. Patton (2002) and Cohen, Manion & Morrison (2007) argue that purposive sampling involves selecting information rich samples for the purpose of in-depth analysis that help to illuminate the phenomenon under study – in this case learning processes in social context. Below are the names of organisation, titles of individual persons interviewed and rationale for interviewing them.

### **Hluleka, South Africa**

- Makana Meadery is a private company in Grahamstown, which focuses on making mead and training rural people in beekeeping. The company was contracted by Ntinga Development Agency to train Hluleka beekeepers. The trainer and the director of Makana Meadery were interviewed. The trainer was interviewed because of her close interaction with beekeepers as she facilitated learning commercial beekeeping. On the other hand the director was interviewed because he was responsible for delivering the contractual obligation the company signed with Ntinga O. R Tambo Development Agency.
- Ntinga O. R Tambo Development Agency is an organisation which was contracted by the Department of Environmental Affairs and Tourism (DEAT) to manage funds to train Hluleka people as beekeepers. The development facilitator who was responsible for management of the funds and the contract with Makana Meadery was interviewed because he had firsthand knowledge of the Hluleka beekeeping programme.
- Department of Environmental Affairs and Tourism – is the government department which disbursed funds for the training of beekeepers in Hluleka. The funds were drawn from the South Africa government's Expanded Public Works Programme. In



this case its purpose was to establish natural resource based SMMEs as a strategy to reduce unemployment and conserve the resource base. The DEAT Provincial Manager was interviewed as she was responsible for the monitoring of the beekeeping project.

- Department of Water Affairs and Forestry is the organisation which was responsible for issuing a permit for Hluleka beekeepers to practice beekeeping in the Hluleka nature reserve. The department also promoted beekeeping projects through their Participatory Forestry Management (PFM) strategy. The provincial officer responsible for issuing permits and the PFM strategy was interviewed.
- Department of Agriculture. This department also facilitates implementation of beekeeping projects in the Eastern Cape Province. It works closely with the Eastern Cape Honey Producers Association (ECHOPA). A group interview was conducted with two provincial officers who were responsible for projects.
- ECHOPA, is an association of beekeepers in the Eastern Cape Province, which advocates practising beekeeping as a livelihood strategy. The Chief Executive Officer and the Chairperson of ECHOPA were interviewed.
- Bolotwa beekeepers. Three beekeepers in Bolotwa were interviewed; Bolotwa beekeeping project is one of the successful projects which received training from Makana Meadery.
- Hluleka beekeepers were the focus of the case study. Ten beekeepers were interviewed in Hluleka, five males and five females (see Table 3.2 for an index to these interviews).

### **Buhera, Zimbabwe**

- ZFDT is an organisation funding and training the commercialisation of beekeeping in Zimbabwe and particularly in Buhera. ZFDT also owns and runs a subsidiary private company, Natural Food Processors (NFP), which buys honey. The Acting Director, Factory Assistant and Buyer, and the Finance, Association and Administration officers were interviewed.
- Agriculture Technical and Extension Services (AGRITEX). This is a government department under the Ministry of Agriculture responsible for agricultural extension services. One individual interview with the Apiculturist based at head office, and a

group interview with two field officers based where the study was carried out in Buhera, were conducted.

- Ministry of Small to Medium Enterprise. This ministry is responsible for the facilitation and training of business skills for all small enterprises in Zimbabwe. One group interview was conducted with three provincial officers (one female and two males) in Mutare, the provincial centre for Buhera.
- Buhera beekeepers. Group and individual interviews were held with various beekeepers in specific areas called depots. Members of the following depots were interviewed Mutiusinazita (one male), Mukome (one male), Chapanduka (three males), Murowe (one male), Chanyamukonde (three males) and Dune (two males). A senior beekeeper who started beekeeping in 1942 as well as an 86 year old traditional leader were interviewed separately, as they had a wealth of experience about the practices in the area.
- Buhera Beekeepers Association is an association which represent the beekeepers in Buhera. Three male members from the association committee were interviewed together (see Table 3.3 for the index of this data and Appendix 3 for interview transcripts).

### **3.4.1.3 Observation**

Observation as a research process offers an investigator the opportunity to gather ‘live’ data from naturally occurring situations (Cohen, Manion & Morrison, 2007, p. 397). Observations were made during visits to facilitating organisations, government departments and the homesteads of participating groups and individuals. In Hluleka a one week visit was made, and I stayed in the area when the beekeepers received training from Makana Meadery. In Buhera I had a four day visit where I observed daily routines of beekeeping, hive making, inspection, price negotiation and honey purchase. As was noted by Gillham (2000) during the observation processes I took notes of all aspects of the beekeeping activity systems, I also listened to what people said and sometimes asked question for clarification (Gillham, 2000). To assist with observing and taking notes I used research diaries and a camera to take photographs, together with an observation schedule (see example of research diary and an observation schedule in Appendix 4).

**Table 3.1 Observation Schedule**

What was to be observed	What was written
Mediating tools and signs	What tools were being used, What type of training materials were available; Language in training material; type of beehives; method of harvesting and processing honey and marketing channels; key concepts & approaches being promoted.
Subject	Gender relations, identity, age, language, education level and other experiences.
Object	Mission and vision of groups and participating organisations, values and objectives, purposes of beekeeping practices, actual beekeeping practices.
Community	Different roles of stakeholders.
Rules	Power relations at community level, taboos, procedures.
Division of labour	Roles and responsibilities, gender and age in division of labour.

### 3.4.2 Phase one data management and analysis

Data analysis contains three linked sub-processes, data reduction, data display and conclusion drawing and verification (Miles & Huberman, 1994, p. 10). During data collection, analysis was done through reduction by word for word transcriptions of audio interview records, and indexing of audio records and transcripts. Hluleka, South Africa audio records and transcripts were prefixed SA followed by an acronym of the organisation or area where people interviewed work or stay. Buhera, Zimbabwe audio records and transcripts were prefixed ZW followed by an acronym of the organisations and areas where people were interviewed, worked or lived (see Table 3.3 & 3.4). In Hluleka, South Africa audio interview records with beekeepers are in *isiXhosa* and English as there was an interpreter mediating the language barrier between the researcher and some of the beekeepers, whilst Buhera, Zimbabwe audio interview records are in *Shona* a language spoken by the researcher and Buhera beekeepers (see Appendix 11 CD-ROM). All transcripts are in English (see Appendix 2 & Appendix 11 CD-ROM).

I used CHAT theoretical lenses (see Chapter 2) to aid in analysing the data generated from interviews (see Appendix 2 & Appendix 11 CD-ROM), document reviews (see Appendix 1) and observations recorded in the research diary (see Appendix 4) to develop analytical

memos on tensions and contradictions in learning commercial beekeeping (see Appendix 5 & Appendix 11 CD-ROM).

Table 3.1 below was used as an analytical framework for phase one data analysis process. The details of this level of analyses are provided in Chapters 4 and 5.

**Table 3.2 Phase one data analysis**

Levels of analyses	Research goal	What data was analysed	Method of analysis	Outcome
Level one	To investigate the learning involving transition from wild harvesting and subsistence hives to commercial beekeeping in the two contexts: Hluleka and Buhera	Documents analysis Interviews.	Writing summaries (see Appendix 1) Interview transcripts, Indexing (see Table 3.3 & 3.4)	Insight into the history of activity systems (Subjects, Objects, Mediating tools, Goal, community, Rules and Division of labour) Broader understanding of the history of beekeeping How rural people were learning to commercialise beekeeping (See Chapters 4 and 5)
	To undertake field observations and interviews so as to surface axes of tension and contradictions in social processes of learning to commercialise beekeeping in Hluleka and Buhera community contexts	Interviews document review CHAT field observation schedule	Analytical memos (see Appendix 5 & Appendix 11 CD-ROM) Interview transcripts, Indexing (see Table 3.3 & 3.4).	Further insights into the current activity systems, how people are learning commercialisation of beekeeping. Identify social learning processes. Tension and contradictions within the activity systems which was used as mirror data in phase two data collection (see Chapters 4, 5 and 6)

During phase one data collection the following indexing system was used, in order to improve accessibility of data after collection. I kept data separate for the Hluleka and Buhera areas respectively.

**Table 3.3 Hluleka, South Africa indexing**

Index	Interview	Date recorded
SA AGRIC 070809	Department of Agriculture interview record (audio tape and transcript)	07 August 2009
SA AGRIC MEETING 090709	Department of Agriculture interview record (written)	09 July 2009
SA B1 240709	Bolotwa beekeeper 1 interview record (audio tape)	24 July 2009

	and transcript)	
SA B2 250709	Bolotwa beekeeper 2 interview record (audio tape and transcript)	25 July 2009
SA DEAT 131009	Department of Environment Affairs and Tourism interview record (audio tape and transcript)	13 October 2009
SA DWAF 131009	Department of Water Affairs interview record (audio tape and transcript)	13 October 2009
SA ECHOPA 151009	Eastern Cape Honey Producers Association interview record (written)	15 October 2009
SA H1 230709	Hluleka beekeeper 1 interview record (audio tape and transcript)	23 July 2009
SA H2 230709	Hluleka beekeeper 2 interview record (audio tape and transcript)	23 July 2009
SA H3 230709	Hluleka beekeeper 3 interview record (audio tape and transcript)	23 July 2009
SA H4 230709	Hluleka beekeeper 4 interview record (audio tape and transcript)	23 July 2009
SA H5 230709	Hluleka beekeeper 5 interview record (audio tape and transcript)	23 July 2009
SA H6 230709	Hluleka beekeeper 6 interview record (audio tape and transcript)	23 July 2009
SA H7a Manager 230709	Hluleka Manageress interview record „a’ (audio tape and transcript)	23 July 2009
SA H7b Manager 230709	Hluleka Manageress interview record „b’ (audio tape and transcript)	23 July 2009
SA H8 230709	Hluleka beekeeper 8 interview record (audio tape and transcript)	23 July 2009
SA H9 230709	Hluleka beekeeper 9 interview record (audio tape and transcript)	23 July 2009
SA H10 230709	Hluleka beekeeper10 interview record (audio tape and transcript)	23 July 2009
SA MMD1 250209	Makana Meadery Director interview record (audio tape and transcript)	25 February 2009
SA MMD2 260609	Makana Meadery Director interview record (written)	26 June 2009
SA MMT1a 300609	Makana Meadery Trainer interview record 1a (audio tape)	26 June 2009
SA MMT1b 300609	Makana Meadery Trainer interview record 1b (audio tape)	23 June 2009
SA MMT 300609	Makana Meadery Trainer interview record 1a&b (transcript)	23 June 2009
SA NTINGA 240709	Ntinga OR Tambo Development Agency interview record (audio tape and transcript)	23 July 2009

**Table 3.4 Buhera, Zimbabwe indexing**

<b>Index</b>	<b>Interview</b>	<b>Date</b>
ZW B1 020110	Chapanduka group interview record (audio	02 January 2010

	tape and transcript)	
ZW B2 020110	Chinyamukonde group interview record (audio tape and transcription)	02 January 2010
ZW B3 020110	Dune group interview record (audio tape and transcription report)	02 January 2010
ZW B4 271210	Mr. Mutasa & Mr. Magwere interview record (audio tape and transcription)	02 January 2010
ZW B5 020110	Murowe group interview record (audio tape and transcription)	02 January 2010
ZW B6 020110	Mutiusinazita group interview record (audio tape and transcription)	02 January 2010
ZW AG API 250110	AGRITEX Apiculturist interview record (audio tape and transcription)	25 January 2010
ZW AG EO 020110	AGRITEX Extension Officer interview record (audio tape and transcription)	02 January 2010
ZW ZFDT AA0 250110	ZFDT Associations and Administration Officer interview record (audio tape and transcription)	25 January 2010
ZW ZFDT AD 250110	ZFDT Acting Director interview record (audio tape and transcription)	25 January 2010
ZW ZFDT FA 220110	ZDFT Factory Assistant interview record (audio tape and transcription)	22 January 2010
ZW SMED 210110	Small to Medium Enterprise Development interview record (audio tape and transcription)	02 January 2010

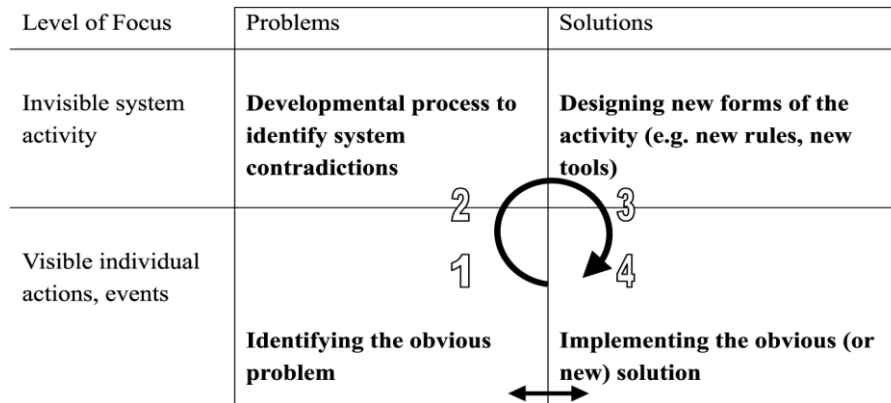
### **3.4.3 Phase two data collection - Intervention Workshop**

As pointed out by Engeström (2008) CHAT is an interventionist theory of learning, innovation and change in conditions of complexity and can be used as a developmental tool. In learning commercial beekeeping an Intervention or Change Laboratory Workshop in the second phase of data collection, is consistent with the CHAT's expansive learning process described in Chapter 2.

#### **3.4.3.1 Intervention Workshop (Change Laboratory Workshop)**

An Intervention Workshop involves developing work practices by the practitioners in a dialogue and debate among themselves, with their management, with their clients and with the interventionist researchers (Engeström, 2007; Daniels, 2008). Engeström (2007) argues that the process is intensive as deep transformations and continuous incremental improvement take place in some successive sessions. In other words what is presented as a challenge does not require a direct „endpoints' answer but the process will require a robust analysis of the problem or challenge to reveal some invisible activities that give rise to the

problem (Engeström, 1999; Hill *et al*, 2007; Mukute, 2010). See the diagram below showing the process of managing the expansive learning cycle.



**Figure 3.1 Managing change using the expansive learning cycle**

*(adapted from Engeström, 1999; Hill et al, 2007)*

Hill *et al* (2007) argue that the circular movement through quadrants 1, 2 and 3 gives a more comprehensive understanding as participants are able to design new forms of the activity and these give rise to specific actions that can be implemented to provide new solutions (quadrant 4). This study was conducted in two Intervention Workshops, one in Hluleka, South Africa and another one in Buhera, Zimbabwe. There were nine participants for the Hluleka workshop. five beekeepers from the Hluleka project, one of which was male, one female beekeeper from Bolotwa, one male from the facilitating organisation Ntinga O.R. Tambo Development Agency, one female participant from the training organisation Makana Meadery and the male interventionist researcher (myself). Participants from the following organisations were invited but they sent apologies, DWAF, DEAT and ECHOPA. There were fifteen people present at the Buhera workshop, eight male beekeepers from participating groups, one male Buhera beekeepers association member, one male traditional leader, one male representative from ZFDT, one male local primary school teacher coordinating a programme training children beekeeping, two AGRITEX extension staff members, a female and male and one male interventionist researcher (myself). Some participants who invited but they gave apologies were the Apiculturist from AGRITEX and an officer from the Ministry of Small to Medium Enterprise. The workshops were held over a period of two consecutive

days, the Hluleka workshop took a total of 10 hours while the Buhera workshop took 12 hours (see programmes of the workshops in Appendix 6).

As described by Engeström (2007; Daniels, 2008) an Intervention Workshop, uses a 3x3 set of surfaces for representing the work activity with participants in the workshop facing the surface and each other. At one end there is mirror surface, and at the other end is the vision, whilst the middle surface is reserved for new ideas and tools (Engeström, 2007; Daniels, 2008). The Intervention Workshop also requires at least one interventionist researcher, and a video projector since videotaped work will be used in subsequent sessions (*ibid*). Hluleka and Buhera Intervention Workshops were held with limited resources, a typical Intervention Workshop set up as described above was resembled based on available resources. The Intervention Workshop for Hluleka was held at Hilltop Lodge in an urban setting in Mthatha town where there was limited space to set up an appropriate seating arrangement and video camera. Two instead of three flip board stands were used to set up the 3x3 set of surfaces. There was one interventionist researcher. In Buhera the workshop was held at Chapanduka primary school in a rural setting, where the limitations were the lack of electrical power to recharge the video camera battery, nor was there a flip chart stand available to provide the 3x3 set of surfaces and there was also one interventionist researcher. These limitations were overcome by using walls to provide extra space for the 3x3 set of surfaces, backing up a video tape recorder with an audio tape recorder and selecting a rapporteur from amongst the participants to assist the interventionist researcher with data capturing and presentation of important points before proceeding into the next session.

An Intervention Workshop draws on ethnographic data from the activity setting in which it is conducted, where critical incidents, troubles and problems, technically referred to as tensions and contradictions in the work practice are recorded and brought into the intervention session as first stimuli, also referred to mirror data (Engeström, 2008). The mirror material is used to stimulate involvement, analysis and collaborative design efforts among participants (*ibid*). During the Intervention Workshops in Hluleka and Buhera mirror data came from the first phase analysis of interviews, document reviews, and observation notes as described in Section 3.4.1 above (reported in Chapters 5, 6 and 7). The workshop participants first presented their histories, backgrounds and current problems in learning commercial beekeeping within their social contexts. I, as the interventionist researcher, gave the feedback report on critical incidents, troubles and problems drawn from interviews, observations and



documents reviews to participants to comment on and validate the findings. Presentations by participants and me, the interventionist researcher, were combined to produce lists of problems, technically referred to as tensions and contradictions. The tensions and contradictions in learning commercial beekeeping from Hluleka were further analysed, to come up with three clusters of problems (see Section 6.2.3), whilst problems from Buhera were prioritised and three were selected (see Section 6.3.3). These processes were part of the second stage of the expansive learning cycle which is referred to as *„Analysis of the situation’* (see Section 2.9), that allowed participants to understand the socio-historical origins of their problems and their current situation.

To mediate modelling of new solutions and/or development of conceptual tools for problem solving, the three clusters of problems from Hluleka and three prioritised problem from Buhera were used as the first stimuli (see section 6.2.3 and 6.3.2). In the third stage of the expansive learning cycle *„modelling new solutions’* a set of problem solving questions (see Appendix 7, Box 3.1, Chapter 6) were introduced as second stimuli during, as described in Section 2.9. Although in many instances the activity system triangle is used as the second stimuli in the two cases, I felt that the triangle was not going to be understood by the participants therefore justifying the use of a tool which was easier to explain and could be understood easily by participants, this was also noted by Mukute (2010). Daniels (2008) quoting from Engeström highlighted that other conceptual models apart from the triangle were often used as second stimuli. The second stimuli was also important as was stated by Vygotsky (1978, pp. 74-5) that

By using this approach, we do not limit ourselves to the usual method of offering the subjects simple stimuli to which we expect a direct response. Rather, we simultaneously offer a *second series of stimuli* that have a special function. In this way, we are able to study the *process of accomplishing a task by the aid of specific auxiliary means*; thus we are also able to discover the inner structure and development of higher psychological processes.

The problem solving questions provided acted as the second stimuli in these workshops (see Box 3.1 below). These problem solving questions provided another level of understanding of the history, but for specific problems rather than problems being treated as surface tensions and conflicts which could be solved with a direct response, as highlighted by Figure 3.1 above. See Box 3.1 for problem solving questions which were used together with the expansive learning cycle for Hluleka Intervention Workshop (see Section 6.2.4).

### **Box 3.1 Questions guiding modelling solutions**

1. What is the objective of training commercial beekeeping?
2. Who should be trained in commercial beekeeping?
3. What should be selected?
4. Why is it that rural people are not practising commercial beekeeping?
5. What is the history of not practising commercial beekeeping?
6. What are the effects of practising commercial beekeeping?
7. How can we make sure communities can practise commercial beekeeping?
8. What strategies can we use for communities to practise commercial beekeeping?

I would also want to highlight that due to the scope of this research only four of the seven processes of the expansive learning cycle highlighted in Figure 2.4.were achieved. These were questioning, analysis (historical and empirical), modelling of the new solution, and the examining of the solution. The other three; namely, implementing the new model solution, reflection on the process and consolidation of new practice were not done, however, a plan of action for participants to carry on with these processes were produced in both two cases.

#### **3.4.3.2 Focus group discussions**

Focus groups are contrived settings, bringing together a specifically chosen sector of the population to discuss a particular given theme or topic, where interaction with the group leads to collective rather than an individual views (Cohen, Manion & Morrison, 2007, p. 376). During Intervention Workshops focus group discussions were used for two reasons. The first reason was to give those who did not contribute during plenary sessions a chance to talk. The focus groups also brought together participants at the same level such as beekeepers or extension officers, to discuss the history of learning commercial beekeeping and associated issues. Therefore these types of groups served to level the power gradient. On the other hand focus group discussions brought together people of varied backgrounds and experiences such as buyers, beekeepers and trainers into one group to discuss a particular issue. Both groups used the concept of distributed cognition (Daniels, 2001), as groups with mixed participants modelled a new solution or mediating tool associated with a particular problem and challenge, and these new ideas were peer reviewed (re-examined) when presentations were made to the bigger group in plenary. A detailed discussion on what transpired in the Intervention Workshops is reported in Chapter 6.

#### **3.4.4 Phase two data management and analysis**

Just as in phase one data management and analysis, the same process of data reduction through word for word transcription of video records of the intervention workshop was done. I reduced audio and video records of the Intervention Workshops into word for word transcriptions, capturing turns of speech using a # numbering system to keep the flow of the dialogues intact with discussion exchanges numbered chronologically (see Appendix 8 & Appendix 11 CD-ROM). I used Wals (2007) analytical lenses to develop analytical memos mapping social learning processes in Intervention Workshops (see Appendix 9 & Appendix 11 CD-ROM) As highlighted by Miles and Hubermang (1994), it was difficult to separate the two steps of data management and analysis as the two processes overlap. Research records such as video records, transcripts and Intervention Workshop summary reports were systematically indexed (see Sections 3.4.4.1 & 3.4.4.2) and kept as a basis for anyone to audit and be able to certify that the findings and conclusions are justified.

I analysed deliberation of the second data generation using a social learning analytical tool developed by Wals (2007). Wals (2007) presented six steps of monitoring social learning processes namely *orientation and exploration, (self) awareness raising, deframing or deconstruction, co-creating, applying/experimenting and reviewing*. He argues that these steps can be used to analyse learning in a social context (ibid). And finally, I used Bassey's (1999) recommendation of using analytical statements to pull together key insights gained from this research that are relevant to the research question. Table 3.5 below shows the details of how phase two data analysis was done.

**Table 3.5 Phase two data analysis**

<b>Level s of analysis</b>	<b>Research goal</b>	<b>What needs to be analysed</b>	<b>How to conduct analysis</b>	<b>Expected outcome</b>
Level two	Report back workshop to develop possible strategies for fostering learning to commercialise beekeeping in Hluleka and Buhera. (Phase two intervention workshop and tracking of expansive learning interactions).	Interactions in the plenary and focus group discussions Observations from video tapes	Writing transcripts (Appendix 8) and indexing (Section 3.4.4.1 & 3.4.4.2), Analytical memos (See appendix 9 & Appendix 11 CD-ROM)	Transformation of activity system and its elements, objects and possible outcome. Social learning during transformation of the activity systems Identify possible strategies to strengthen learning in social context of transition to commercial beekeeping (see Chapter 6)

The following data indexing system was used during the second data collection for the two case sites.

#### **3.4.4.1 Hluleka, South Africa transcriptions**

A two day Intervention Workshop for Hluleka was held at Hilltop Lodge in Mthatha town, where six video files were used to capture the proceedings. Transcripts of deliberations from the Intervention Workshop have the same name as the video files from where they were derived, for example **IW Hluleka 1** to **IW Hluleka 6** (see Appendix 11 CD-ROM). The indexing used means that video file Intervention Workshop Hluleka 1 has a transcript with the same file name (see Appendix 11 CD-ROM). Please note that the video file for the Interventions Workshop in Hluleka are recorded in *isiXhosa* and English as there was an interpreter to mediate the language barrier between the interventionist researcher and participants, however all transcripts are in English.

#### **3.4.4.2 Buhera, Zimbabwean transcriptions**

In Buhera, the Intervention Workshop was held in a rural area, where there was no electricity to recharge the battery for the video tape recorder therefore an audio recorder was on reserve. In all transcriptions I indicated respective audio or video files from where the transcript was derived, for example **IW Buhera transcript 1 from file: IW Buhera VT1\_030310rec1**. This means that the Intervention Workshop Buhera transcript 1 was recorded on Intervention Workshop Buhera video file 1 on the 3<sup>rd</sup> of March 2010. For **IW Buhera transcripts 3 and 4**, audio and video files were recorded simultaneously. I indicated the file name and specific time when the transcript was recorded on both the audio and video files, for example **Prioritization of challenges**, this is on file: **IW Buhera VT2\_030310rec3&4 time: 0-37min 12 sec and also on file: IW Buhera AT2\_030310rec3, time: 0 -39 min 12 sec**. This means that a transcript with Prioritization of challenges is on Intervention Workshop Buhera Video file 2 recorded on the 3<sup>rd</sup> of March 2010 from zero minutes to 37minutes 12 seconds and is also on Intervention Workshop Buhera Audio file 2 from zero minutes to 39 minutes 12 seconds. Please note that video and audio files for the Buhera Intervention Workshop are in *Shona*, a language spoke in Buhera, however all transcripts were translated to English (see Appendix 11 CD-ROM).

### 3.5 Validity and Reliability

Validity in qualitative research is measured by honesty, depth, richness and scope of the data generated, the participants approached, the extent of triangulation and the objectivity or reflexivity of the researcher (Cohen, Manion & Morrison, 2007). As highlighted by Cohen, Manion and Morrison (2007), validity can only be addressed to a certain degree as qualitative researchers are part of the world in which they research. Researchers have to take account of their subjectivity hence my emphasis on reflexivity in Section 3.7 below. In this study the trustworthiness was enhanced through triangulation of data and ensuring reliability. Triangulation was achieved through reviewing of documents from different sources such as the Mutare museum in Zimbabwe, government departments such as Forestry, Environment and Agriculture in both South Africa and Zimbabwe, and documents lodged in historical libraries such as the Cory Library at Rhodes University (see Appendix 1). During interviews, triangulation was also ensured through interviewing a diverse range of people from government departments, participating beekeepers and beekeeping groups and facilitating organisations (see Section 3.4.1.2). Observations and note taking was also used as another data collection method to triangulate perspectives and news obtained in interviews and documents. This form of triangulation is proposed by Cohen, Manion and Morrison (2007), who highlighted that triangulation in social research helps to map out, or explain fully, the richness and complexity of human behaviour by studying it from more than one standpoint.

Reliability was ensured through member checking of all interview transcripts and making changes after comments were made. For the beekeepers no interview transcripts were member checked before the second phase of data analysis, but their views were presented during the Intervention Workshops and their comments were incorporated.

To engage critically with my subjectivity during the research process I was continuously questioned by my colleagues, lecturers and supervisors during weekly research deliberations normally referred to as the *„Friday Meetings‘* which were held in the Environmental Education and Sustainability Unit at Rhodes University. I presented various aspects of the research to different audiences to obtain feedback. These processes ensured that my data collection and interpretations were as close as possible to what was happening in the environment where the data was collected, although it did not mean uniformity (ibid).

### **3.6 Ethics**

As this study is qualitative I observed the ethical practices of qualitative research. As argued by Bassey (1999), research ethics have to consider respect for democracy, respect for truth and respect for persons. I met these ethical requirements through sending letters to seek consent to participating organisations before carrying out data collection. In the Hluleka case study in South Africa these organisations were the Makana Meadery, the Department of Agriculture, ECHOPA, Ntinga O.R Tambo Development Agency, DWAF and DEAT (see Appendix 10 & Appendix 11 CD-ROM) In the Buhera case study in Zimbabwe these were ZFDT, AGRITEX, and Ministry of Small to Medium Enterprise (see Appendix 10 & Appendix 11 CD-ROM). In cases where interviews were conducted with individuals in these organisations or with beekeepers verbal consent was continuously sought and participants were assured that they could withdraw from the research should they so wish. Pseudo-names were used in the reports to protect the privacy of individual persons and organisations, although no-one asked for it.

### **3.7 Reflexivity**

To further strengthen trustworthiness in the research, I worked explicitly with reflexivity. Reflexivity in the context of carrying out research is to acknowledge the subjectivity of the researcher. It helped me to take account of my history of the study and how this shaped my interest. This also helped me to understand how participants behaved in a particular way related to their histories (Cohen, Manion & Morrison, 2007). There were therefore a number of moments when I became reflexive during the research; the following were some of those key moments. This reflexive process involved methodological and field based reflexivity.

#### **3.7.1 Methodological reflexivity**

Methodological reflexivity came to the fore between the period of proposal development and the first phase of data generation. When I developed my research proposal I intended to use second generation cultural historical activity theory (see Section 2.8) to surface tensions and contradictions in learning commercial beekeeping. These tensions and contradictions were going to be presented in the Change Laboratory/Intervention workshop as mirror data. However, as I deliberated with beekeepers and engaged with the data, I realised that some of the tensions and contradictions were being influenced by neighbouring activity systems to the activity system of the beekeepers. I therefore had to use both the second and third generation

cultural historical activity system. As indicated in Chapter 2, this involved different levels within the same theoretical framework.

### **3.7.2 Field based reflexivity**

My engagement with field based reflexivity was in the context Bourdieu and Wacquant (1992) describe as to how engagement with the field influences the research findings. Bourdieu and Wacquant (1992, p.107) argue that;

It is the field which is primary and must be the focus of the research operations. This does not imply that individuals are mere “illusions,” that they do not exist: they exist as *agents* – and do not as biological individuals, actors, or subjects – who are socially constituted as active and acting in the field under consideration by the fact that they possess the necessary properties to be effective, to produce effects, in this field. And it is knowledge of the field in which they evolve that allows us best to grasp the roots of their singularity, their *point of view* or position (in a field) from which their particular vision of the world (and of the field itself is constructed).

Field based reflexivity in this study resonates with the quote above, as the research was influenced and informed by the context in which it was carried out, namely CBNRM and poverty in southern African. It is projected that in southern Africa natural resources degradation may be further exacerbated, thus threatening natural resources dependent livelihoods of the poor, particularly in light of climate change impacts (Lotz-Sisitka *et al*, 2006). I worked with situated learning theories [CHAT after Engeström (1987) and Social learning after Wals (2007)] to inform my study on how rural poor people are learning to adapt to the risk of natural resources depletion in face of climate change and ongoing degradation. My deliberations and engagements with how these theories were used by other researchers such as Downsborough (2007), Pesanayi (2008) and Mukute (2010) also shaped the way I used these theories in designing research tools and using them to gather data through document reviews, semi-structured interviews, observations and field notes, and Intervention Workshops.

Field based reflexivity was also used to inform consent seeking for the study. Consent to carry out research was sought from organisations and individuals three months before data collection. However, when I started data collection, the situation in the field had changed.

One organisation had suspended its Director and the board of members were taking turns to fill the position of Acting Director. I had to continuously seek consent and renegotiate terms of the study whenever a new Acting Director assumed office. I learned from the process that consent is not a once off activity, but has to be continuously requested, as human behaviour is unpredictable. Throughout the research and during the Intervention Workshop I had to ask for consent to record audio and video tapes.

### **3.8 Conclusions**

This chapter explains the research processes used and it justifies the theoretical frameworks and research techniques. The study used multiple case study design within a social context of community based natural resources management in southern Africa. The chapter also describes how the data was generated, managed and analysed using the theoretical lenses alluded to in Chapter 2. This chapter also explains the two phases of this study and how the research techniques and theoretical frameworks were used to answer to the research goals and question. The following three chapters present and analyse data.



# Chapter 4: Development in the transition to learning commercial beekeeping in Case 1 - Hluleka, Eastern Cape South Africa

## 4.1 Introduction- What is a beekeeping activity system?

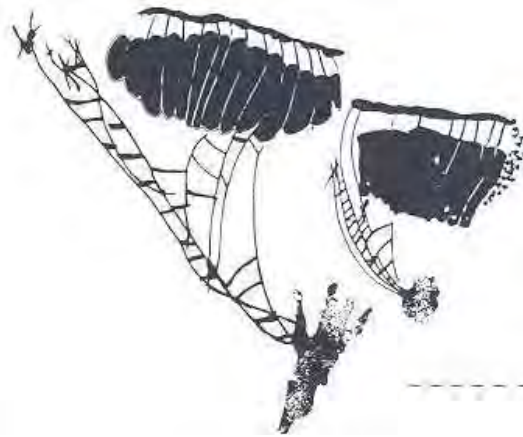
In this chapter I highlight key aspects of the history of beekeeping in South Africa, starting with the period before colonisation and into contemporary South Africa. Case study evidence is then presented on how the transition to commercial beekeeping developed in Hluleka. This chapter also describes some of the social learning processes involved, and the report on surfaced tensions and contradictions in learning commercial beekeeping.

The case is documented as an activity system using a second generation activity system framework as described by Engeström (2001). Here a typical beekeeping activity system consists of *Subjects, Mediating tools, Objects, Outcome, Rules, Community* and *Division of labour*. The **Subjects** are the beekeepers either as individuals or as a collective who are involved in the learning of commercial beekeeping. The subjects have an **Object** - a purpose as to why they are learning beekeeping such as to meet household income and food requirements. Where the beekeepers participate in the commercial beekeeping intervention, there will be an **Outcome** such as achieving sustained natural resource base and societal development. In order for beekeepers to learn commercial beekeeping and to achieve their objects and outcomes there are **mediating tools/artefacts**. These are either conceptual or methodological processes such as the knowledge they have, the experience of fellow beekeepers or a beekeeping training manual to mention a few. On the other hand beekeepers might also use physical tools or models such as bee hives, smokers and catch boxes. It is, however, important to note here that beekeepers exist in a society with collective or individual **Rules** which govern their practices. Such rules are informal, such as taboos, norms or values or natural, such as climatic conditions or they are formal such as the guidelines of working with bees or government legislation which governs beekeeping practices. Behaviour patterns and availability of pollination plants are also important „rules’ governing beekeeping practices. Subjects also interact in a society, referred to as a **Community**. A community is either a collective or individuals with an interest in the object of the activity system. A collective of the community are the stakeholders who are interested in commercial

beekeeping such as government departments and non-governmental organisations, while individuals are those whose lives are affected by the practice but are not beekeepers. **Division of labour** in a beekeeping activity system is between a collective or between individual beekeepers. Commercial beekeeping involves a number of work practices and roles, and these include capturing bees, inspecting hives, and harvesting and marketing honey. These roles and duties are horizontally or vertically allocated to individual beekeepers or a collective of beekeepers, through division of labour. Described above is a typical beekeeping activity system and its elements. This terminology from Cultural Historical Activity Theory is used consistently throughout the chapter all the mediating tools, the rules, the subjects, community and object have a history, and are embedded in cultural practices.

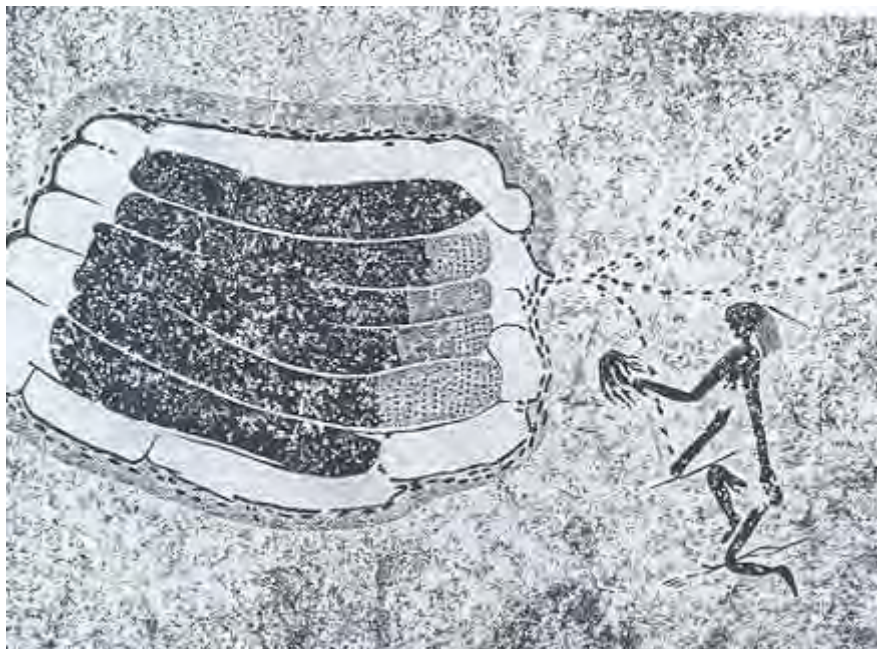
## **4.2 Early history of human-bee interactions activity system in South Africa**

I accessed limited literature about the early history of beekeeping or early interactions of black South Africans with bees, except for the San people. Eva Crane (1999) quoting from Anderson, who narrated the early interaction of San people with bees, described how the Portuguese sailor Vasco da Gamma's men, in November 1497 captured a man 'small of body' who was 'going about gathering honey on the moor' in St Helena Bay 200km north of the Cape. Evidence of *early* interactions of San people with bees was called 'honey hunting', and was also depicted through rock paintings in a number of sites in southern Africa such as Matopos hills in Zimbabwe; and Anchor Shelter and Eland Cave in the Drakensberg mountains in South Africa (Crane, 1999). The Figures 4.1 and 4.2 below show some of the mediating artefacts San people used.



**Figure 4.1 Rock painting of *A. Mellifera* nest seen end-on with honey hunters' ladder in position, Anchor Shelter, KwaZulu Natal, Drakensberg South Africa**

*(adopted from Crane 1999, p. 50)*



**Figure 4.2 Rock painting showing honey hunter using smoke, Toghwana dam, Zimbabwe**

*(adopted from Crane, 1999, p. 58)*

As indicated by the figures above there were several bee hunting techniques which were being learned by the San people in their own social contexts as they were interacting with nature and co-evolving with it. San people used mediating artefacts such as ladders, and smokers to harvest honey. Some other artefacts that were noted by other writers include trekking bees using droppings, tying a string to a bee and the use of certain species of birds such as the honey guide to find a wild bee nest (Crane, 1999; Marchand & Marchand-Mayne,

2003). Some artefacts such as trekking were useful to San people because the bees they knew were in the wild, not domesticated and hence they needed to be trekked. Such artefacts co-evolved with San people's culture. Crane (1999, p.56) also noted the use of other tools for honey hunting which included ropes made from fibre from the baobab tree, and stones encased in leather attached to one end of the rope. A rope was thrown over a branch and the stone lowered to the ground, a doubled rope was used as a ladder and gourd flask for collecting honey to mention a few. A number of writers highlight early interactions of the San people and bees as they (San people) were seen with bags of honey and other food – reflective of their tradition of hunting and gathering (Fox & O' Donoghue, 2009). Within this early history of honey hunting, bees were considered to be an important source of food, as a good season of honey production would not coincide with famine and honey was tastier than wild fruits (Crane, 1999). People learned these means of survival and passed them on to the next generations, in such a way that some cultures in southern African including the San in the Kalahari in Botswana used the Honey hunter's prayer and dance song to depict these cultural practices (Crane, 1999; Marchand & Marchand-Mayne, 2003). See below;

Hunter's Prayer  
I am weak from thirst and hunger.  
Abo Itse,\* let me live...  
Let me find sweet roots and honey,  
let me come upon a pool.  
Let me eat and drink. Ho Itse\*,  
give me that which must have.  
\*Great father

Hunter's Dance  
Look! The people carry honey,  
also flesh. They bring it home  
to the women who are hungry,  
that the women may have food

Adopted from Crane, (1999, p.53).

The arrival of the pastoralist Bantu-speaking people (the Khoi) may have influenced how the San people learnt the hunting and gathering life style. Some writers highlighted an early trade of honey between the San and the Khoi people as early as before the first Europeans came to Africa. The San were reported to have used bags made from antelope skin to carry honey across a pass over the Outenique<sup>1</sup> mountains, to barter it with other goods from the Khoi

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<sup>1</sup> Khoi word meaning a man loaded with honey or bags of the honey people

people (Peagam as cited in Crane, 1999; Marchand & Marchand-Mayne, 2003). As trade continued, there was increased competition for honey hunting, hence a double bind in practice as demand could not meet supply. Some rudimentary early beekeeping could have been learned by the San people and Tongas who lived North of Zululand by tending and marking natural bee nest/hives (F. Gomna, personal communication, October 15, 2009; Crane, 1999), although some people still considered these „looking after’ practices to be honey hunting. It is also important to note that this practice developed a sense of responsibility for the hunter as they would block holes opened while harvesting to a bee flight size with the assumption that the harvester or owner would then harvest the same hive again (ibid). Even though bee tending and marking hive sites to claim ownership had been widely acceptable amongst both San and Khoi people, there were some recorded tensions as some people would rob hives. Crane (1999) highlighted the use of different types of penalties depending on the tribe which had robbed a marked hive. If robbing was done by a San person, it was punishable by death, however, if it had been done by a Khoi person the San man would carry off the first cow or sheep he came to as he believed that his hives were as important as the value the owner attached to his livestock (Marchand & Marchand-Mayne, 2003). The Khoi people were believed to be honey robbers, as Crane (1999) highlighted that, this form of revenge was acceptable to them as livestock owners.

It is important to note that as the San people were continuously driven into the drier parts of the Kalahari, the learning process could have been disturbed as Crane (1999) highlighted that no early beekeeping history had been reported in the region south of the Limpopo River for both the Africans and Europeans until the late 1800’s. However some literature argues that due to intermarriages and cultural exchange between the San and Khoi people, the San left a cultural mark of their hunting and gathering way of life in the Khoisan people (now some referred to as isiXhosa). The practice of honey hunting and brewing of the honey alcoholic drink - *iQhilika* has continued to this day (Crane, 1999; Cambray, 2005). During data collection and review of beekeeping practices in the Eastern Cape Province, I came across a certain cultural belief which might have influenced the further development of learning beekeeping. There were various beliefs among the isiXhosa culture about bees – some people considered bees to be their relatives, and some considered them to be ancestors, therefore if a swarm of bees came to their homestead they would brew *umqombothi*, slaughter a cow or a sheep and conduct a cultural ceremony to appease the ancestors (bees). The ancestors were

supposed to leave soon afterwards, as they were not supposed to stay at the homesteads but must live in the wild (G. Cambray, personal communication, June 26, 2009 & S. Tiyise, personal communication, June 30, 2009). This cultural belief slowed the learning of beekeeping practices in the *isiXhosa* culture, as ancestors (bees) were not supposed to be boxed and stay at or near to the homesteads – hence a double bind in the practice of domesticating bees. I will discuss this in detail under Section 4.7.

The arrival of the Europeans in South Africa in the sixteenth and the seventeenth centuries changed the approach to the exploitation of natural resources, and to the learning of beekeeping (Willis, 2004). Fabricius (2004) reported a two pronged approach to natural resources use – the commercialisation approach used by the Europeans as they endeavoured to accumulate as much money as possible from the natural resources available, irrespective of how sustainable the harvesting methods were. While on the other hand the Africans' approach of subsistence harvesting was to only meet household food requirements – that is why it might have been considered by some writers as sustainable use (ibid).

In November 1878 early beekeeping activities were observed in Port Elizabeth practised by the Europeans, the Dutch subsistence farmers called the „*Boers*’ (Crane, 1999). There is belief that this practice could have been brought from Europe as the technology of the Langstroth hives was being used was developed there (Crane, 1999). However the minority group of white commercial farmers learned and further adapted it to suit local conditions, as contemporary South Africa's beekeeping practice is closely linked to the Langstroth hives (Timmermans, 2005). The beekeeping industry in South Africa was considered to be informal despite all beekeepers being commercial; this arose from the fact that beekeepers did not own the crops/plantations on which their bees gathered honey. Therefore beekeepers clandestinely negotiated with individual land owners for apiaries; it was therefore considered a secrecy industry with a lot of competition and informal alliances among land owners, beekeepers and buyers (ibid). This was also confirmed by the Chairman of Eastern Cape Beekeepers Association (ECHOPA) when he stated that beekeeping had always been viewed as a white people's business in South Africa as no black people had the opportunity to penetrate and learn the practice in an industry where there are a lot of barriers (F. Gomna, personal communication, October 15, 2009). This may also be due to the failure to provide of accredited beekeeping training in South Africa. According to the South African Qualifications Authority (SAQA) beekeeping is a recognised national occupation, listed

occupational framework as number 1203: Insect farmer/Farm manager (skills level 5), with the job title Apiarist/beekeeper. However the SAQA website shows that there are no organisations which provide skills training in this area even though it is registered as an elective for a National Diploma, Animal production (SAQA, homepage, 2010).

Even if beekeeping has always been considered to be a white persons' industry in South Africa, it is important to look at the history which might have prevented its learning and development amongst the black South African beyond the barriers I have mentioned above. As was noted some earlier early commercialisations of natural resources were unsustainable and efforts to curb these unsustainable practices were put in place as early as the 1900s when the foreign ministers representing African colonial powers – Britain, France, Belgium, Italy, Portugal and Spain gathered in London to sign the world's first international conservation treaty - the Convention for Preservation of Animals (Willis, 2004). This convention and the repressive legislations, such as the Land, Nature and Forestry Acts that followed thereafter might have caused another double bind in the practice of harvesting natural resources and beekeeping. Fabricius (2004), quoting from Crush, highlighted that the repressive legislation faced strong resistance from black people as they felt that they were being alienated from their livelihood sources such as subsistence honey hunting. Highlighting all of the conflicts which might have been caused by these pieces of legislation is beyond the scope of this research, but this chapter highlights how the Transkei Forestry Act of 1969 and its related legislation impacted beekeeping learning processes in the former Transkei region, as this is a former homeland area, and the region where Hluleka site is located.

Trade and marketing of natural resources products were controlled by the state as it was mandated by Transkei Forestry Act of 1969. The Act's Section 2 (1) gave the minister a mandate to direct and control selling or disposal and trade or business in forest produce (Government of Transkei [GoT], 1969). The same legislation also regulated entry into the Government forest and activities such as hunting, fishing, clearing cultivation, collection of honey and bee-farming (beekeeping) to mention a few (ibid). Although the Forestry Act gave the minister some regulatory powers to allow people to trade and use forestry products, including beekeeping, there were some legislation that conflicted with it. The Transkei Forest Act of 1969 Section 16 (1) stated that no persons, without authorization were allowed in or on any government forests to rob or attempt to rob any beehive or disturb or remove any swarm of bees or farm bees (GoT, 1969 p.43). On the other hand the Transkei Nature

Conservation Act of 1971, which regulated issuing of permits to use and trade natural resources, limited permits to the following activities, wild hunting, angling, netting and catching of inland water animals (GoT, 1971), and there was no mention whatsoever of honey hunting or beekeeping permits. These two sets of legislation showed how the state's intervention alienated black people and the possibilities for learning bee behaviour and beekeeping. However such an approach by the state came at a price – as people responded negatively developing new techniques of honey hunting, which were more destructive than earlier practices.

During my data collection there was a mention of how boys and girls or possibly young men and women worked together in the process of honey hunting. Girls would identify some natural beehives in the process of fetching firewood which was one of the few activities local people were allowed to do in government forestry areas, named „*Theza*’ and they would inform boys or young men who followed up and harvested these hives. This practice was also reported in Timmermans’ (2005) report about beekeeping and honey production in South Africa, as a practice which still exists in certain parts of Kwazulu-Natal. New mediating tools of honey hunting which included evading state security had been learned and mastered by local people. The practice, however, brought a new challenge of bush-fires. During review of Transkei Agriculture and Forestry Annual reports, bush-fires were reported to be one of the main challenges to nature conservation activities during the period from 1966 to 1974, and most of the causes were linked to honey hunting or robbing (GoT, Department of Agriculture and Forestry, 1974)<sup>2</sup>. The practice of learning honey hunting by boys and young men had therefore evolved with the state rules, the repressive legislation which prohibited use and harvesting of natural resources products, such as honey hunting. The honey hunters would use their axes to quickly open the natural/wild hives, smoke/burn the bees and take the honey before the state security could be informed. Without putting out the fire they would quickly leave – hence this practice leads to bush fires. Timmermans (2005) also confirmed the extensiveness of these practices, as he highlighted that the wild hives that were robbed, were also located within privately owned forests and probably farms and this caused a number of forests fires. Another double bind to this practice was that the mediating artefact of using fire to harvest/rob honey was unsustainable as it killed wild bee colonies. The honey hunting practice of evading state security or the so called bee robbing might have continued to haunt

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<sup>2</sup> Same issue is highlighted in Government of Transkei, Department of Agriculture reports from 1975 to 1980.



Transkei and of late the new South Africa as beekeepers continue to face the challenge of theft or robbery in their apiaries. In the following Section I highlight how learning commercial beekeeping was influenced in the post apartheid era in South Africa.

### **4.3 Developments towards learning commercial beekeeping activity systems in rural South Africa**

In 1994, South Africa was transformed into a new democratic state as this marked the end to the apartheid era. Just as in any other state which gained independence earlier in Africa; new policies had to be developed. These policies were centred on among other things redistribution of wealth, including natural resource utilisation and provision of opportunities for learning beekeeping especially amongst the formerly disadvantaged groups – the black South Africans (South Africa. Department of Water Affairs and Forestry, n.d.). Some of the policies which were developed that are of interest to this research include:

- Development Facilitation Act 67 of 1995; this policy promoted development projects related to land and the formulation of land development objectives. It also provided finances and subsidies to new occupants of land earmarked for agriculture and tourism (Fabricius, Matsiliza & Sistika, 2003. p 9).
- The Growth, Employment And Redistribution Policy (GEAR), recognised that regional economic development was essential for achieving social upliftment, and it therefore promoted community private sector partnership and provided for cooperation agreements for environmental management (Fabricius, Matsiliza & Sistika, 2003. p 9).
- The National Small Business Act 102 of 1996, provides for the establishment of institutions that support small business development (Government of South Africa [GoSA] 1996).
- The Participatory Forest Management Strategy in South Africa which is mandated by the Forests Act of 1998 and the National Veld and Forest Fire Act of 1998 which sought to increase the share of benefits that formerly disadvantaged South Africans derive from the country's forest resources (South Africa. Department of Water Affairs and Forestry, n.d.). The Participatory Forestry Management Strategy also gave the government the mandate to address sustainable utilisation and management of

state forests; promoted economic and social development and utilised the developmental potential of forestry; gave the South African people greater access to the country's state forests; improved equitability in the distribution of benefits flowing from state forest resources; and conserved forest biodiversity (ibid).

The policy guidelines above provided an opportunity for various stakeholders to initiate programmes towards poverty alleviation which took cognisance of the relationship between nature and culture in rural South Africa, as people depend on nature for their livelihoods, hence they co-evolved. One such intervention included supporting the transition from honey hunting to commercial beekeeping. Such initiatives were started by various stakeholders in South Africa such as; Bushbuckridge Beekeepers' Association in a partnership project with DANCED; the Department of Water Affairs and Forestry (DWAF) and the Agricultural Research Council (ARC) in Bushbuckridge area (Timmermans, 2005). The Lutubeni Beekeeping Project, a community-based beekeeping intervention in the former Transkei area, was also supported by supported by the Department of Social Development and the ARC; while Lethimpumelelo Trading Co-operative is a Mondi forestry company which supported intervention in the Zululand area, and which aims to improve co-existence of forestry plantations and surrounding people (ibid). The Hluleka beekeeping project the focus of the case study in this research project, is a partnership between Ntinga O R. Tambo Development Agency (a local service provider) and the Department of Environmental Affairs and Tourism and is amongst a number of similar initiatives outlined above.

#### **4.4 Development towards learning commercial beekeeping activity systems in Hluleka**

Hluleka beekeeping is an intervention which was allocated a piece of land to establish an apiary on the periphery of the Hluleka Nature reserve under O.R Tambo District Municipality in the Eastern Cape Province. The intervention facilitated the learning of commercial beekeeping practices amongst 49 people from five villages around the Hluleka Nature reserve through the provision of equipment, and accredited and non accredited training (M. Mpatwana, personal communication, July 24, 2009). This intervention was funded by the Department of Environmental Affairs and Tourism's (DEAT) Expanded Publics Works Programme (EPWP) and O. R Tambo municipality's economic development programmes (F. Hlulane, personal communication, October 13, 2009). It was therefore bound by EPWP rules

– which are a nationwide programme with the object of reducing unemployment and alleviating poverty, through bringing people into the productive sector of the economy (South Africa. Department of Public Works [DPW] n.d.); DEAT’s object is the creation of livelihood opportunities through the sustainable utilization of natural and cultural heritage (South Africa. DEAT, 2005); O. R Tambo Municipality’s Spatial Development Initiative of the Wild Coast – which seeks to exploit spin-off opportunities from tourism investments through the development of SMMEs for surrounding local communities (South Africa. O. R Tambo District Municipality, n.d.).

Since Hluleka beekeeping was funded by DEAT through EPWP and O. R. Tambo District Municipality, it is important at this point to highlight some the antecedents to the learning of commercial beekeeping, and these were as follows:

- Selection of beneficiaries from participating areas was done through local institutional arrangements – the ward committee. On the other hand only unemployed people were selected, see the interview I had with beekeeper SA H1 and H2 below:

*Q: When you started commercial beekeeping, how were you selected?*

*H1: We were invited to a meeting and we were told that a beekeeping project was about to start, so we send our names, after that names were selected.*

*Q: Who selected your names?*

*H1: The committee members*

*Q: What is the composition of the committees?*

*H1: The village committee*

*And*

*Q: How were you selected to be a beekeeper?*

*H2: The village has a list of people who are living in the area; therefore they knew who is employed and who is not employed. If there is a project coming people are selected from that list.*

- According to the EPWP document, project beneficiaries - beekeepers had to be paid a minimum of R50 a day for taking part in the establishment of the project deliverable and training, as the EPWP sought to provide short term-long term employment through sustainable development opportunities and learnership programmes (South Africa. DPW, 2009). This was also confirmed in the following interview with SA MMD2 and SA H1:

*MMD2: .... Hluleka community get paid to come and learn and to start their own beekeeping project by government agencies like DEAT, through the government poverty*

*alleviation programmes for examples, for a day 50 people are paid 2 250 rand which is 50 rand per person per day...*

*Q: How much do you get?*

*H1: 45 rand/day and we work for 21 days.*

Although these two interviews did not agree on the exact amount they revealed that beekeepers were being paid according to the rules of EPWP. This may have influenced the object of the beekeepers in taking part in the intervention as was confirmed by interviews I had with SA H1 & H3 respectively:

*H1: I like this project, because I was robbing and raiding the hives and I thought I would have honey for my family. But now I have learnt more I realised there are a number of benefits in doing beekeeping.*

*Q: Like what?*

*H1: I am gaining a lot from beekeeping because I will be able to sell honey and I have also taught my children to stop raiding wild hives because I paid their school fees from beekeeping income.*

*And*

*Q: What motivated you to join beekeeping project?*

*H3: I was just employed because I wanted to work not because I was knowledgeable about bees.*

To ensure that the enterprise employee/proponents were achieving the project deliverable a manageress and two supervisors were employed

- DEAT contracted Ntinga O. R Tambo Development Agency a non state organisation to manage the funds, purchase project material and provide training in commercial beekeeping. However, Ntinga lacked the internal capacity to provide training for commercial beekeeping therefore a private company Makana Meadery was sub-contracted (M. Mpatwana, personal communication, July 24, 2009 & F. Hlulane, personal communication, October 13, 2009).

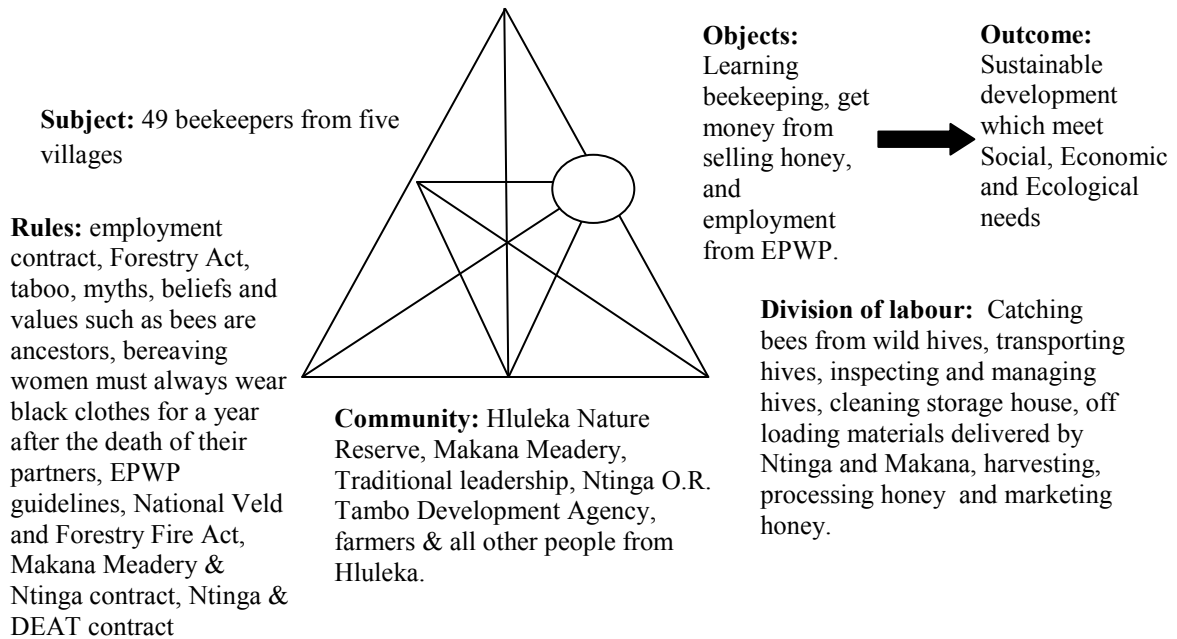
Makana Meadery is a private company that was founded in 2000 by a former student of Rhodes University in South Africa, after developing the technology to improve the quality of *iQhilika* (mead) production. The Makana Meadery's object is to produce and market *iQhilika*. Makana Meadery is also working with neighbouring activity systems such as that of beekeepers with objects similar to its own -to increase honey production, as honey is the main ingredient of *iQhilika* (Makana Meadery, n.d.). Some of the mediating tools Makana Meadery is use include the research and development centre, a beekeeping training unit, and a workshop which develops some technologies that are used by beekeepers such as the

Langstroth hives, honey extractors, catch boxes and foundation combs to mention a few. This expertise justified the selection of Makana Meadery, as suitable agency to conduct the training required by Ntinga O. R Tambo Development Agency.

#### **4.5 Description learning commercial beekeeping activity systems in Hluleka**

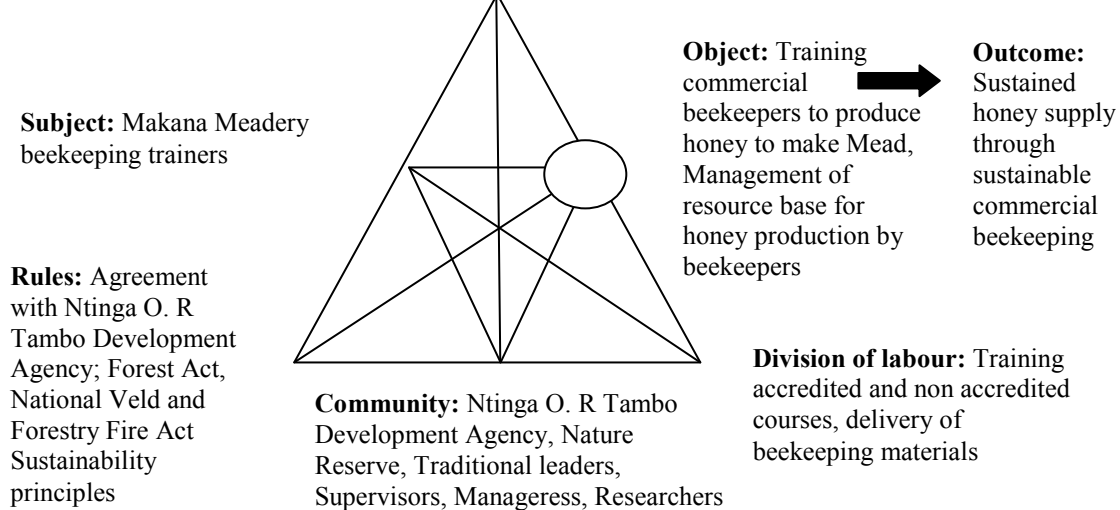
This section describes key activity systems which took part in the learning of commercial beekeeping in Hluleka. Although I am aware that these key activity systems interacted with neighbouring activity systems within third generation activity theory framework (see Section 2.8), I highlighted them using the second generation activity theory for two reasons. The first reason is that second generation activity theory prevents conflation as all elements of the activity system can be easily represented. The second reason is that the second generation activity theory provided a framework to clearly highlight sources of all levels of tensions and contradictions in the primary level analysis, the Hluleka commercial beekeeping activity system. Learning commercial beekeeping in Hluleka involved three interacting activity systems; the first, the beekeepers activity system which is the central activity system. The other two are the object producing activity system - Ntinga. O R. Tambo Development Agency and the mediating tool producing activity system - Makana Meadery respectively. Figures 4.3 to 4.5 shows the second generation of these three interrelated, yet separate activity systems

**Mediating tools:** Makana Meadery trainers, Supervisors, Manageress, Langstroth hive, Top bar hives, catch boxes, smokers, queen excluder, bee suits, honey manual extractors, storage house, Ntinga O. R Tambo facilitator



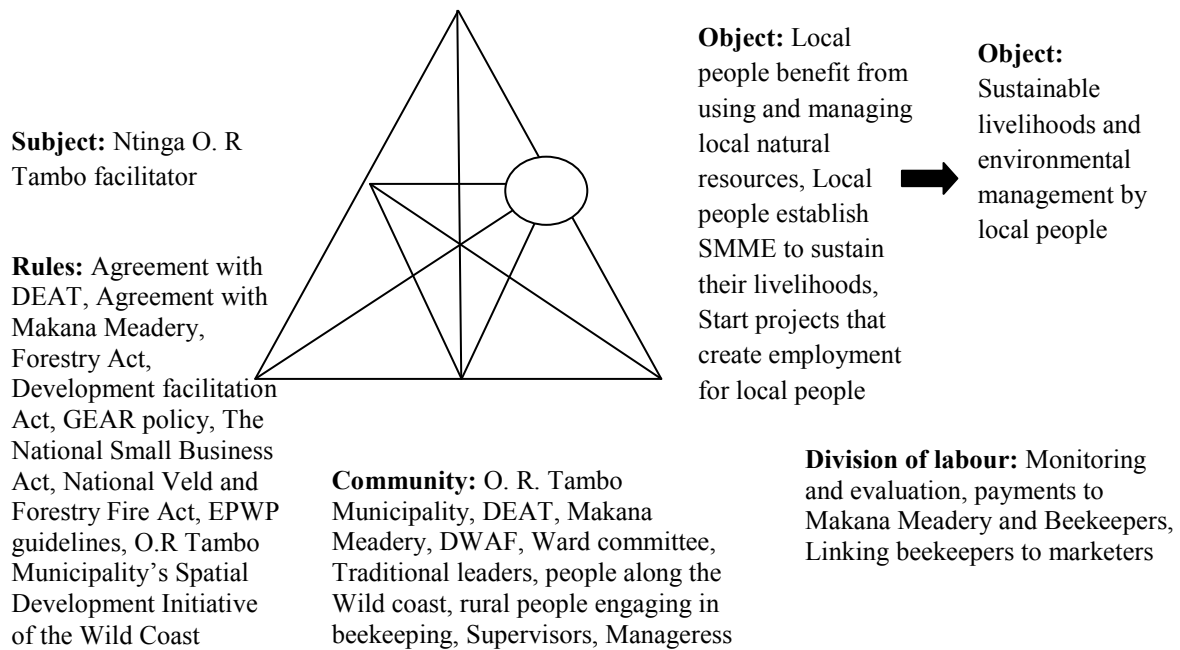
**Figure 4.3 Beekeepers' activity system**

**Mediating tools:** Training manuals, smokers, bee suits, Top bar & Langstroth hive, catch boxes, hive tool, smokers, queen excluder, honey extractor, flip charts, books & markers, colonised hives



**Figure 4.4 Makana Meadery's activity system**

**Mediating tools:** Makana facilitator, Money, Supervisor, Manageress, Makana Meadery trainer



**Figure 4.5 Ntinga O.R. Tambo activity system**

## 4.6 Social learning in Hluleka beekeeping activity system

In this section I reveal how beekeepers were learning in the social context of the Hluleka beekeeping activity system, as I did not want to assume that beekeepers were not learning even prior to this study. By revealing how the beekeepers were learning helps me to describe tensions and contradictions that surfaced and enabled me to identify areas for expanding beekeeping learning (see Section 2.9). There were four learning methods which I identified through analysis of existing patterns; namely, learning through experiencing, learning from experienced others, learning from trainer and learning by disruption of cultural beliefs. I will describe these learning processes in detail below.

1. Learning through experience: such learning occurs when beekeepers learned from making mistakes or mere carelessness; as shown in the interview I had with *SA H1* below, which was also confirmed in an interview with *SA H3*

*Q: ..., but why is it that your beehives are not colonised and do not have bees?*

*H1: Most of the bees have absconded and it has nothing to do with the manageress...*

*Q: Why are bees absconding hives?*

*H1: We did not put the queen excluder so they absconded*

*Q: Is it that you do not know or there was another problem?*

*H1: We forgot.*

Beekeepers were supposed to put queen excluders on the hives after capturing bees from the wild, so that bees do not leave the hives but they forgot, and most of the bees in the colonised hives absconded. The role of the queen excluder is to prevent the queen bee from leaving the hive, and the whole colony, as the survival of a colony depends on the presence of the queen bee which is the matriarch. When beekeepers had learned the importance of the queen excluder, they also left the queen excluder on for too long and it caused another problem. The worker bees could not take nectar and pollen into the hive, hence beekeepers did not harvest any honey within the expected period, as described in the interview with SA H9:

*Q: What problems are you facing in learning beekeeping?*

*H9: We had problems of keeping the queen excluder on for too long, but we were told how to do it correctly.*

*Q: What were you told?*

*H9: We did not take out the queen excluder, the holes of the queen excluder squeezed worker bees taking food into the hive hence they lost it.*

The description above reveals how beekeepers learned some of the rules of beekeeping such as the use of a queen excluder by experiencing the challenges and by taking corrective measures later.

2. Learning from experienced others: This type of learning happened as some beekeepers left the group and they were replaced with others. The trainer did not have time to go through the whole process of explaining beekeeping practices to newcomers, as she was living about 500 kilometres from Hluleka therefore new beekeepers had to learn from experienced others. An interview with SA H3

*Q: How are you learning beekeeping as a group?*

*H3: We are only teaching newcomers who have replaced those who dropped; otherwise all those who received training [from Makana Meadery trainer] know how to do beekeeping.*

*Q: How are you teaching newcomers?*

*H3: We tell them and show them how to catch bees and transfer the bees.*

*Q: Do you also let them do it practically?*

*H3: Yes we do.*

Newcomers were trained in beekeeping in their workplaces by experienced beekeepers who caught and transferred bees into hives. Sometimes they were allowed to do it themselves. This learning process is described as legitimate periphery participation by Lave and Wenger (1991). This learning process was also reported by Pesanayi (2008), in his study Investigating Learning Interactions Influencing Farmers' Choices of



Cultivated Food Plants, Downsborough's (2009) article *Understanding Social Learning Processes in a Citrus Farming Community of Practice* and Mukute (2010) in his study *Exploring and Expanding Learning Processes in Sustainable Agriculture Workplace Contexts*. It is a common learning process in workplaces as newcomers are inducted into the cultural practices of workplaces.

3. Learning from trainers: This type of learning formed the core of the beekeeping training, as the concepts of beekeeping were new in the activity system due to the history of honey hunting or hive robbing in the Hluleka community. Beekeepers participated in several training sessions by Makana Meadery during the period between November 2007 (when the project started) to October 2009 (when I last had my field visit). These training sessions included bee forage, catching and transferring bees, types of bees and their generation, making of catch boxes and frames, inspection of hives and business training on record keeping (S. Tiyise, personal communication, October 20, 2009). During my field visit with the trainer I also observed some of the training activities see Figures 4.6 and 4.7 below



**Figure 4.6 Beekeepers learning business concepts at a workshop facilitated by Makana Meadery**



**Figure 4.7 Beekeepers learning through observing the trainer inspecting a hive**

4. Learning by disruption of beliefs: I encountered this learning process in one of the groups which was trained by Makana Meadery in Bolotwa. Some beekeepers had started to learn commercial beekeeping after their cultural belief - bees which come to a homestead or into a house are seen to be ancestors had been disrupted by one old woman who was a pioneer beekeeper in the area. The interview I had with her (see below) shows some social complexity associated with cultural belief systems and learning new practices such as the commercialisation of beekeeping.

*Q: What do other community members say especially those who have strong cultural beliefs?*

*B2: There is a belief that bees are ancestors, but I try to convince them as I take bees from their house and put them in a box. If they were real ancestors they are supposed to leave the box and return to the house. Other people allow me to take bees from their houses, but others do not and people are now confused.*

*Q: Are they willing to take part in beekeeping because they are confused?*

*B2: They still believe that no woman is supposed to deal with bees.*

*Q: Are you still taking bees from their houses?*

*B2: They are some in this house (pointing to a nearby house), I wanted to take them, but I can't do that because there is a funeral.*

As shown by the interview extract above some people have already started to allow beekeepers to remove bees that have come to their houses whilst others are still confused. This follows the beekeeper disrupting a cultural belief by setting a condition that if bees were ancestors, they were supposed to leave a beehive and return to the house where they were captured. Although this learning process might take long for some people to accept beekeeping it provides a reference point for trainers when faced with the cultural

complexities of ancestor belief, which can become a barrier to learning commercial beekeeping in South Africa.

## **4.7 Analysis of tensions and contradictions**

In this section I highlight tensions and contradiction in learning commercial beekeeping in the Hluleka beekeeping activity system. I identified four contradictions, and these are:

- short-term versus long-term (tertiary contradictions see Section 4.7.1);
- provisioning beekeeping learning (quaternary contradiction see Section 4.7.2);
- norms of practice (secondary contradiction see Section 4.7.3); and
- Contradictions of new practices that ignored cultural norms and values (primary contradiction sees Section 4.7.4).

These were different types of contradictions – some were internal to the Hluleka beekeeping activity system (primary and secondary contradictions) and some were located between the different interrelated activity systems (tertiary and quaternary contradictions) – see Section 2.8.

### **4.7.1 A short-term versus long-term gain contradiction**

The short term versus long term gain contradiction was caused by a tension between short term paid employment and benefits derived from longer term self employment and income generation. The contradiction was highlighted when I asked beekeepers why they were involved in learning commercial beekeeping. Beekeeper SA H4,5,6 & 8 had this to say:

*Q: Who owns the project?*

*H4: It's for Ntinga.*

*Q: Whose project is this, who owns the project?*

*H5: It is for DEAT.*

*Q: Who is DEAT?*

*H8: DEAT is the organisation which employed us.*

*Q: Why did they employ you?*

*H6: There were looking for unemployed people in different villages, and then there is a list, so it goes with that list.*

*Q: Why is there a feeling that the project is for Ntinga?*

*H6: It is because we are being paid, but the project is ours not for Ntinga.*

Beekeepers had a feeling that the project of learning commercial beekeeping was owned by DEAT or Ntinga O.R Tambo Development Agency because the project was funded by DEAT through Ntinga O.R Development Agency. Beekeepers were also aware that the project was funded through the EPWP, which had a history of creating short term employment in the

same community. This is also highlighted in the EPWP Phase 2, 2009 overview report which stated that the EPWP project created short term employment for people, and the shortest employment periods were reported in areas with a high rate of unemployment as people would share the benefits of income over the period (South Africa. DPW, 2009). This was also supported with an interview I had with DEAT see below

*DEAT: The EPWP programme is assisting on eradicating poverty therefore by creating short term employment and training workers this is trying to address the problem. By training a person you are creating more job opportunities for him/her.*

*Q: Ok, it's a government law?*

*DEAT: It's under the government's public works programme, remember the president said by December this year five hundred thousand jobs should be created. So our projects are participating in terms of job creation to meet the five hundred thousand people target. So this is also contributing to the targeted number of jobs created by December 2009.*

This confusion was also represented in the interview I had with the Ntinga O. R. Tambo project facilitator, as Ntinga viewed the project as an SMME through commercialising natural resources products, as stated in the District Municipality's Wild coast development strategy, as shown in the interview with Ntinga below:

*Q: Why is it that they were being paid? Whose project is this? They were working for whom?*

*Ntinga: They were working for themselves, - - laughs- - but now the trick is, as I am saying there is these laws that are there, for example if you train people they have to be paid...*

It was true that according to the Laws of South Africa – Skills Development Amendment Act no. 37, 2008, Section 3, people who were receiving a learnership such as learning commercial beekeeping were supposed to be paid, and the contract of employment was supposed to be agreed with the employer, in this case Ntinga O. R. Tambo and the apprentices. This therefore justified Ntinga employing a supervisor and a manageress and like any other EPWP project her job was to supervise apprentices.

#### **4.7.2 Contradiction of time-space-cultural tools construction**

Time-space – cultural tools construction contradiction had its manifestation from three tensions which were all between the object of the central activity system – Hluleka beekeeping and the tool producing activity system of Makana Meadery. The first tension was the distance between Makana Meadery and Hluleka. The data highlighted that beekeepers,

when faced with the problems of bees absconding hives, the turnaround time to get assistance from the trainer was long. The process involved contacting the implementing agent – Ntinga O. R Tambo Development Agency, which would then contact the trainer from Makana Meadery to obtain some assistance, as is revealed in this conversation with the beekeeper SA H5:

*Q: In your village if you have problems with beekeeping and assistance where do you get?*

*H5: Supervisors, Manageress and Ward committee.*

*Q: But when it comes to issues specific to beekeeping who exactly do you ask?*

*H5: We talk to the manageress and the manageress contacts Ntinga.*

When I asked the Manageress the same question she said one of the problems facing beekeepers was the; absconding of bees, which seemed to be a major threat to the object of learning beekeeping, see the extract below.

*Q: What do you do when you need assistance from Makana Meadery?*

*H7a: We telephone Ntinga development facilitator and he will phone Makana Meadery*

*Q: What problems are they (beekeepers) reporting to you?*

*H7b: So many hives were absconded.*

*Q: What was the response from Ntinga?*

*H7b: I reported to Ntinga and Ntinga telephone Makana and Makana gave the reason.*

The challenge of lack of local expertise and lack of beekeeping trainers in general was also highlighted by another beekeeper in King Williams Town who is a member of ECHOPA and was supported by Ntinga. O. R Tambo Development Agency.

The second tension was between Hluleka beekeepers' activity system and that of Makana Meadery was the language used in the beekeeping teaching and learning materials. The language of teaching and learning material was English which most, if not all the beekeepers were not conversant with. This was confirmed during interviews and observation trips. Interview data confirmed that Makana Meadery had distributed English training manuals for use by beekeepers, as shown in the interview with SA MMT and SA H9 below:

*Q: What language are your manuals?*

*MMT: Unfortunately we have English and Afrikaans manuals. The local language differs according to areas. So I have problem myself in speaking some of the local languages because the isiXhosa we speak here is different to that from Pedi and Hluleka.*

*Q: Is the manual in isiXhosa or English?*

*H9: It's written in English.*

The importance of languages as a mediating tool for learning and teaching was highlighted by Dalvit, Murray & Terzoli (2009), where they noted the relevancy of learning materials in local languages and argued that such materials are more culturally appropriate due to their linguistic and cultural understanding of context. In learning commercial beekeeping the relevance of teaching and learning materials in the local language must not be underestimated as a mediation tool as beekeeping practices have a number of socio-culturally entrenched tensions and contradictions, as described in Section 4.7.4 below.

The third tension is the tension of the content of the teaching and learning materials. The materials were well elaborated on technical aspects of beekeeping; however, they lacked important aspects of entrepreneurial development which were also a core component of learning commercial beekeeping. Although that was the case, the trainer highlighted that aspects of entrepreneurial education were provided. See interview below with SA MMT

*Q: During training who else helps with facilitation?*

*MMT: Our training is more on practical/ hands on. Myself I will do theory and Cop does the demonstration, while I am explaining. When Cop opens the box he can't talk aloud because of bees, therefore he will be showing the different components in the hive and I will be explaining, that is the first day. On the second day the trainees will be able to see whether they are handling the bees properly. Even if it is a group of fifty people each person will get a chance to practice. On the third day we show them how to catch a swarm & how to put them in a box. If they can read and write they will write a test, but if they cannot, they will do an oral test. This is what we call basic beekeeping training.*

*Level 2, once the bees have established themselves, and they have filled the box with honey it commences. In level two, there are a few things which are taught from the manual; in most cases we will be doing practical work. In level two we go out and identify supers, which needs to be harvested and then we do wax sheets. We then put the wax sheets on the frames and then we harvest the honey. We give them another certificate.*

*Level 3, we have not done this process yet, but it is all about how to clean honey, bottle honey and to be hygienic. Record keeping, records of honey, selling records, how to make receipts, how to balance money & banking (basic business management). They then get a certificate.*

### **4.7.3 Contradiction of norms of practice**

There is a tension between community past practices and norms and the object practices and norms of the central activity system. Some people were still practising honey hunting, which was the norm as an earlier practice. However the new practice, commercial beekeeping demeans honey hunting. Beekeepers were sceptical about putting their hives in an area that

was not protected as they feared the hives would be raided by honey hunters; as reflected in this discussion with SA H3 expressing fear

*Q: What problems are you facing?*

*H3: At first we did not have space to put boxes, but now the site have been fenced and we can now go and put the bee hives there. The problem is that we are not sure about the safety of the boxes in the new site.*

*Q: Did you experience theft cases?*

*H3: No, because someone is guarding.*

However SA H9 explicitly expressed that people would break hives and steals honey when he was asked why he was not putting hives along a nearby river where there was a lot of vegetation. See interview extract below.

*H9: It is not safe to put them (hives) along a river that is why we wanted some fencing material to fence them.*

*Q: What will happen to the hives if they are along the rivers?*

*H9: They will be broken into and people will take honey like what happened in xxx.*

This practice was also noted in other parts of the Eastern Cape province as was highlighted by the Chairperson of ECHOPA who said „people are stealing my honey boxes, I know that, this is coming from the tradition of honey hunting and stealing from commercial beekeepers as I used to do that as a small boy’ (F. Gomna, personal communication, October 15, 2009). The Department of Agriculture also highlighted the tension as being prevalent in Amathole and Chris Hani districts, as people were breaking boxes. This was revealed in an interview with SA Agric:

*SA AGRIC: I also want to say in Amathole and Chris Hani; people are breaking those boxes and stealing honey.*

*Q: Why?*

*SA AGRIC: People want to eat but they don't want to work. It's very frustrating to some of the farmers.*

In Hluleka they had tried to reduce this problem by centrally locating an apiary in the nature reserve and employing a person to guard the apiary all the time.

#### **4.7.4 New practices that ignore socio-cultural norms and beliefs**

There were tensions between two sets of rules within the central activity system, rules on cultural norms, values and beliefs about bees in Hluleka and rules of the new practice, beekeeping. The first tension was that bees are ancestors and cannot be boxed. If bees come

to a homestead people should brew *umqombothi* and persuade the ancestors to leave. During interviews with ECHOPA it was revealed that people are not allowed to box bees which come to homesteads, or even to sell honey made by bees from such boxes. However, it was also highlighted that not all people believed in that tradition and it only applied to bees which come to a cattle pen or house, not all bees (F. Gomna, personal communication, October 15, 2009). This was also revealed in an interview with SA H1 & H4:

*Q: Do bees or honey have any role in your culture?*

*H1: If wild hive come from the veld and get into your house, it represents ancestors, but not any other wild hive.*

*Q: Do you harvest honey from such a colonies?*

*H1: No, we brew umqombothi for them to leave.*

*H4: It depends on your belief, but when bees comes to your house you are suppose to brew umqombothi.*

*Q: What does the other belief say?*

*H4: Some people do not believe that bees are ancestors.*

This belief might be linked to why some people in Hluleka did not want to keep bees at their homesteads, as they would not be able to sell the honey made by ancestors. However they were some people who did not believe in such a tradition, as they believed in the Christian tradition and had offered to keep hives for the beekeeping group in their vegetable gardens while the project members were waiting for their apiary to be secured.

The second tension was associated with the rule that widowed women must wear black clothes for a certain period as a symbol of the loss of their loved ones. However, bees hate dark colours especially black. This cultural belief was confirmed during my field visit of week 21-23 October 2009 when I observed a lady wearing black clothes staying away from bee inspection training activities. See a picture below of a young lady who had just lost her husband wearing black.



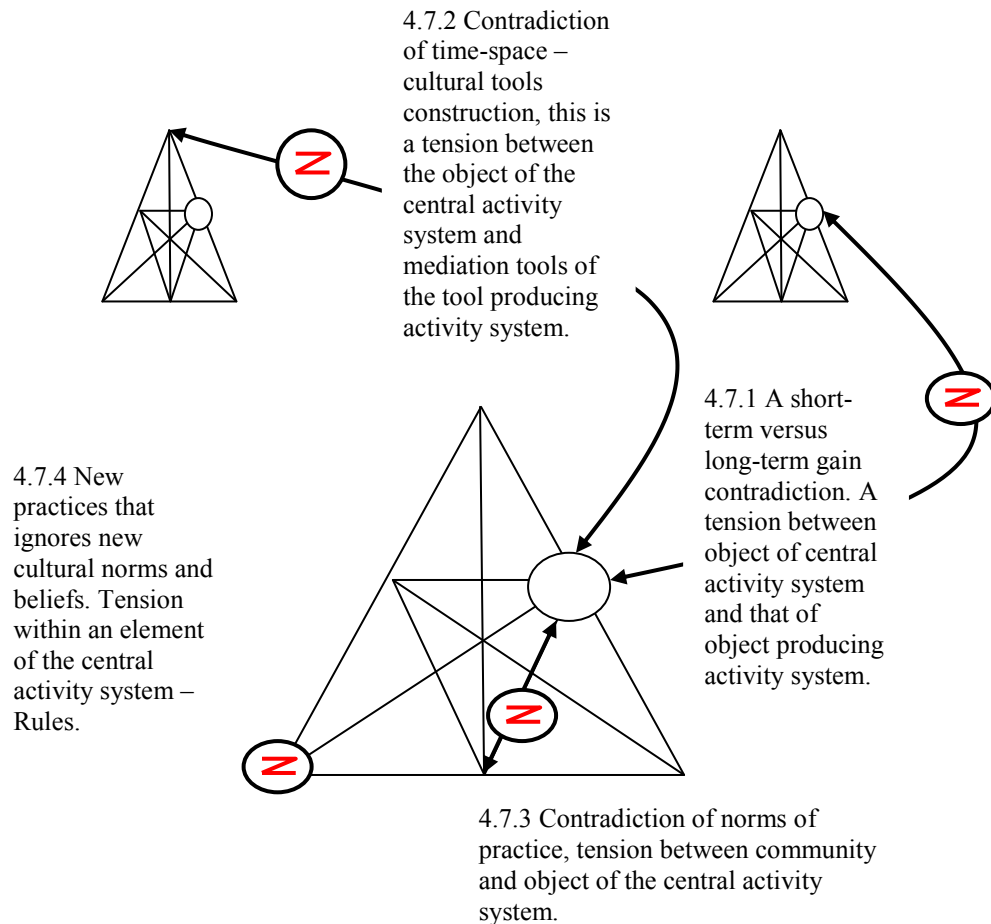


**Figure 4.8 A lady wearing black as representation of recently being widowed**

#### **4.7.5 Summary of contradictions**

This section summarises the tensions and contradictions through diagrammatic representation using Engeström's third generation activity system oriented framework in Figure 4.9 below. Sections, 4.7.1, 4.7. 2, 4.7. 3 and 4.7.4 refer to sections where these tensions and contradictions are described in detail. The different types of contradictions are; dual interest in project activities strategies, provisioning beekeeping learning, norms of practice and new practices that ignore cultural norms and values.

The diagram below shows all four levels of contradictions, primary level contradictions which are within rules of central activity as shown by Section 4.7.4; secondary level contradictions which are between elements of an activity system as shown by Section 4.7.3; tertiary level contradictions which are between the objective of the central activity system and the goal of a more advanced activity systems as shown by Section 4.7.1 and quaternary contradiction which is between the central activity system and its neighbours as shown by Section 4.7.2.



**Figure 4.9 Third generation activity system showing tensions and contradictions in learning commercial beekeeping in Hluleka**

## 4.8 Conclusion

This chapter provided an introduction to a typical learning commercial beekeeping activity system and its elements through a description of the early history of human-bee interaction in South Africa and through the later political climate that led to a dominant cultural practice of honey hunting and robbing of hives. This cultural practice, as described in this chapter is based on different norms to those of commercial beekeeping. A new practice was introduced after 1994 within a development of SMME framework, supported by government programme interventions and formal training. The chapter also highlighted social learning processes in commercial beekeeping, and tensions and contradictions to the learning processes in Hluleka,

noting that a complex set of tensions influence the learning of beekeeping in the former rural Transkei area of Hluleka. This description shows that such contradictions are localised at the interface of the long-term and the short-term beneficiation process; time–space-cultural and mediation tool disjuncture in the training; and at the interface of existing and new norms associated with old and new human-bee relations and associated practices.

In the following chapter I will focus on similar aspects but in the historically and socio-culturally different context of the Buhera area in Zimbabwe.

# **Chapter 5: Development in the transition to learning commercial beekeeping in Case 2 - Buhera, Manicaland Zimbabwe**

## **5.1 Introduction- What is a beekeeping activity system?**

This chapter focuses on the second case study of the Buhera district in the eastern province of Zimbabwe - Manicaland. Highlighted in the chapter is the history of early beekeeping in Zimbabwe, developments towards commercialisation and the learning of commercial beekeeping. I also highlighted the learning processes in the Buhera beekeeping activity systems that were in evidence before this study. The chapter also reveals some tensions and contradictions in learning commercial beekeeping and I conclude the chapter with a summary.

In Section 4.1 - the introduction of the previous chapter, I have described a typical learning commercial beekeeping activity system, which consisted of subjects, mediating tools, objects, outcome, rules, community and division of labour (see also Table 3.1). The same concepts are applicable in this chapter and are going to be used consistently.

## **5.2 Early history of human-bee interactions in Zimbabwe**

In Zimbabwe honey hunting, subsistence beekeeping and localized trade of hive products has a long history which can be traced back to well before the coming of the first settlers, during the late 1800's. Eva Crane (1999) quoting from Genge and Huffman describes some rock paintings which depicts bee activities observed in a number of places in Zimbabwe such as Matopos and Mutoko. As rock paintings are mostly associated with the San people's tradition, it also indicates the San people's influence on early learning and interactions with bees in Zimbabwe. The importance of bees to the *Shona*<sup>3</sup> culture in Zimbabwe is highlighted by Gelfand (1971), as he reported that five different types of bees; namely, the *Hwodza*, *Monga*, *Mbadzi*, *Nhona* and *Kanyira* were found in Zimbabwe, and of these five, three types were stingless bees - *Monga*, *Hwodza* and *Mwande*. *Monga* was known always to make its nests in the ground while the other two used tree cavities, *Mwande* honey was known to be used to make *Mupani beer* (ibid). The naming of different types of bees indicates their role in

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<sup>3</sup> Shona is a language widely spoken by the largest population in Zimbabwe, including Buhera districts the site of the second case study research.

the culture of *Shona* people. On the other hand the *Shona* people's level of advancement in interacting and learning the behaviours of bees was important for commercial beekeeping. Another example of such advancement was shown by naming the of beehive products, an aspect I did not come across in South Africa. The *Shona* people knew different types of bees and various beehive products such as *mukuyo* (honeycombs), *namo* (propolis) the *machinda* (bee brood) and the *pfuma* (royal jelly) (Gelfand, 1971). The *Shona* culture valued a special type of bee called *Dendende*, and the cultural practice and belief was that it was a must that every person should see this bee before being married otherwise one of his or her close relatives would die (ibid). This belief was important safe guarding the habitats of *Dendede*; otherwise, it was believed a lot of people would die as their relatives would have married without seeing the *Dendede*. Crane (1999) reports about beer made from honey by the Bantu speaking people in the tropics and its use for fulfilling social obligations such as a chief's tribute, labour rewards and sometimes if in abundance it was taken at a chief's court or given to visitors as hospitality. During my data collection I came across a slightly different approach to the use of honey products in Zimbabwe, as honey was reported to be used as a reward for labour at a social gathering for communal work called *Nhimbe* (M. Mutasa & I. Magwere, personal communication, December 28, 2009). There was also no report of an alcoholic drink such as *iQhilika* being made from honey, a practice which was learned in the South African tradition through the influence of the San people.

Bees were also reported to play an important role in the nutrition and food security of the people in Zimbabwe. Gelfand (1971) describes how honey was obtained from a natural hive, where a hole would be made with an axe below or above the bees' natural entrance, after smoking the hive with fire, when bees moved away from the combs, a knife would be used to cut *mukuyo*. This would be placed in a saucer-like structure made from bark and filled with water. In cases where was a natural ground hive, a hoe instead of an axe would be used. In such cases the natural opening had to be closed while digging to prevent bees from coming out (ibid). This honey would then be taken home where women would squeeze out liquid honey into a wooden plate or clay pot for eating. If there was a lot it would be boiled in a large pot with bulrush millet, pearl millet or millet meal to make a sun dried cake called *chihungwe* (Gelfand 1971). These cakes were sometimes taken to another village to be sold or traded with grain (ibid). This could have marked early trade in bee products.

### 5.3 Developments towards learning commercial beekeeping in Zimbabwe

In the early 1500s Huffman (1972) quoting a letter dated November 15, 1506 from Diogo Alcacova to the King of Portugal reported an early establishment of trade between local Africans and some Muslims at Sofala Bay. Although the trade centre was in Mozambique Huffman (2001) noted the strong relationship between the *Ndaus* who are the *Shona* speaking dialect in Mozambique and those in Zimbabwe and he showed that the relationship could have extended in the trade of ivory, gold, copper and other products from inland *Ndaus* and *Karangas* as far as Great Zimbabwe (Huffman, 1972; Lancaster & Pohorilenko, 1977). Drawing on Wainwright's (1990) reporting on early trade in beeswax between Europe and Southern Central Africa – which is now known as Angola, Zambia Tanzania and Mozambique, I can conclude that the same product, beeswax, could have been traded through Sofala Bay by the *Ndaus and Karangas*<sup>4</sup> in Zimbabwe. As more people become involved in the trade of bee products, the practice of bee hunting co-evolved to beekeeping. People started to make man-made bee nests [hives] from tree bark, hollowed logs, baskets and calabashes for bees to occupy, thus avoiding walking long distances for honey hunting (Wainwright, 1990). Such types of hives were also reported in some parts of Africa South of the Sahara including Zimbabwe where clay pots, gourds and bark from the miombo woodland (*Julbernardia globiflora* & *Brachystigia spp*) were used (Crane, 1999). See Figure 5.1 below



**Figure 5.1 A bark hive which was made from the bark of a *Brachystigia species* in Chipinge, a neighbouring district to Buhera**

<sup>4</sup> Ndaus and Karanga are both Shona dialects found in the eastern and southern parts of Zimbabwe respectively.

During my field visit to Buhera I did not come across bark hives possibly because of the type of woodland in the area is Mopane and Mopane trees do not have bark strong enough to support a hive. It might also be the influence of extension officers as such hives were being discouraged because they caused deforestation. People in Buhera, however, were using a log hive, which is made from chipping away the inside of a dead log of the tree species *Mutuwa*, *Mubvumira* and *Mukamba*. During my field visit I saw a man making a log hive as was shown in Figure 28.3c in the book „*The World History of Beekeeping and Honey Hunting*’ by Crane (1999). See Figure 5.2 a & b below.



**Figure 5.2a & b Process of making a log hive and a finished and mounted log hive in Buhera**

During data collection the rule which might have encouraged beekeeping in Zimbabwe, was that of using cultural medicines to protect hives from thieves. Hives in Zimbabwe were considered important assets which were supposed to be inherited by family members in the case of death. In Buhera a hive was equated to a wife, therefore tampering with a hive was equal to having a sexual affair with someone’s wife; it was considered a very big offence (M. Mutasa & I. Magwere, personal communication December 28, 2009). Similar rules about beekeeping were highlighted in the San culture in Chapter 4, where tampering with someone’s hive would carry up to a death penalty (Crane, 1999). In Buhera such an offence would carry the fine of cow (M. Mutasa & I. Magwere, personal communication December 28, 2009). In some instances people were not even allowed to cut down a tree mounted with a hive or even to sit under such trees (ibid). This mediated learning to respect beekeepers’ assets which included a tree mounted with a hive, and therefore reduced deforestation. In other words it was a taboo to tamper with a beekeeper’s assets, as beekeepers used cultural medicine for protection (M. Mutasa & I. Magwere, personal communication December 28,

2009). In cases where honey was stolen, it was said that the bellies of people who ate such honey would become bloated and this could lead to death unless it was corrected by the hive owner (ibid). This tradition also prevented buying honey from people who were not known to be beekeepers in case it was stolen honey. Such customs were reported to be rarely practised due to erosion of indigenous customs and cultures which are being replaced by Christianity (M. Mutasa & I. Magwere, personal communication December 28, 2009). Almost the same tradition of hive protection was reported by Crane (1999) in Zambia where beekeepers were discouraged from placing their hives in a tree already occupied by another hive. This is part of the explanation as to why there is very little to no history of hive robbing in this region unlike as was reported in South Africa.

The coming of colonisation and the growth of the white mining industry and the expansion of markets for both labour and agricultural products such as grain and cattle created a new order in the trading of honey in Zimbabwe (Andersson, 2002). Phimister (1974) reports that this period was marked by a rapid response by the black Rhodesian<sup>5</sup> societies to the new economic systems which coincided with the state imposing taxes in order to mobilise labour. People responded negatively through generating cash to pay tax instead of going to work in mines and farms. People would sell grain, livestock, beer and other products especially to mine workers to meet their tax and other livelihood needs (Phimister, 1974; Andersson, 2002). Andersson (2002) noted that in the southern parts of Buhera where there had been a history of recurrent droughts; many people were forced to sell cattle not just to meet their food requirements but also to pay tax. But what was happening to households with no livestock? - Natural resources products especially beekeeping, became an important livelihood safety net, as reported by the eighty seven year old Headman Mushumba Chapanduka (personal communication, January 2, 2010). The period also marked a co-evolution of learning beekeeping practices, as beekeeping was no longer a subsistence practice, but had been transformed to a commercial business by poor households with no livestock to meet their cash and food requirements. It meant that beekeeping practices had to co-evolve as beekeepers were learning to make and manage the bee hives, harvest, process and store honey in a state which would allow them to travel long distances to trade centres where gold was found mostly in the south western region of Matebeleland.

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<sup>5</sup> Rhodesia is the colonial name for Zimbabwe



## **5.4 Development towards learning commercial beekeeping in Buhera**

The gaining of Zimbabwean independence meant black majority rule and created a new order of establishing a society with equality in terms of employment, wealth, education and social security (Sylvester, 1985; Dhliwyo, 2001). Policies developed were aimed at narrowing the economic gap between racial groups by redistributing some of the society's assets and income, revitalizing blacks' assets, and the provision by the government of free social services such as; education, health facilities and housing; stimulating agricultural and industrial output, decongestion of the rural areas through resettlement programmes; a heavy government cash injection and subsidises into the agricultural sector to mention a few (ibid). Of significance to note was the shift among rural people from farming staple crops to cash crops such as barley tobacco, groundnuts, and cotton (Sylvester, 1985). In Buhera south, the case study area, there was a shift from conventional livelihood strategies that had sustained people with no livestock during the crucial moments of colonisation to beekeeping and cash crop production (ibid). Cotton and red sorghum were grown on forward-backward contracts<sup>6</sup> with private companies (Mugadza & Kawadza, pers comms, January 2, 2010). This marked another co-evolutionary moment as crops such as cotton required farmers to open large pieces of land, use fertilisers and pesticides which were now available on the market at subsidised rates. Learning beekeeping had to co-evolve as the practice was relegated to a peripheral livelihood activity. Bee forage started to deplete due to land clearance, as did the population of healthy bees as cotton farmers resorted to heavy use of pesticides. The number of people learning beekeeping decreased as this activity was considered to be a hobby hence it was left to a few enthusiasts with little to no government support.

Post independence economic growth was not fast enough to absorb a rapidly growing young labour force nor sufficient enough to generate the tax revenue for continued expenditure on basic social services (Dhliwayo, 2001) To policy makers it meant going back to the drawing board. By November 1991 the Economic Structural Adjustment Programme (ESAP) was launched as a strategy to resuscitate the ailing economy (Dhliwayo, 2001; Addisson & Laakso, 2003). The core objective of ESAP was to liberalise key markets together with measures to reduce the size of the fiscal deficit by cutting budgetary support to some social

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<sup>6</sup> Forward and backward contracts – it is when inputs and market is provided to produce a certain crop to farmers, mostly by private companies

and economic services such as education, health, and subsidies to agriculture (ibid). Despite ESAP benefiting some sectors of the economy it was a major blow to the poor majority. The drought of the 1992 season and high inflation affected both urban and rural people, as households lost productive assets such as cash investments and livestock respectively. On the other hand the liberalization of markets affected some sectors of the industry such as the clothing and textile industry as cheap materials were imported from other countries (Addison & Laakso, 2003). This also meant job losses and low cotton producer prices. To rural Buherans this meant looking for other sources of livelihood to fall back on other than what were now the traditional ones; cattle, cotton and remittances from towns. The logical one to use was natural resources products and to revive beekeeping. Beekeeping changed its status from being peripheral in providing for survival to becoming a core activity. The main reason why beekeeping was favoured was because it is a low cost practice with very little inputs required and is drought resilient, hence it became a source for food, cash for school fees, health and other social services which were no longer being provided by the government.

The realisation of beekeeping as a key livelihood activity also coincided with the government's mobilisation for other stakeholders such as Non Governmental Organisations [NGOs] to assist in cushioning the effects of ESAP. This initiative saw the establishment of some NGOs whose aim was to improve the livelihood of the rural poor through sustainable natural resources utilisation and management such as the CAMPFIRE Association; Southern Alliance for Indigenous Resources (SAFIRE) in 1994, and Zimbabwe Farmers Development Trust (ZFDT) in 1992 (ZFDT, n.d.). This was another co-evolutionary moment in Buhera south, as support from ZFDT to beekeepers coupled with poor performance of the cotton business and recurrent droughts of 1991/2; 1994/5 and 2001 to 2003 (UNEP, 2006) all favoured consolidation of learning beekeeping as a key livelihood activity. A number of people started to learn beekeeping as a commercial business again; however the only difference with the previous commercialisation during colonisation was that the later practices were supported by an external agent using new technologies within a CBNRM philosophy. In 2002 ZFDT registered another company called Natural Food Processors (NFP) which was handling the business aspects – buying, processing, packaging and marketing of honey. Natural Food Processors even went a step further by providing buying services at beekeepers' doorsteps, as it had a vehicle specifically for honey purchase (T. Paradza, personal communication, January 25, 2010).

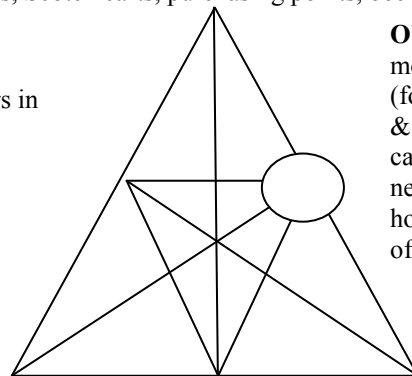
## 5.5 Description of learning commercial beekeeping activity systems in Buhera

In this section I described the activity systems that interacted in learning commercial beekeeping in the Buhera district in Zimbabwe,. Just as in the preceding Chapter I used the second generation activity system to describe key activity systems; however, I am well aware of other neighbouring activity systems. I used this approach to avoid conflation of representation of elements of activity system and it also assisted in elaborating tensions and contradictions under Section 5.7. In Buhera there were four activity systems which interacted; the activity system of the beekeepers which I referred to as the central activity system, the activity system of the facilitating organisations of the Zimbabwe farmers Development Trust and that of AGRITEX which I both referred to as the tool producing activity systems, and the activity system of the buyer, Natural Food Processor which I referred to as the object producing activity system, (see Figure 5.3, 4.5, & 5.6).

**Mediating tools:** ZFDT, AGRITEX, NFP, Experienced beekeepers, buckets, log hives, smokers, top bar hives, axes, hive tools, Scotch carts, purchasing points, bee suit, chisels

**Subjects:** Beekeepers in Buhera

**Rules:** Forestry Produce Act, Environmental Management Act, ownership of hives, migration of bees in hot season, four harvests per year, bees are a sign of happiness, micro & macro economic conditions, bee migration, Pricing



**Community:** Traditional leaders, Councillor, ZFDT, AGRITEX, NFP, local people, Forestry Commission, Buhera RDC, District Administrator, Experienced family members

**Objects:** Getting money to meet social (food, hospital bills...) & economic (buy cattle, wheelbarrow...) needs from selling honey. Conservation of bee sites and forage



**Outcome:** Meet households livelihood needs from commercial beekeeping.

**Division of labour:** Harvesting, grading, selling, placing hives, inspecting, making hives, transporting, negotiating price

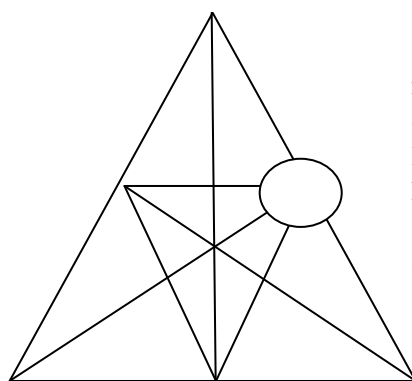
**Figure 5.3 Beekeepers' activity system**

This above figure is the activity system of beekeepers learning commercial beekeeping in Buhera. This activity system is sometimes referred as the central activity system and it interacts with neighbouring activity systems from ZFDT, AGRITEX and NFP, (see Figure 5.4, 5.5 & 5.6).

**Mediating tools:** Trainer’s manual, bee suits, smoker, Top bar hive, hive tools, stationery, transport, money,

**Subjects:** ZFDT Trainers

**Rules:** Forestry Produce Act, Environmental Management Act, Private Voluntary Organisations Act, ZFDT constitution, Vision and mission, ZFDT conditions of service, Politics



**Community:** Beekeepers, AGRITEX, Forestry commission, Traditional leaders, Councillor, RDC, DA, EMA, NFP,

**Object:** Natural resources conservation, Households sell honey to meet social and economic needs

**Outcome:** Sustainable use of natural resources as a poverty alleviation strategy

**Division of labour:** Training in business, group organisational development & technical beekeeping, conservation of natural resources

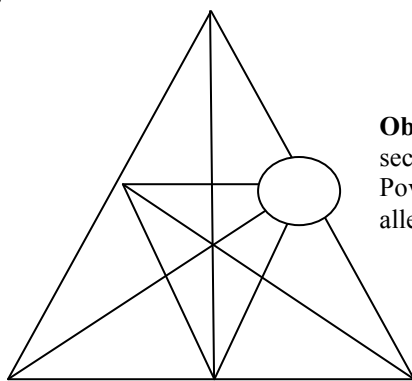
**Figure 5.4 Zimbabwe Farmers Development Trust’s activity system**

The activity system above is for ZFDT a non profit organisation training commercial beekeeping in Buhera. ZFDT wholly owns Natural Food Processors a private company that buys honey in Buhera. Beekeepers usually confuse ZFDT with NFP as both organisations occasionally use the same vehicles and staff members.

**Mediating tools:** Stationery, training manuals, field days, community meetings, and bee hives, bee suits, smokers, hive tools

**Subjects:** AGRITEX officers

**Rules:** Department mission and vision, Environmental Management Act, Forestry produce Act, Job descriptions, Politics,



**Community:** Beekeepers, traditional leaders, RDC, DA, Forestry commission, Engineering Department

**Object:** Food security, Poverty alleviation

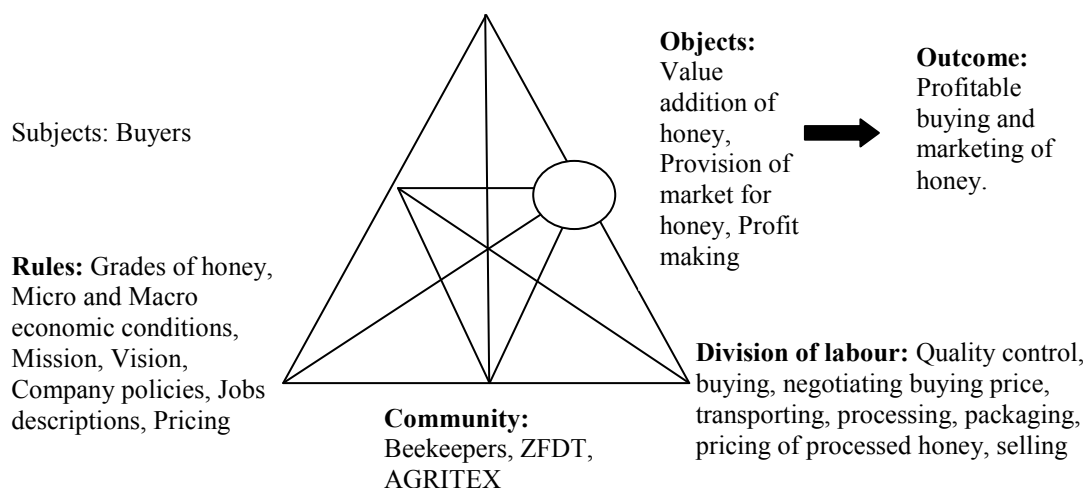
**Outcome:** Sustainable agricultural production and marketing

**Division of labour:** Training in business, marketing, conservation of natural resources, technical beekeeping,

**Figure 5.5 AGRITEX’s activity system**

AGRITEX is a government agricultural extension agency with staff members at ward level that trains farmers in farming. In Buhera AGRITEX extension officers are also training farmers in commercial beekeeping.

**Mediating tools:** Money, transport, scale, labour, processing factory, bottles, drums, stationery,



**Figure 5.6 Natural Food Processor's activity system**

The activity system above is for Natural Food Processors (NFP) a private company that buys honey from Buhera. As mentioned above NFP is wholly owned by ZFDT, a non-profit organisation that trains commercial beekeeping in Buhera.

## 5.6 Social learning in the Buhera beekeeping activity system

This section describes various learning processes which took place within the central activity system, that of the beekeepers, before this research began. I observed that the beekeepers were learning through observing and experiencing climatic and environmental changes, learning from experienced others, learning through networking with neighbouring activity systems. Learning beekeeping was believed to be in the blood of certain families or it was seen to be spiritual calling through ancestors. Below I describe these learning processes in more detail.

1. Learning through observing and experiencing trends: this is a process where beekeepers experience, observe and learn about the changes in climate and environmental conditions. Such learning would influence their practices either by influencing the rules of the activity, or understanding the behaviour of bees in their area. Mukute (2010) called this learning through observation, practice and experimenting, he emphasised how knowledge internalised and appropriated is used to meet an object. Beekeepers in Buhera have observed bees swarming in the period between July and September; it was believed bees would abscond from hives and migrate to neighbouring areas with cooler and wetter conditions during the period.

Such learning through experiencing and observation has made beekeepers adjust their practices to match the behaviour of bees, such as preparing hives in October when bees start to return. Their harvesting seasons are from December to July, as reflected in interview data with *ZW B2*.

*Q: Do you have some people who capture bees and put them in hives?*

*ZW B2: We haven't done that, we know that our bees migrate to Chimanimani or wetter areas during the dry season; they start to come back towards the rainy season. During the period July to September it is very hot and dry in this area that is the reason why bees leave the area, however we start to get swarms coming back as from October.*

Beekeepers' experience of bees absconding made them to learn that it was because of reduced bee forage. A lot of people were cultivating lands and this was reduced the forage, a trend which was highlighted by Crane (1999) who reported that it caused migration in tropical bees. See the discussion interview extract I had with *ZW B1*

*Q: What types of trees are appropriate in this area?*

*ZW B1: We had trees such as Mubvee, Mupanda, Mutondo, Musharu, Mukukuti, Chidora and Chimonemone that would provide bee forage throughout the year, but these trees are no longer available. We would prefer to plant trees for bees to forage even at our homesteads*

*Q: What caused these trees to vanish?*

*ZW B1: It's because of deforestation & opening of crop fields. There are a lot of new fields being opened.*

Beekeepers also knew that their practice of making log hives was causing deforestation and was contradictory to their goal of increasing honey production therefore they had to formulate a new rule of using dead wood to make hives. See discussion interaction I had with *ZW B2* below.

*Q: What type of hives do you make?*

*ZW B 2: We have log hives from Mukamba, Mubvumira, Mupanda and Murara, there are a lot of trees which we use, but the basic principle is we need hard wood which is not easily affected by weevils and it must be hollow.*

*Q: Do you still have such trees?*

*ZW B2: Yes, we still have them. We get dry tree trunks of Mutuwa and curve it hallow. We agreed that we must not cut live tree as this reduces forage.*

2. Learning from experienced others: Novice beekeepers in Buhera learned from more experienced others. Experienced others were fellow beekeepers such as parents,

brothers or neighbours to the new beekeepers. Mukute (2010) emphasised the intergenerational passing of knowledge amongst farmers. He also highlighted that such learning was culturally historical in nature (ibid), as reflected in this interview extract with *ZW B3*.

*ZW B3: We did not have a trainer but recently ZFDT is responsible. ZFDT is training beekeepers about how to manage bees, conservation environment and bee hive products.*

*Q: Are you saying before coming of ZFDT, people would start beekeeping without receiving any training?*

*ZW B3: There was no organisation/person that would organise a formal training, but beekeepers would observe from seasoned/experienced others and then they would start the activity.*

*Q: Are you saying they would learn from their parents or friends?*

*ZW B3: Yes, just like me I learnt from my father who was a beekeeper and now I am an experienced beekeeper.*

Some parents monitored their children participating in the beekeeping practice; therefore the techniques of beekeeping are also learned by doing while assisted by an experienced other. This process involved „Scaffolding’, as it was explained by Daniels (2001, quoting from Moll). This involved the creation, development and communication of meaning through the collaborative use of mediational means rather than the mere transfer of skills from more to less capable partners. *ZW B5* discusses this process:

*ZW B5: I have six children, 3 boys and 3 girls. My sons, one is in grade six, the other one in form two they can harvest honey. I trained them how to harvest and they can now do it on their own, I only accompany them when they are harvesting during the night since they are scared of darkness and they are young. I am confident that they now know harvesting techniques, how to open a hive, closing and appropriate smoking which does not kill bees.*

Figure 5.7 below shows children learning about the selling and grading of honey through observation.



**Figure 5.7 Children learning through observing a social practice**

Since commercial beekeeping was widely practised, it had become an activity which was discussed by beekeepers during social gatherings. During interviews some learning platforms were identified as social gatherings such as funerals, meetings, marketing days and beer drinking at bars, see an interview extract I had with *ZW B5*.

*Q: Who taught you?*

*ZW B5: I do not know, however my father and my young brother have always been a beekeepers, but I was not interested in keeping bees although I liked honey.*

*Q: Does it mean beekeeping in this area is done through learning from others.*

*ZW B5: Yes, usually discussions are at social gathering like funerals, bottle stores or any other social gatherings.*

3. Learning through networking. Beekeepers also learn through networking, with buyers, extension officers and other important stakeholders. Field (2003) notes that people make connections with people with whom they share an interest, and by making and maintaining these connections over time, people are able to work together to achieve things. See also Downsborough (2009). In Buhera beekeepers confirmed that learnt how to grade honey, why and how buyers grade and value different grades through networking with buyers. This was revealed through *ZW B1* who relayed how ZFDT values honey in light combs, as they contain a high honey to wax ratio.

*ZW B1: After harvesting we close our hive and then grade our honey according to agreed grades. The agreed grades are Grade A- white sealed mature combs. Honey with brood or pollen is not sold. Grade B is dark mature sealed combs, this honey can be sold. Even if our honey is graded and priced differently when ZFDT buy, it mixes grade A & B in one container.*



*Q: Are you telling me that grade A and B should be one grade?*

*ZW B1: Yes, but it was later clarified that dark honeycombs produce less honey than white combs. Grade A is priced higher than grade B as ZFDT value honey more than wax.*

4. Learning through inheritance or spiritual calling. Although a number of learning processes seem to be familiar and to have been learned through observing others, I came across a unique learning process, which I called learning through inheritance or as a calling by ancestors. In Buhera some people were motivated to learn beekeeping as they believed the practice runs in their family. In some instances a family was given a name depicting its superiority in beekeeping such as *Dzere* (Honey badger). A Honey badger is believed to be a good honey hunter and can identify a bee hive in its dreams. See interview extracts which I had with *ZW B5* & *ZWB6*

*Q. How did you really start,... did you copy from other community members?*

*ZW B5: It runs in his family, Mr. Mutasa learned from his forefathers. However some would learn from other local people as a livelihood activity. For example Mr. Mutasa inherited from his father but he has surpassed him. I also learnt from my father but I have also surpassed him.*

*ZW B6: I started beekeeping in 1996, I was a carpenter and I was encouraged by others to start commercial beekeeping. I also realised that the practice was a good livelihood activity. My wife also encouraged me as she grew up in an area where beekeeping was a major source of livelihood. When I started some people told me I had inherited my forefather's hobby by engaging in beekeeping. (The beekeeper's surname was *Dzere* which means honey badger)*

## **5.7 Analysis of tensions and contradictions**

This section describes tensions and contradictions in learning commercial beekeeping using the analytical lenses of the second and third generation activity theory. The tensions and contradictions are at four levels, primary, secondary, tertiary and quaternary (see Section 2.8).

### **5.7.1 More regulated land use patterns in the past and more recent and unregulated land use patterns**

In Buhera, tension exists in competing land use. This tension exists between beekeepers and crop producers who both wish to use certain pieces of land, particularly along rivers and streams. Crop producers prefer growing crops along rivers especially in the dry season because that is where they can easily access water or residual moisture for their crops.

However, there is general agreement within the area that beekeepers should place hives along rivers and in mountains to avoid conflicts with crop producers since these areas were considered ecologically fragile. The interview with *ZW B2* reveals some of the associated problems that beekeepers are facing,

*ZWB2: It's true that people are conserving, but the biggest problem is that most people in our areas no longer respect the required 15m (Zimbabwe's Environmental Management Act refer to 30m no cultivation area from the flood line) no cultivation distance from the river bank. We are therefore having conflicts with people who would want to open cultivation land along rivers because that is where we place our hives.*

The interviews also revealed that this practice - stream bank cultivation had a history dating back the past five years; as reflected in the interview with *ZW B2*:

*ZWB2: This problem is less than six years we have had it for the past five years.*

This tension is linked to socio-ecological risks and economic decline (see Section 5.4), such as the recurrent droughts which threatened the food security in Zimbabwe in the past decade, during the following seasons 1986/7, 1991/2, 1994/5, and 2001/3 ( UNEP, 2006). These droughts had a ripple effect on beekeeping as a practice in Buhera as people tried to find quick solutions to the effects of drought (see Section 1.3).

In the period prior to the problem emerging, environmental legislation was policed by traditional leaders together with AGRITEX officers; therefore there were no people who cultivated land along rivers. However, the policing of the legislation relaxed, when AGRITEX extension officers were stripped of the responsibility to regulate environmental legislation due to restructuring in the Ministry of Agriculture. Agriculture and Technical and Extension Service (AGRITEX) was restructured to Agriculture Research and Extension Services (AREX) and Agricultural Engineering (Zimbabwe. Ministry of Agriculture [MOA], n.d.). The role of regulating conservation was given to the Agricultural engineering department although it had no field based extension officers to implement the legislation like AREX (now AGRITEX). Although the name AREX has changed to AGRITEX the role of regulating environmental legislation is not its mandate. This was confirmed by an interview with an AGRITEX officer:

*ZW AG EO: Us as AGRITEX, we do not have the authority to arrest people who are cutting trees within the river course, although we once had such authority. We are seeing it happening but we can't do anything about it.*

When asked who was responsible the officer he said „it was the responsibility of traditional leaders... local council, Environmental Management Agency and forestry commission.’ (T. Kawadza, personal communication, January 2, 2010). However some of these institutions such as Environmental Management Agency and Forestry Commission had no capacity to regulate the environmental legislation due to lack of staff at ward level and resources such as transport.

### **5.7.2 Contradiction in the assumptions of viability and value of field days for beekeeping amongst different stakeholders**

There was tension between the rules of the tool producing activity system; AGRITEX who value field days as an important tool for learning commercial beekeeping and the rules of the central activity system – beekeepers that do not agree with field days as a tool for learning commercial beekeeping. AGRITEX and the beekeepers had different approaches or strategies to field days. According to AGRITEX officers, beekeepers did not want to make material and monetary contributions towards conducting a field day, a tradition derived from conducting crop field days in the area. This is reflected as follows in the interview with AGRITEX officers:

*ZW AG EO:... We also feel we must conduct beekeeping field days, however farmers (beekeepers) do not value making contribution towards such occasions, since they believe that honey is seasonal therefore it will be waste of resources.*

A further analysis of the history of crop field days in the area revealed that it was a networking platform where farmers and companies promoted seed, chemicals and farming implements. For such an occasion to take place agribusiness companies and farmers would contribute money towards the purchase of food and prizes. The occasion would start by touring a farmer’s crop fields, followed by stands of agribusiness companies advertising new technologies. A guest of honour, usually a prominent person in the district, would be asked to grace the occasion by making a speech and presenting prizes to best performing farmers. Before closing participants were given a meal. It was an expensive process for beekeepers to conduct a field day of this magnitude without the intervention of private companies or donors; therefore it was viewed as a waste of time and resources.

On the other hand, ZFDT and its subsidiary company NFP were also falling short in contributing towards conducting a field day. See the response of *ZW AG EO* when asked to seek assistance from buyers

*ZW AG EO: I personally talked to ZFDT but the organisation complains about availability of funds. If it was possible when they buy honey we will organise a field day. They had also promised to come for more workshops, but they did not come back maybe its problem of funds.*

Failure to contribute towards field days by facilitating organisations was caused by inadequate funds to operate in the district as some of the facilitating organisation's money was locked within the Reserve Bank of Zimbabwe's (RBZ) coffers. Based on RBZ's Mid-Year Monetary Policy Statement issued on the 1<sup>st</sup> of October 2007, it highlighted that „balance of foreign accounts of NGOs were to be transferred and centralised at the Reserve Bank of Zimbabwe' (Zimbabwe. Reserve Bank [RBZ], 2007). This was also highlighted by an interview with the acting director of ZFDT when he said „,

*We thought government wanted to make use of this money and return it ... Until when we withdraw up to USD40 000 and we still have up to USD86 000 still with the Reserve Bank of Zimbabwe and we can't access that money. RBZ says it does not have that money it was not given by the Minister of Finance, the Minister of Finance is saying, where did you put this money? What did you use this money that you are asking us to reimburse, what for? The party that used it was ZANU PF, now it is unity government. It is trying to change the whole situation and they are saying no (T. Paradza, personal communication, January 25, 2010).*

This policy of keeping the balance of foreign accounts for NGO happened in 2007 when the government of Zimbabwe was in the foreign currency crisis, and some of the money from NGOs was therefore used to fund some government expenses. With the coming of the Government of National Unity it is now difficult to explain how the money was used, and RBZ had no cash to reimburse. This political situation affected operations of NGOs including ZFDT which was failing to meet its service delivery obligations by contributing money towards conducting field days. See the response of ZFDT Acting Director when I asked him what they had done in terms training in Buhera,

*ZW ZFDT AD: We have trained but we didn't have enough money to follow up. We formed these groups, but we haven't been able to strengthen these groups with more money and training as we did in other areas where we started long back when we still had the funds from Kellogg Foundation.*

### **5.7.3 Contradictions in demands (technical and financial) of new tools and means of reaching or meeting these demands**

Beekeepers were comfortable in using the old mediating tools in commercial beekeeping such as the log hive and others like the *tsatsi* (cultural smoker) unlike the newly introduced

mediating tools such as top bar hives and improved smokers. The new technologies (mediating tools) were introduced in Buhera by ZFDT as a strategy to improve honey quality and productivity (ZFDT, n.d.). These technologies were also aimed at conserving the natural environment – especially the forests (ibid). This was supported by Schmolke (2009) who argued that a top bar hive, like any hive with movable combs, is a technology which allows a beekeeper to check the well-being of bees, and can produce good quality honey. ZFDT also believed that with top bar hives beekeepers in Buhera could produce twice the honey they were producing and that it would be of a good quality. Top bar hives were made from commercial timber, unlike the log hives which were made from indigenous timber, therefore by promoting top bar hives beekeepers were reducing deforestation. *Tsatsi* is believed to be the major cause of wild fires. By introducing an improved smoker, ZFDT intended to save the natural forest from the catastrophic destruction caused by wild fires.

The introduction of the new technology, the top bar bee hive, was met with some resistance from beekeepers, as beekeepers believed that bees in their area shunned improved technology. See the communication I had with a one beekeeper when I asked him about the type of hives they use;

*ZW B1: I think the types of bees which are in this area are adapted to natural hives which are usually hollow tree trunks, therefore swarms in this area colonise cultural hives which resemble natural hives in size and shape. In rare cases bees would colonise improved hives, but if they, did they abscond the hive before making any honey.*

However, when it comes to the use of other improved technologies such as a smoker, beekeepers differed in their views. *ZW B1* for example thought that smokers were good as they reduce incidence of bushfires, while *ZW B2* thought that, it puffed a lot of smoke that would lead to bees absconding the hives and honey would have a bad smell. Further investigation, however, revealed that most beekeepers did not receive training on how to use the improved technologies. If they ever received such training, it was from fellow beekeepers that were conversant with the cultural technologies as shown by the response I got when I asked where beekeepers got training.

*ZW B1:.. even in our groups we have got a lot of youths who would want to learn new beekeeping techniques. If they want to know they have to learn from beekeepers who are already practising.*

The same sentiments were also aired by *ZW B5 & ZW BAC*; *ZW B5 & ZW BAC*, however, noted that the few beekeepers who had been trained in the use of improved technologies, would pass on the knowledge to fellow beekeepers although they had limited understanding of the use of the new technologies such as Kenyan top bar hives and improved smokers. This was also confirmed by an interview I had with the acting director of ZFDT (*ZW ZFDT AD*)

*ZW ZFDT AD: We have trained but we didn't have enough money to follow this up. We have formed these groups, but we haven't been able to strengthen these groups with more money and training as we did in other areas where we started long back when we still had the funds from Kellogg Foundation.*

This also relates to the funding mechanism of ZFDT which is dependent and on donors' agents. In addition, and as explained above the socio-political environment in Zimbabwe was not friendly for NGO's to receive donor funds as the government was intervening (T. Paradza, personal communication, January 25, 2010). Poor follow up could therefore be the key reason why farmers did not appreciate improved hives. In this regard Schmolke (2009) indicates that improved technologies require beekeepers to undergo lengthy training in both theory and practise of hive management for new technologies to be successful. Further analysis of use of improved hives revealed that the cost of materials for making the improved hives was out of reach for many beekeepers in Buhera, therefore cultural hives were the only option available as beekeepers could easily get logs from the forests without paying for the timber and transport. In some cases some enterprising beekeepers would make log hives to sell to fellow beekeepers at less than half the price of an improved hive. This was revealed by *ZW B3* when I asked why he was not using the improved hives:

*Q: Why don't you have improved hives?*

*ZW B3: Timber is expensive we can't get it easily, however some beekeepers were given these hives by ZFDT*

Wainwright (1992) when commenting on why people use cultural hives in Zambia noted similar tendencies as were found in Buhera, that of limited access to improved technologies in Africa because of the higher cost of the material such as sawn timber. If beekeepers lack improved technologies such as improved bee hives they could be discouraged to learn commercial beekeeping as they expected failure to meet product quality and standard.

#### 5.7. 4 Different levels of market empowerment and different pricing powers

There is a tension between the rules of the object producing activity system Natural Food Processors (NFP)<sup>7</sup> and the rules of the central activity system in the pricing of honey. Beekeepers sometimes feel discouraged to practice commercial beekeeping because of what they perceive as the low prices which they get from buyer, Natural Food Processors. An interview with *ZW B1* indicates this problem

*ZW B1:.... The other problem is that even if beekeepers can harvest honey; they are getting very low prices; hence they are getting discouraged to continue with the business (this was also highlighted by ZW B2).*

When I asked when this started *ZW B1* stated that it had started in 2008. However, a further analysis of interviews showed that poor prices were due to two possible reasons; the first reason is that beekeepers were impatient to negotiate for a good price with buyers. This was shown in the interview with *ZW BAC* on pricing and associated with this was the disempowered position of the beekeepers as sellers due to the situation of poverty which left them with little negotiating space or power.

*ZW B AC: We do not know how to do that [pricing]. When beekeepers are impatient during price negotiation they receive very low price. The other problem is beekeepers are poor and they are always price takers.*

Buyers also treated beekeepers as junior partners in business, as they tended to dictate during price negotiation, as suggested by *ZW B5* in this interview:

*ZW B5: We do not have reliable buyers, they type of buyers we have frustrates beekeepers and beekeepers are now discouraged. I think if we had about four buyers, we would then allocate each buyer a buying season.*

*Q: Do you have time to discuss prices or does a buyer dictate the price of honey?*

*ZW B5: Buyers dictates the price of honey, even when the chairperson calls the buyers they dictate the price. Sometimes the chairperson goes to board meetings where he gets a price for honey. We wish that buyers would give beekeepers a chance to negotiate for a fair price of honey.*

Other interviews with beekeepers showed that the history of the problem started during the period between 2006 and 2007 (*ZW B1, B4 & BAC*) which coincided with the unreliability of

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<sup>7</sup> NFP is a wholly owned subsidiary of ZFDT which buys honey from farmers while ZFDT trains farmers in commercial beekeeping; however there is sometimes conflation of ZFDT and NFP by beekeepers as they see ZFDT and NFP as one institution.

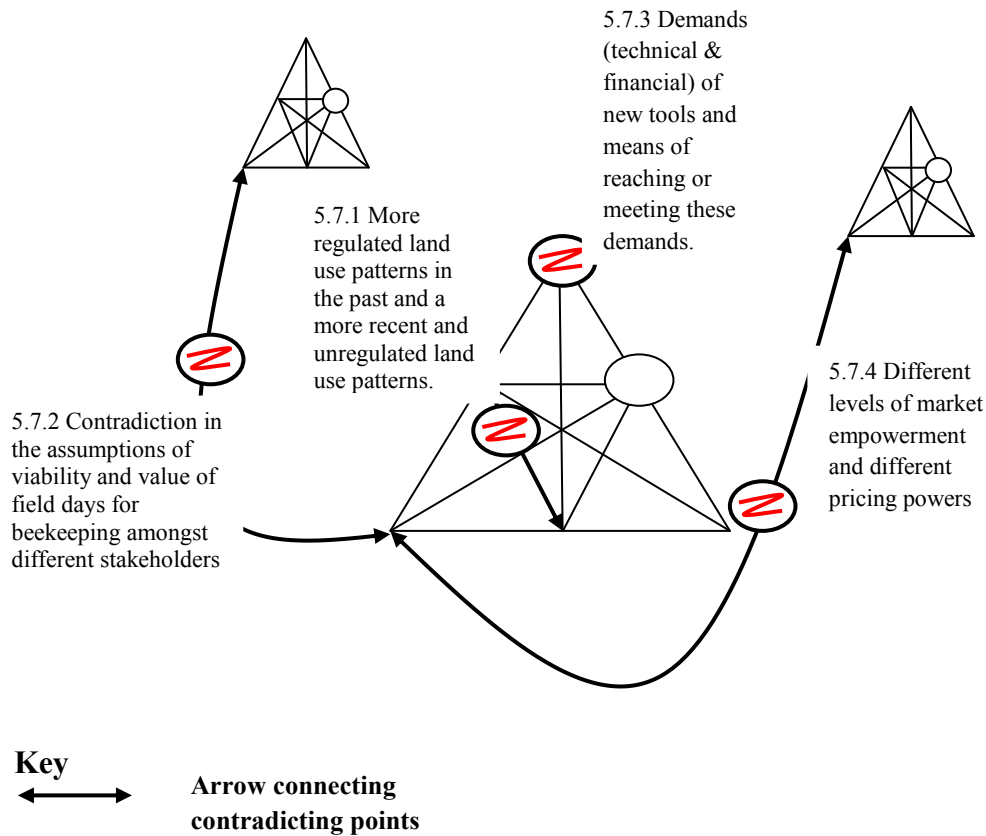
NFP. Beekeepers also expressed their dissatisfaction with NFP's poor communication, as it had failed on several occasions to purchase honey on agreed dates during the period between January 2007 and December 2009. This might have been caused by the poor business operating environment, as annual inflation in Zimbabwe was going at a rate of anything above 6 500% (RBZ, 2007). The unreliability of NFP and the poor business operating environment exposed beekeepers to middlemen who offered even lower prices, as revealed in the interview I had with *ZW B4*;

*ZW B4: There is also another person or cooperative called Tapera which bought honey from us after ZFDT failed. The buyer however got some of our honey on credit because he did not have enough cash.*

### **5.7.5 Summary of tensions and contradictions**

The main contradictions in learning commercial beekeeping influencing Buhera are summarised in a third generation activity system diagram (Figure 5.7) below. Please note that Sections 5.7.1 to 5.7.4 are reference numbers of the sections where the contradictions are described in detail.





**Figure 5.8 Third generation activity system showing tensions and contradictions in learning commercial beekeeping in Buhera**

The figure above shows that learning commercial beekeeping in Buhera Zimbabwe was facing three levels of contradictions, namely primary, secondary and quaternary contradictions. The primary level contradiction is on „Demands (technical & financial) of new tools and means of reaching or meeting these demands,’ (see Section 5.7.3); the secondary level contradiction is on „More regulated land use patterns in the past and a more recent and unregulated land use patterns,’ (see Section 5.7.1); and the quaternary contradictions are in the „Assumptions of viability and value of field days for beekeeping amongst different stakeholders,’ (see Section 5.7.2) and „Different levels of market empowerment and different pricing powers,’ (see Section 5.7.4).

## 5.8 Conclusion

In this chapter I have introduced the learning commercial beekeeping activity system of beekeepers in Buhera and the associated activity systems. I started by describing the early history of human-bee interactions in Zimbabwe. I went on to look at the developments associated with the learning of commercial beekeeping in Zimbabwe and Buhera, describing

key activity systems influencing learning beekeeping activity systems. I also described existing social learning processes in the Buhera activity system, and the major contradictions that are currently influencing learning in these commercial beekeeping activity systems

In the next chapter I will analyse and discuss the proceedings of the intervention workshops, where mirror data on the tensions and contradictions evident in the learning commercial beekeeping activity system was presented to beekeepers and related activity systems, and where possible model solutions were developed using the expansive learning cycle.

## Chapter 6: Intervention Workshops as social learning platforms

### 6.1 Introduction

In the previous two chapters I looked at the socio-cultural histories that shaped the transitions from honey hunting/subsistence beekeeping to commercial beekeeping in Hluleka and Buhera respectively. I also looked at the social learning processes, and identified tensions and described contradictions currently influencing the learning of commercial beekeeping. Table 6.1 below shows different contradiction influencing learning of commercial beekeeping, (see Chapter 4 & 5).

**Table 6.1 Contradictions for Hluleka and Buhera**

<b>Level of contradiction</b>	<b>Hluleka</b>	<b>Buhera</b>
Primary	New practices that ignore new cultural norms and beliefs. Tension within an element of the central activity system - Rules (see Section 4.7.4).	Demands (technical & financial) of new tools and means of reaching or meeting these demands (see Section 5.7.3).
Secondary	Contradiction of norms of practice, tension between community and object of the central activity system (see Section 4.7.3).	More regulated land use patterns in the past and more recent unregulated land use patterns (see Section 5.7.1).
Tertiary	A short-term versus long-term gain contradiction. A tension between object of central activity system and that of object producing activity system (see Section 4.7.1)	
Quaternary	Contradiction of time-space –cultural tools construction, this is a tension between the object of the central activity system and mediation tools of the tool producing activity system (see Section 4.7.2)	Contradiction in the assumptions of viability and value of field days for beekeeping amongst different stakeholders (see Section 5.7.2).
		Different levels of market empowerment and different pricing powers (see Section 5.7.4).

In this chapter I describe the incidents, insights and processes which were involved in carrying out the second phase data generation in the Intervention/Change Laboratory Workshops in Hluleka and Buhera. As was highlighted in Chapter 3, an Intervention Workshop is a developmental work research approach, when subjects are placed in a situation in which they are provided with double stimulation tools to solve an identified problem or construct tools to solve it (Daniels, 2008). Although Hluleka and Buhera were socio-culturally and historically different (as described in Chapters 4 & 5) they shared some common processes in terms of how learning developed within their social context. However, what follows is not a comparison of how learning processes took place in the two cases. Instead in this chapter I will look at the use of the Intervention Workshops as method in modelling new solutions and or new tools to model new solutions on identified critical incidents, troubles and problems, which are related to the tensions and contradictions discussed in Chapters 4 and 5. I will also identify and analyse how social learning processes developed through dialogues in the Intervention Workshops with the help of an analytical tool developed by Wals (2007, see Section 2.11).

This chapter is structured in two sections and in each section I described and analyse proceedings of a specific case study, to retain the integrity of each of the cases.

## **6.2 Case study 1: Hluleka, South Africa**

As mentioned in Chapter 3 the Intervention Workshop for Hluleka was held at the Hilltop Lodge in Mthatha, South Africa on the 2<sup>nd</sup> and 3<sup>rd</sup> December 2009. A total of nine participants attended - four beekeepers from Hluleka of which one was male; one female beekeeper from Bolotwa; one male officer working for Ntinga O.R. Tambo Development Agency; one female trainer working for Makana Meadery and me, a male interventionist researcher. Participants from the following organisations were invited but they gave apologies, DAWF, DEAT and ECHOPA. The processes which developed in this case study were based on the dialogues and interaction among participants from the above listed stakeholders. As reported in Chapter 3, I transcribed the 2 day workshop fully, capturing turns of speech using a # numbering system to keep the flow of the dialogues intact.

### 6.2.1 Clarifying *the* history and object of beekeeping

As was highlighted by Engeström (2008) an Intervention Workshop is based on ethnographic data from the activity setting in which it is conducted (see Chapter 4). As a way of opening up some discussions during the Intervention Workshop, participants introduced themselves clarifying their histories, culture and objectives/motivation in commercial beekeeping. This session helped in unfolding diverse cultural and historical backgrounds as participants were drawn from different areas. This activity did not only act as a way of getting ethnographic data, but it also helped unfreeze the atmosphere for participants to engage in some discussions and build mutual understanding. The session also triangulated information gathered during the first data generation process involving interviews, document reviews and observations where tensions and contradictions surfaced as presented in Chapter 4.

A key focus of the opening session of the workshop was to further clarify the history and the object of beekeeping. Further insights emerged which highlighted the significance of cultural belief and historical backgrounds of beekeeping practices among *amaXhosa*, as shown in these data extracts from the Intervention Workshop transcripts:

*#49. Their believe is that..., bees are ancestors you can't keep them in boxes so because now she wanted to be a commercial beekeeper, she talks to them before putting them into boxes, she is telling them that I am putting you in a safe environment in a warm environment.*

*#50. So in other words she was trying to protect the bees and also to farm them and. or keep them in a safe way or safe environment okay, thank you mama Doko. Enkosi (thank you)*

The extract above shows how the practice of commercial beekeeping contradicted the cultural belief in Hluleka, and shed further light on the contradiction where it was reported that bees were regarded as ancestors (see Section 4.7.4). What emerged here, however, was that while beekeepers were faced with such contradictions, they were learning new ways of keeping bees which mediated the cultural belief and the new practice by asking permission from ancestors to allow the boxing of bees. This shows that there are culturally embedded forms of expansive learning taking place in the beekeepers activity systems.

During the same opening session participants were asked to give their objects of taking part in commercial beekeeping. In order to bring everyone aboard, the word object was replaced by words which were easy to understand such as reason, interest, objective and motivation or

*Injoko* in local language - isiXhosa. The following were some of the objects from participants;

*#46. My objectives are to earn more money and bees are my relatives.*

*#74. Nqa's motivation of beekeeping is to earn money.*

*#85. Motivation is that at the end of the day she will be able to earn money although it will take some time and you can make medicine from bees.*

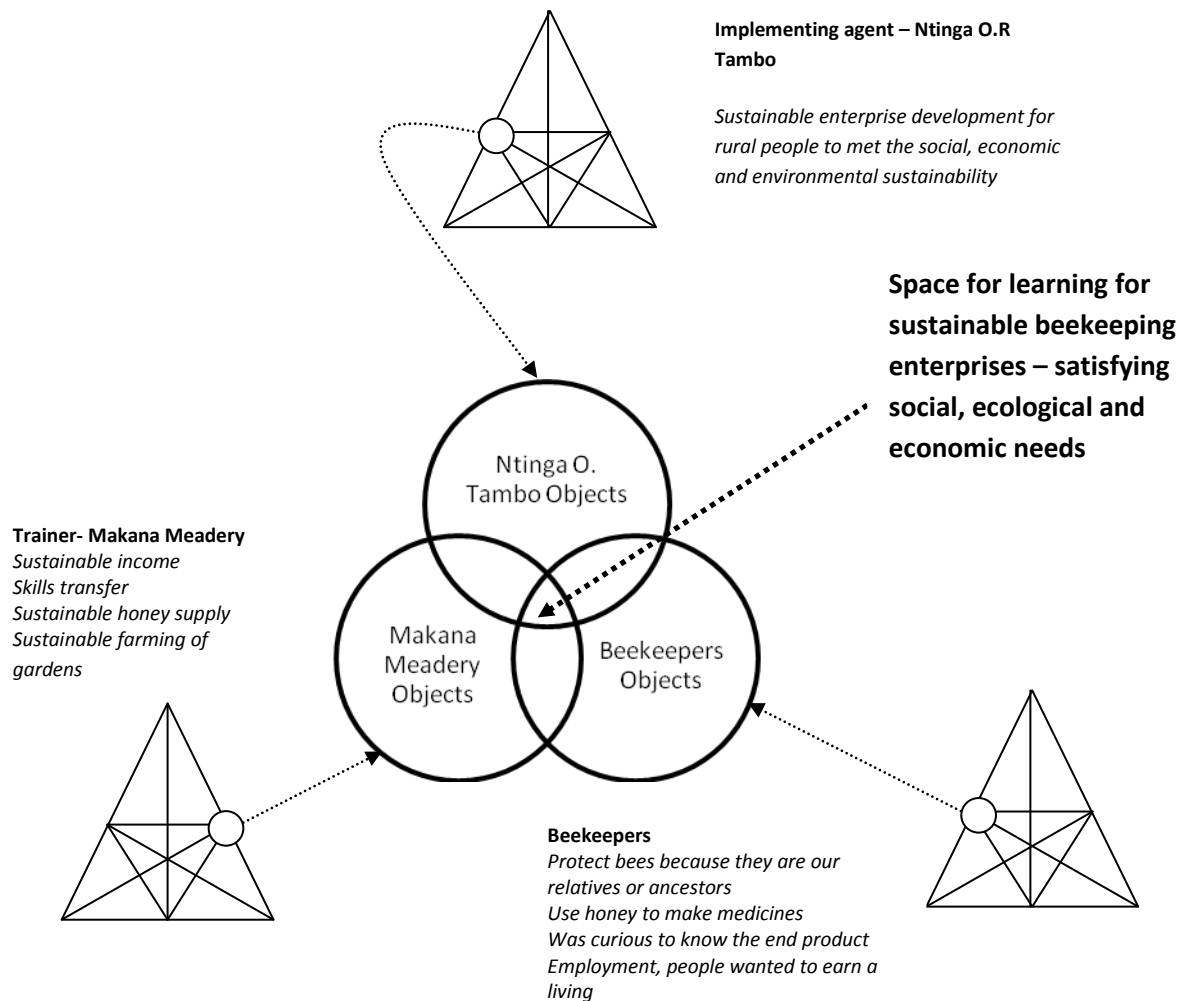
The objects of beekeepers were to earn money to look after the family, in other words beekeeping was being viewed by some beekeepers as a livelihood activity, although some took it a little bit further to include development of some entrepreneurial skills through establishing beekeeping SMME. This process also clarified that some people believed that bees were ancestors therefore protecting their habitats would help in conserving the environment hence this was an ecological object as clarified by the statement #50 from Intervention Workshop, "she was trying to protect bees and farm them." This link between cultural value and economic value of beekeeping was also evident in the references to "bees are my family" and "making medicines" in extract # 45 and # 85 above.

The implementing agent and trainer saw commercial beekeeping from a slightly different perspective. The object of commercial beekeeping was viewed primarily as an activity which would alleviate poverty through the establishment of SMMEs, hence their focus on development of some entrepreneurial skills for beekeepers as they were expected to sell honey to Makana Meadery for further processing into honey wine called Mead. Their object was also conservation related, as beekeeping was expected to bring back old cultural practices of working together, which were believed to be sustainable, such as organic gardening that did not use pesticides that kills bees. This practice was meant to bring about social cohesion and ecological sustainability. See the Intervention Workshop transcript extract #104 from trainer below.

*#104. Motivation of doing beekeeping is to have more honey and also to develop communities, to develop communities, to earn more money to develop the communities to go back to the old system of having their own gardens.*

The objects of commercial beekeeping by participants were summarised by the researcher interventionist as meeting social, cultural, economic and ecological objects thus sustainable development. The identification of the objects also helped in shaping the directions of the discussions as all activities were in line with the interests of participants. Figure 6.1 below

represents how objects were summarised, and shows the space for expansive learning that emerges between the three related activity systems, as described by Daniels (2008).



**Figure 6.1 Space for learning and development of model solution**

*(adapted from Daniels, 2008)*

### 6.2.2 Clarifying tensions and contradictions by participants and mirror data

After reaching clarity on the objects and history of commercial beekeeping from participants, three groups were formed to identify problems in learning commercial beekeeping in Hluleka. Participants were reminded that problem identification (clarifying tensions and contradictions) would take cognisance of the object as envisaged by the space for learning and development of model solutions to attain a shared object of sustainable beekeeping enterprise. As was argued by Engeström (2008) tensions and contradictions can also be

called critical incidents, troubles or problems in workplaces as long as their history can be traced. This session serves to confirm and triangulate tensions and contradictions as they were presented in Chapter 4 under Section 4.7. Below are some of the problems that were identified by the groups, as reflected in the Intervention Workshop data transcript; and analysis.

*#134. Here at Hluleka we didn't select people, they were already selected so that is one of the problems I experienced; I never did my selection process. Secondly is language. The way they talk is different from the way I talk. So I had to change the way I talk. Roles and responsibility of the community and project members, community like to have a steering committee which is not part of the project and you find out that the community have got a lot to say more than the people that are fully involved in projects. People that are selected for project are not interested; they just interested in getting money. New people like Phikiswa, Avuye never get training such people are scared of bees. There is no relationship between beekeepers and government people for example, if unfortunately hives get robbed and beekeepers get to a police station to report, the police don't take any action and there is no government department that is responsible with beekeeping. It does not fall under Health, Agriculture, DWAF or Environmental.*

During the identification and presentation of key incidents, problems and troubles the tensions and contradictions were clarified as they were presented under Section 4.7 as contradiction of short-term versus long-term gain; and time-space-cultural tools construction. This is a tension between the object of the central activity system and mediation tools of the tool producing activity system; norms of practice, tension between community and object of the central activity system; and new practices that ignore new cultural norms and beliefs. See Table below

**Table 6.2 How Intervention Workshop data matched contradictions in Chapter 4**

<b>Chapter 4 identified contradictions</b>	<b>Intervention Workshop data confirming these contradictions</b>
4.7.1 A short-term versus long-term gain contradiction. A tension between object of central activity system and that of object producing activity system.	<i>#132 Beekeeping training, the first one we said, is selecting people to start the project (beekeeping) 2. For me (trainer) is language #133 Please elaborates, when you say ukukhethwa, kukhethwa kanjani (selecting, how is the selection? What was supposed to happen? What happened? #134 Here at Hluleka we didn't select people, they were already selected so that is one.... People that are selected for project are not interested; they just interested in getting money. New people like ... and... never get training such people are scared of bees.</i>
4.7.2 Contradiction of	<i>#159 Number two. We didn't take out mesh for six months. We</i>



<p>time-space–cultural tools construction, this is a tension between the object of the central activity system and mediation tools of the tool producing activity system.</p>	<p><i>failed or misunderstanding during the time of training, on how long the mesh should we put it in a box, whether we should remove it soon after taking bees or leave it but the holes of the mesh were too small, when the bees tries to get into the hive, food fell off their body, therefore they could not make honey.</i></p> <p><i>#169 Number three. Arguments at work reason we didn't listen properly and understand while we were trained. We got message in differently. When doing a shared job (activity), for example when putting out the bees and when I say we are supposed to put the frames in this way, someone says no, they said we put in this way. We argue while we open the bee boxes when we closed it, take one members' idea but it might be wrong. When we come later we realise the problem of putting frames wrongly.</i></p> <p><i>#176 Lizo please wait, I was asking you, the first question was number 2 not removing the queen excluder. Why it is that people did not remove the queen excluder? Why didn't they remove it?</i></p> <p><i>#177 We thought that you put it there for long time and then, you take it out later.</i></p> <p><i>#178 They failed to understand to remove it they thought it's going to stay there.</i></p> <p><i>#179 So it was something to do with not understanding the training</i></p>
<p>4.7.3 Contradiction of norms of practice, tension between community and object of the central activity system.</p>	<p><i>#87 I am Lizo Nomahamle I am coming from Hhuleka Beekeeping Project. I grew up knowing bees when I was a little boy. I knew the bees not for commercialising or making money. I knew that bees stay in forest and no one bring keeps them. When I saw them in the forest I harvest them and throw away things like comb. So in 2007 I was employed by the project to work</i></p> <p><i>#134... There is no relationship between beekeepers and government people for example, if unfortunately hives get robbed and beekeepers get to a police station to report, the police don't take any action and there is no government department that is responsible with beekeeping...</i></p>
<p>4.7.4 New practices that ignore new cultural norms and beliefs. Tension within an element of the central activity system – Rules.</p>	<p><i>#46 My objectives are to earn more money and bees are my relatives.</i></p> <p><i>#47 So if she is related to bees she wanted to be close to bees</i></p> <p><i>#48 I think she is trying to say there is more to connection between her and bees</i></p> <p><i>#49 Their believe is that..., bees are ancestors you can't keep them in boxes so because now she wanted to be a commercial beekeeper, she talks to them before putting them into boxes, she is telling them that I putting you in a safe environment in a warm environment.</i></p> <p><i>#323. Okay let me finish up, the other problems that are to do with conflicts, are to do with some traditional beliefs Sindiswa highlighted some, but I might but say more the first one that</i></p>

	<p><i>bees are ancestors they must not be boxed, but there are some people who believed on that, that could another problem. Then the other one is that we could, when the spouse dies or a husband dies the wife is supposed to be putting black but the bees heat dark colours how do you expect that person to go to beekeeping, do expect that person to go and catch bees. Its traditional believes I not saying it's wrong or right but it's what we believe. And then another traditional beliefs is that which is making us not doing well, people are scared of snakes, they are believe that snakes stay in bees do you still remember that lady in Bolotwa.</i></p>
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Some new problems such as commercial beekeeping as a practice were raised and were not getting enough attention from government departments especially when it came to robbing and destruction of hives. Showing a contradiction in expectation of accountability in governance systems and actual governance practices and services is associated with this. The trainer also highlighted that the point of cultural beliefs required understanding from various government departments which required better communication and networking, if commercial beekeeping was to receive the status that it deserves as a sustainable livelihood strategy. See extract 136, below

*#136. Some people don't believe that bees should keep in boxed. Networking supports for training companies like us and also people like you there is no networking. For example people that support you with money got money from DEAT. Doko got the money from Bright line you don't know the people because you never get to met them, you know, you don't discuss or talk with them. Another thing here in South Africa there is no policy that can help you or protect you as a farmers when there is drought, the government can't help them there is nothing you'll get from government to support you.*

After the presentation of the problems by the groups, as a researcher interventionist I also presented problems (tensions and contradictions) I had surfaced during the first phase data gathering process. The data which I presented as a researcher interventionist was technically referred to as mirror data, as this data triangulated some problems and challenges which had been raised by participants. Although the problems I presented as a researcher interventionist looked quite similar to those of participants they were worded differently therefore a total of ten problems were listed on the flip chart for further analysis in the next session, (see Table 6.3). While not presented in this way during the workshop as my intention was to avoid too much complexity in representing the data as mirror data, these problems were linked to and emerged from the analysis of the contradictions, as indicated below;

**Table 6.3 Summary of problems identified and associated contradictions**

Contradictions identified in Chapter 4	Problems discussed in the Intervention Workshop
4.7.1 A short-term versus long-term gain contradiction. A tension between object of central activity system and that of object producing activity system.	Lack of motivation; Beekeepers were selected based on social development projects; Funding mechanism refers to beekeepers as workers; Failure in understanding the roles of the manageress by beekeepers and other participating stakeholders;
4.7.2 Contradiction of time-space-cultural tools construction, this is a tension between the object of the central activity system and mediation tools of the tool producing activity system.	Language of training material is not easily accessible by beekeepers; Lack of market linkages; Lack of local expertise to train beekeepers;
4.7.3 Contradiction of norms of practice, tension between community and object of the central activity system.	Conflicts between community and beekeepers;
4.7.4 New practices that ignore new cultural norms and beliefs. Tension within an element of the central activity system – Rules.	Cultural beliefs which conflict with commercial beekeeping.
Contradiction in expectation of accountability in governance system and actual governance practices and services <sup>8</sup>	Historically there was no policy support for commercial beekeeping

### 6.2.3 Clustering of the identified problems

Clustering of problems was undertaken to serve two objectives. The first one was to give participants an opportunity to re-examine the problems and confirm whether they really represented what was happening in learning commercial beekeeping. The second objective was to re-examine the problems historically and see which of those listed were within the participants' control to develop model solutions or new tools to solve problems. Technically, the problems were the first stimuli for developing new solutions or tools to develop model solutions. Below are the discussions which lead to the development of three clusters of problems.

*#388. One and two are related, because we are talking about the workers that were not motivated to work up to their best, so it means that some of the people they were not interested in farming bees they just had interest to get a job, so that is why we are*

<sup>8</sup> This was a new contradiction which was surfaced during the Intervention Workshop and it has not number as those in Chapter 4

*saying one and two are related because if they were selected people that were interested they should have been motivated or encouraged, that is why I am saying one and two can come together but I do not know how they are going to be joined.*

*#389. One and two we can join them we can find another common name later, one and two then, do you agree? Others do you agree?*

*Others. Yes, it needs to be added.*

*#390. I want to add what ... said, I want also to add number three and number six, if you do have a selection process you won't have conflicts between beekeepers and community.*

*#391. So number three and what*

*#392. One, two and three*

*#393. One two and three are the same*

*#394. And number six also if we do have selection process we don't have funders wanting workers instead of beekeepers.*

The discussions in the session above represent how one cluster of problems was formed, called **'Project management (strategic issues) and community facilitation.'** However, the process of clustering problems was characterised by differences of opinion because of the different backgrounds of participants. Whilst on the positive side, the process presented some dissonance which was brought about by the arguments which generated. As reflected in #405 from the intervention workshop transcript;

*#405. Let me explain, we won't have a problem with number three conflict between communities and the beekeepers if the funders were part and parcel of the selection process because the reason why the community is fighting with the beekeepers is because they assumed, they are taking them as workers which also the funders taking them as workers if we take out that word as workers and then they won't be any conflict between the community and the beekeepers and there won't be that word. The funders will call them beekeepers instead of calling them workers, just like in Bolotwa. ... doesn't call them beekeepers I mean workers they are called beekeepers, ... is their funder, ...has given the money to them you see how they are using that money it depends on them so we must take out from the funder, the fact that it's part of the selection. You need to involve the funders in the selection process so there won't be that word 'workers,' they will only be seen as beekeepers.*

The above extract describes why beekeepers were identified as employees under the Hluleka project, and how the process of selection could have impacted the learning process. The example of a similar project in Bolotwa was identified as a success story, and a description of how Bolotwa overcame the problem of dependence and lack of ownership by beekeepers was given. Another learning point came when one participant realised the interconnectedness of the problems based on their place of origin - Hluleka, hence the process of clustering problems took more time than was allocated on the programme. See extract below

*#459. You see some of these things there are so linked, that the way how we see them, could be different because of our background because you can't really separate any of these from one another because they are all in Hluleka, I think that is why we are having these small arguments, it's not that we don't agree,...*

Eventually participants settled on three clusters, and the following names were given to the clusters; Project management and community facilitation, Training and Policy (see Table 6.4). From these three problem clusters, the first two clusters of problems were further analysed as they were seen to be within participants' control. The third cluster, Policy, was identified as difficult to work on as there were no policy makers among the workshop participants. See Table 6.4 below.

**Table 6.4 Clustered and grouped problems**

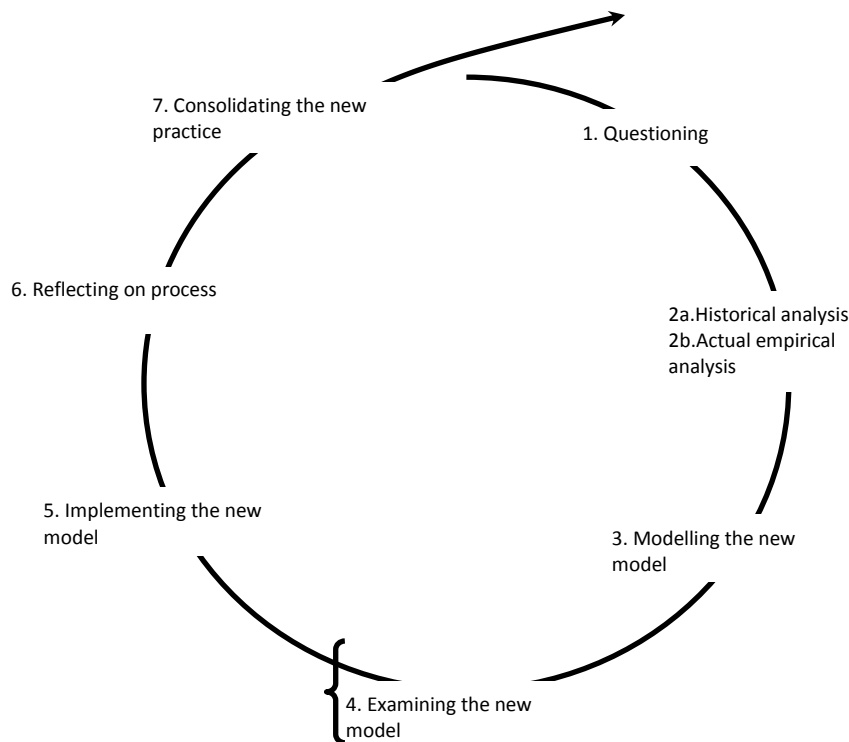
<b>Problems</b>	<b>Cluster name</b>
Lack of motivation by beekeepers Beekeepers selection was based on social development projects Conflicts between community and beekeepers Funding mechanism referring to beekeepers as workers	Project management (strategic issues) and community facilitation
Language of training material is not easily accessible by beekeepers Lack of market linkages Failure to understand the role of the manageress by beekeepers and stakeholders Cultural beliefs conflicting with commercial beekeeping	Training
Lack of local expertise to train beekeepers Historically there was no policy support for commercial beekeeping	Policy

#### **6.2.4 Problem solving approach and re-examination of problems**

Having clustered the problems and after selection of two clusters of problems to work with as first stimuli, I as the interventionist researcher, presented the expansive learning cycle to participants as is provided by Daniels (2008) and Engeström (1987, 2001 & 2008). Presentation of the expansive learning cycle was meant to orient participants to the learning journey which we were going through. It was highlighted that the knowledge to be generated and the learning was happening during the process, therefore there was no-one who had the role of the teacher. Below are some explanations and a diagram of the expansive learning cycle as it was presented to the workshop participants by myself the interventionist researcher.

1. *Questioning*: drawing on researched evidence to question existing practice or existing wisdom;
2. *Analysing*: tracing and analysing the history and current dynamics of learning and developmental problems in the practice;
3. *Modelling*: involves the construction of new ways of working or engaging with practice;
4. *Examining the model*: experimenting with the new model to fully grasp its dynamics, potentials and limitations;
5. *Implementing the model*: working with the model in real life situations and monitoring its impacts;
6. *Reflecting*: Using monitoring data to evaluate the model for refinement; and
7. *Consolidation*: Implementing the refined model into a new, stable form or part of practice.

As a researcher interventionist I pointed out that the workshop intended to go as far as stage 3 or 4 of the expansive cycle as shown in Figure 6.2 below because the completion of completing the whole process would often take a number of years. However, some work plans were to be developed for participants to continue the problem solving process based on the foundation set by the interventionist research.



**Figure 6.2 The expansive learning cycle**

*(source: Engeström 2001)*

Traditionally an activity system triangular model is used within the expansive learning cycle as the second stimuli. In Hluleka the activity system triangle was not used, however some problem solving questions were used as the second stimuli. As an interventionist researcher I felt the activity system triangular model was too complex a tool to explain and be understood by the participants within the limited time frame I was working in. A similar point was made by Mukute (2010) when he worked with the second stimuli process. The problem solving questions, listed in Box 6.1 below, were used to guide participants to move between the past, the present and the future during analysis of problems and developing new solutions or tools for developing model solutions (Daniels, 2008; Engeström, 2008).

**Box 6.1 Problem solving questions**

1. What is the objective of commercial beekeeping training?
2. Who should be trained in commercial beekeeping?
3. What should be selected?
4. Why is it that rural people are not practising commercial beekeeping?
5. What is the history of not practising commercial beekeeping?
6. What are the effects of practising commercial beekeeping?
7. How can we make sure communities can practise commercial beekeeping?
8. What strategies can we use for communities to practise commercial beekeeping?

Please note that the problem solving question repeated some of the activities highlighted in Section 6.2.1 such as looking at the socio-historical origins of problems. These two activities were however at different levels. The first process was broader and it focused at learning beekeeping in general, whilst the second process was specific to the problems at hand.

Before splitting participants into groups to develop model solutions or tools to model new solutions for specific cluster problem, I reminded them of their shared object of learning sustainable commercial beekeeping as shown in Figure 6.1. All model solutions or tools to develop model solutions were supposed to satisfy the shared object as shown by the intersection of the three cycles representing interests from the three interacting activity systems namely beekeepers, implementing agent and trainer. This space is what Daniel (2008) argued was for showing boundary crossing through networking of objects from at least two interacting activity systems.

The process of developing model solutions or tools to develop model solutions by groups was followed by plenary presentations. Plenary presentations were meant to critique and comment on groups' work. It was also meant to re-examine the model solutions or new tools to model and see whether they could pass the test of the context in which they were meant to be used. See Figure 6.3 below of a participants working in a group and a presentation.



**Figure 6.3 Participants working in a group and group presentation**



## 6.2.5 Monitoring social learning in a Intervention Workshop

In order to answer the research question, „How does social learning develop in relation to the sustainable harvesting of natural resources in rural contexts of supported transition to commercial beekeeping?’, I used Wals’ (2007) analytical tool to map social learning. Wals (2007) describes the steps of social learning as being comprised of a process of analysis and orientation to one’s frame, which is followed by deconstruction (sometimes referred to as de-framing). He further argued that when the monitoring of learning is done in a collaborative setting, where dissonance is properly managed, cultivated and utilised, participants can come up with new ideas through a process of co-creation (ibid). Wals (2007) further argued that monitoring social learning processes such as that in the Intervention Workshop follows the steps below (as noted in Chapter 2, Section 2.11):

- *Orientation and exploration* – this was explained as an open-ended social process of learning together that involved the identification of key actors and key issues of concern to address in a way that connected their prior experience and backgrounds to learning commercial beekeeping, enabling the emergence of motivation and a shared sense of purpose;
- *(Self) awareness raising* - learning at this level was monitored when beekeepers as individuals elicited own frames of reference relevant to issues and some challenges in the learning of commercial beekeeping;
- *Deframing or deconstruction* – observing learning through taking note of key actors’ articulation of these challenges and others’ frames through a process of exposing alternative frames about the practice of commercial beekeeping;
- *Co-creating* – observing learning by taking note when ideas were constructed and clarified together;
- *Applying/ experimenting* – observing learning through looking at collaborative action using the newly co-created model solutions or tools to develop model solutions on existing problems on learning commercial beekeeping;
- *Reviewing* – observing learning by assessing the degree to which the self determined issues or challenges on commercial beekeeping had been addressed, and also reviewing the processes that would have occurred in the way the issues/challenges were originally framed, through a reflective and evaluative process.

Through this conceptual tool dialogues or interactions among participants were analysed during development of model solutions or tools to model new solutions in an Intervention Workshop. It is also important to highlight that due to time and resources limitation only four of the six steps were relevant to the study and thus the methodological framework for monitoring the learning processes could therefore only be partially implemented.

### **6.2.5.1 Monitoring social learning during development of model solutions to the problem cluster ‘Project management and community facilitation’**

The problems clustered under ‘Project management and community facilitation,’ were clarified during opening processes of the workshop as described in Section 6.2.1 above. This was done again for specific cluster of problems. This marked the first step *orientation and exploration*. By asking questions that clarified the history and the background, I as the interventionist researcher, motivated participants to talk about project management and community facilitation, see extracts #133 and #135 from the workshop transcript;

*#133. Please elaborate, when you say ukukhethwa, ukukhethwa kanjani (selecting, how was the selection?) What was supposed to happen? What happened?*

*#135. Here at Hluleka we didn't select people, they were already selected so that is one of the problems I experienced; I never did my selection process. ...roles and responsibility of the community and project members, community like to have a steering committee which is not part of the project and you find out that the community have got a lot to say more than the people that are fully involved in projects. People that are selected for project are not interested; they just interested in getting money. New people like ...&... never get training such people are scared of bees.*

The questions and answers given above clarified the history of the problems under the cluster project management and community facilitation, as participants talked about the selection criteria which did not take cognisance of people's interests when beekeepers were selected, instead it focused on the object of getting money; hence these beekeepers were not motivated by the practice. This was also confirmed by the contradiction of ‘A short-term versus long-term gain contradiction,’ (see Section 4.7.1). Despite the project focusing on commercial beekeeping, people learned that it had other motives for creating employment to alleviate poverty. Clarifying the problems as explained in Section 6.2.1 above it further motivated people to open up and give their own understanding of the problems; thus the next step called (self) awareness became significant in local processes (Wals, 2007), as indicated in #190 & #200 below

#190. *She is saying the other problem was at the beginning, when the project was starting there were no supervisor or managers, everybody had a say in terms of managing the project. Then when the same kind of roles and responsibilities were transferred to the manageress and supervisors then the problem started.*

#200. *The reason for not listening to each other..., let's say we are harvesting at Mjini as I am from Mjini, someone from Mjini will say, they said these bee hive suppers must be placed like this, and beehive frames like this. If I try to argue and give my opinion she will say that I am not the manager because she was also part of the training and she was also trained so I have to keep quiet although I could be right.*

A lady who was there when the project started pointed out the fact that the problem only started when the implementing agent employed a manageress and two supervisors to monitor how beekeepers were learning and carrying out beekeeping activities to meet project goals as outlined in the proposal. The beekeepers felt that the manageress and supervisor had assumed ownership and responsibilities as they introduced new tools such as daily attendance registers and monthly wages.

One question which needed clarity was whether beekeepers were aware of the roles of the management. This question *deconstructed or deframed* participants' understanding of the problems at hand. See extracts #205 – 212 and #238:

#205. *Do you know ... 's (manageress) job?*

#206. *I just know that she is a manager.*

#207. *... do know .... 's job?*

#208. *I know she is the manager, but I don't know where does her job start and end.*

#209. *....., what about you?*

#210. *I don't know her job; I just know that she is the manager.*

#212. *Is it not that people they don't understand what... is supposed to be doing is what is causing problems?*

#238. *May be that is why it failed. Myself and 49 Hluleka beekeepers we had our own workshop when we had training. Most of the problems they had were management problems, the way ... was managing them, and the only problem which was causing other problem was because ... didn't come to work on time. When we were discussing the problems, when we were trying to solve the managing problem, ... wasn't there she came late, so that is one of the other problem that we couldn't even finish discussing and even to solve because the person we were discussing was not there, so it means that we were just stabbing her in her back.*

The deconstruction of the role of the manageress brought about some learning and understanding as to why beekeepers and even the trainer faced work related conflicts while working with the manageress. The trainer in #238 above also noted why several efforts she had made to resolve the conflict had failed.

The deconstruction also opened up space for *co-creating* as participants' new understanding provided space for developing a new solution. It was clarified that there was no more money to pay beekeepers to carry out the project activity, although they were supposed to take over project ownership. See extracts from the workshop dialogues below:

*#709. Now that there is no more payment, do you still need a manager and the supervisor or we need a committee.*

*#712. He is saying that, now that there is no payment, the responsibility should be shared, which means the committee system should be reintroduced and everybody now who is the member of the committee should share his responsibility to take the project forward.*

*#713. What do the others say, are they in agreement or...*

*#715. Buzz. They need the committee*

The participants realised that Hluleka beekeepers needed their own project committee not other external people (e.g. manageress) to take charge of how they were implementing the commercial beekeeping activities. The reasons why they needed a project committee was its projected ability to deal with the problems of motivation as clarified below in the following transcripts extracts:

*#717. She prefers that committee, because by then people were working much better; they owned the project because they all play a big role in the project no one was giving them some instructions on what to do.*

*#719. I am agreeing with..., I prefer to go back to the committee because now there is no payment and no one will accept someone to say or talk strong to anyone and everyone must feel that she or he doing this because she enjoys it and has an authority to do it not to depend on anyone for instructions.*

*#721. Do you think that if the responsibilities are shared people will start to attend to beekeeping; people will start to be motivated.*

*#747. The other thing which I am trying to take away is that when there is a committee, people will feel that there are not workers of anyone because there is no manager.*

*There will be just a committee so they can't be workers of their own committee...*

The whole project had brought about learning to participants in a social context, but most importantly a new tool emerged as a model solution; namely, the project committee, to work in resolving the cluster of problems under „Project management and community facilitation.’ An action plan was developed to look into the way in which this would be implemented; however analysis of how it was taken forward was beyond the scope of this research, as it was only possible to trace the learning processes as far as the emergence of model solution (see Chapter 7 for recommendations in this regard).

## 6.2.5.2 Monitoring social learning during development of model solutions to the problem cluster ‘Training’

When participants identified key problems to cluster under ‘Training,’ during the *orientation* process they elaborated that the cluster was strongly linked to the role of cultural beliefs in learning commercial beekeeping. As participants were orienting and exploring problems of learning commercial beekeeping they identified one of the key challenges of learning commercial beekeeping as the cultural belief that bees were considered to be ancestors by strong cultural believers in the Eastern Cape Province of South Africa, including Hluleka. This cluster of problems confirmed the contradiction under Section 4.7.4 ‘New practices that ignore new cultural norms and beliefs.’ The following dialogues extracts show this issue in more detail:

*#47. So if she is related to bees she wanted to be close bees*

*#48. I think she is trying to say there is more in terms of connection between her and bees...*

*#49. Their belief is that Xris; bees are ancestors you can't keep them in boxes...*

*#323. Okay let me finish up, the other problems that are to do with conflicts, are to do with some traditional beliefs Sindiswa highlighted some, but I might but say more the first one that bees are ancestors they must not be boxed, but there are some people who believed on that, that could another problem. Then the other one is that we could, when the spouse dies or a husband dies the wife is supposed to be putting black but the bees heat dark colours how do you expect that person to go to beekeeping, do expect that person to go and catch bees. Its traditional believes I not saying it's wrong or right but it's what we believe. And then another traditional beliefs is that which is making us not doing well, people are scared of snakes, they are believe that snakes stay in bees do you still remember that lady in Bolotwa.*

By identifying and bringing to the fore the role of culture and cultural history in learning commercial beekeeping, the trainer from Makana Meadery was motivated to highlight some of her experiences and challenges in training commercial beekeeping in Eastern Cape Province, which reflected the process of engaging, and *(self) awareness* as described by Wals (2007). Key aspects that were raised by the trainer were the diversity of *isiXhosa* dialects that were not easy to capture in one training manual, for example *Phukula* could mean either honey harvesting or honey hunting. As indicated in Chapter 4, other cultural beliefs conflicting with the practice was the rule that widowers should wear black clothes as sign of bereavement although bees hate dark colours; the destruction of hives in some areas; and gender issues with regards to addressing traditional leaders. It was noted that the lady trainer could not communicate directly with the traditional Chief therefore she had to

communicate through a male colleague. All these problems are highlighted in the dialogues numbered 140, 350, 552 & 562 below

*#140... The language, I have to learn each time I visit a certain area I have to learn a new language...*

*#350. We started to translate the English to Xhosa and English to Afrikaans we started on doing Afrikaans, but not Xhosa the problem was that like phakula means to harvest to me but to them phakula is to means to hunt*

*#552. I can't just say to Hluleka community if you are widowers you can't go to the bees wearing black clothes, when you get there you have to take off your clothes and wear the bee suit. I cannot say so to the community members.*

*#562. I said to you in Bolotwa it can be accepted, I know in Qoqodela it wasn't, some few of the boxes that were there, were broken by some stones because it is not accepted, I know in Hluleka when I arrived there I was not allowed to talk to the Chief, so I had to keep on asking ..... to talk to him and him also passing the message through him...*

A moment of *deconstruction or deframing* came when some participants questioned the logic of introducing a livelihood project which had activities that conflicted with people's cultural norms without seeking approval first, as highlighted in dialogue #565 below:

*#565. The approach,... what is important... firstly for example if beekeeping is wanted by the community of Hluleka. The community of Hluleka should be aware of all these things you are talking about no matter what it is in form of training or workshop. For example ..., these are problems beekeeping has and are related to cultural beliefs ... This is an idea but we have these challenges if you want to accept it ... or you call the influential stakeholders the Chief, municipality whoever and firstly talk to them about it and then you go to the larger community.*

After the issue of cultural belief had been deconstructed and some participants had brought some new understanding the trainer felt that she needed help to develop a strategy to solve these problems as she did not want the Qoqodela experience anymore, hence the process led to a process of *co-creation*. The following discussions show how a new tool was developed for the cluster of problems under „Training’ as discussed below:

*#649. Through networking Hluleka won't be having these problems of lack of motivation. Bees absconding and those (Hluleka people) are not doing anything about it.*

*#650. But do you think networking alone could solve that*

*#651. No*

*#652. What else do we need as the strategy?*

*#653. At local level*

*#654. I mean in Hluleka, what do you think?*

*#656. Need local expert (mentors)*

*#809. The only difference is that may be the mentors, because there are already successfully beekeepers because they came across these problems before and now know how to solve them.*

Initially people had suggested networking as a possible solution, however after some re-examination, it was agreed that local experts in the form of mentors were the best answer to a cluster of problems under training. Local mentors were identified as successful beekeepers who had managed to deal with tensions and contradictions of commercial beekeeping at local level. These mentors were also expected to work with trainers in providing day to day coaching, see discussion extract below:

*#804. Mentors probably they will be trained like with the professional trainer like you, and then when you go to train beekeepers you go together with mentors, so when you leave the area mentors will have some work through follow up.*

Mentors as a tool would also help to mediate the tensions and contradictions identified in Section 4.7.2, Contradiction of time-space –cultural tools construction, this is a tension between the object of the central activity system and mediation tools of the tool producing activity system.

## **6.2.6 Summary**

The two engagements with the problem clusters in the Hluleka case study show how, through social learning processes of *orientation*, *self awareness*, *deframing* and *co-creation* new solutions are created within the expansive learning cycle. In both cases new tools for improved mediation were proposed as new model solutions; a committee to solve problems and contradictions associated with project management and the use of local mentors to solve problems and contradiction in the training process. It was not within the scope of the study to monitor the implementation of these model solutions, but recommendations to this effect are made in Chapter 7.

## **6.3 Case Study 2: Buhera**

The Intervention Workshop for Buhera was held at Chapanduka Primary School on the 2<sup>nd</sup> and 3<sup>rd</sup> of March 2010. Fifteen people attended; eight male beekeepers (two were also village heads) from participating groups around Chapanduka business centre in Buhera. Other actors that participated were the Buhera beekeepers association – one male, headman; one male each from Zimbabwe Farmers Development Trust and Natural Foods Processors, one male

teacher from Chapanduka primary school, two officers - a male and a female from AGRITEX; and me, male interventionist researcher. Please note that headman and village heads are sometimes referred to as traditional leaders, as their leadership is customary. Other people who were invited, but who gave apologies were the AGRITEX Apiculturist and an officer from the Ministry of Small to Medium Enterprises. As reported in Chapter 3, I transcribed the 2 day workshop fully, capturing turns of speech using a # numbering system to keep the flow of the dialogues intact. The next section describes the process during the Intervention Workshop.

### 6.3.1 Clarifying history and objects of beekeeping

Participants at the workshop were asked to make self introductions and describe their first encounter with the commercial beekeeping practice and how it developed from there on. This process served two objectives, the first was getting the background and history of beekeeping in Buhera and how it developed over time, and on the other hand it elaborated participants' objectives, reasons and interests in carrying out beekeeping. Below is an extract of the history and object of an old man who started beekeeping in 1942 and others beekeepers

*#3: .. I then started to put more effort in 1942... 1949...1952 that is when I had five hives. I would harvest honey for household consumption, sell locally, cultivation of fields and to give people. It was quite important because I would support my family from that. In 1980 that is when we started to get some buyers. We then went to Mazowe, and we were trained in honey grading, how honey is graded. After that we stayed for sometimes and I was selected the Chairman while in Mazowe with my colleagues from Melseter (Chimanimani) and Chipinge. After that all other beekeepers joined when I was already in the business. ...We started selling honey to Colman, then Shimolke and then ZFDT which we have today....Honey is very important it is food and a source of income for all my household needs....I have got five sons and I sent them to school up to form four (ordinary level) so as my two daughters with money from selling honey. Even paying lobola (bride price) for my sons, they paid lobola with money from selling honey, so as household requirements such as bedding material, food and others it was all through selling honey, even up to now honey is providing for our requirements...*

*#27: I would want to say beekeeping is a programme which provides food for the family, and also when you sell honey you would get sugar (grocery) and money to pay for school fees....*

*#30: If you are saying household problems, what do you mean?*

*#31: I now get money to buy sugar, take grain to grinding mill and to pay school fees for my children.*

The local history of beekeeping in Buhera revealed that the practice had been in place for a long time although people had been keeping bees to meet household food security and social



obligations such as *Nhimbe* (communal labour especially for crop cultivation), cash for paying *lobola* (bride price); and other cash obligations such as school fees and buying household tools or equipment. More information on objects of beekeeping was clarified when *beekeepers worked in groups and revealed the following objects:*

*#40: Our first objective of beekeeping is to sustain our lives through supporting our families, neighbourhood and country.*

*#41: Second objective.*

*#42: To get food, to get medicines for those who are sick.*

*#43: These are the objectives of the farmers if you see them doing beekeeping these are their expectations.*

Some stakeholders, such as the traditional leaders were interested in seeing beekeeping curbing deforestation, which was an ecological object, see extract below:

*#46: It's almost like what is happening has been said, beekeeping is for family to get money for up keep, it allows people to get money to pay for school fees, and buy livestock such as goats, hens and even to built your home if you have sold large quantities of honey. It also allows trees to be protected; therefore it allows conservation of natural resources. That is what I have got.*

History of beekeeping by other beekeepers showed a similar trend as the one outlined in #3 above as most beekeepers had been born into beekeeping families, as was also reported in Chapter 5 Section 5.3. Although beekeeping had been practised on a subsistence basis, extract #3 above reveals that a turning point was in 1980 when beekeepers turned commercial with the assistance of individual buyers who even offered some basic training in grading.

The object of beekeeping by other partners such as the agricultural extension officers was to improve the practice's business performance. The Agricultural extension officer wanted beekeepers to engage with beekeeping as a real business, as highlighted in extract #44 from the workshop transcript:

*#44: Our first objective is for farmers to keep a lot of bees, sell honey in order to get money to sustain themselves. For farmers to understand that beekeeping is a real business; farmers should be able to grade honey; farmers must be able to prepare wax. Farmers should understand that honey has medicinal properties to treat some ailments such as TB (tuberculosis).*

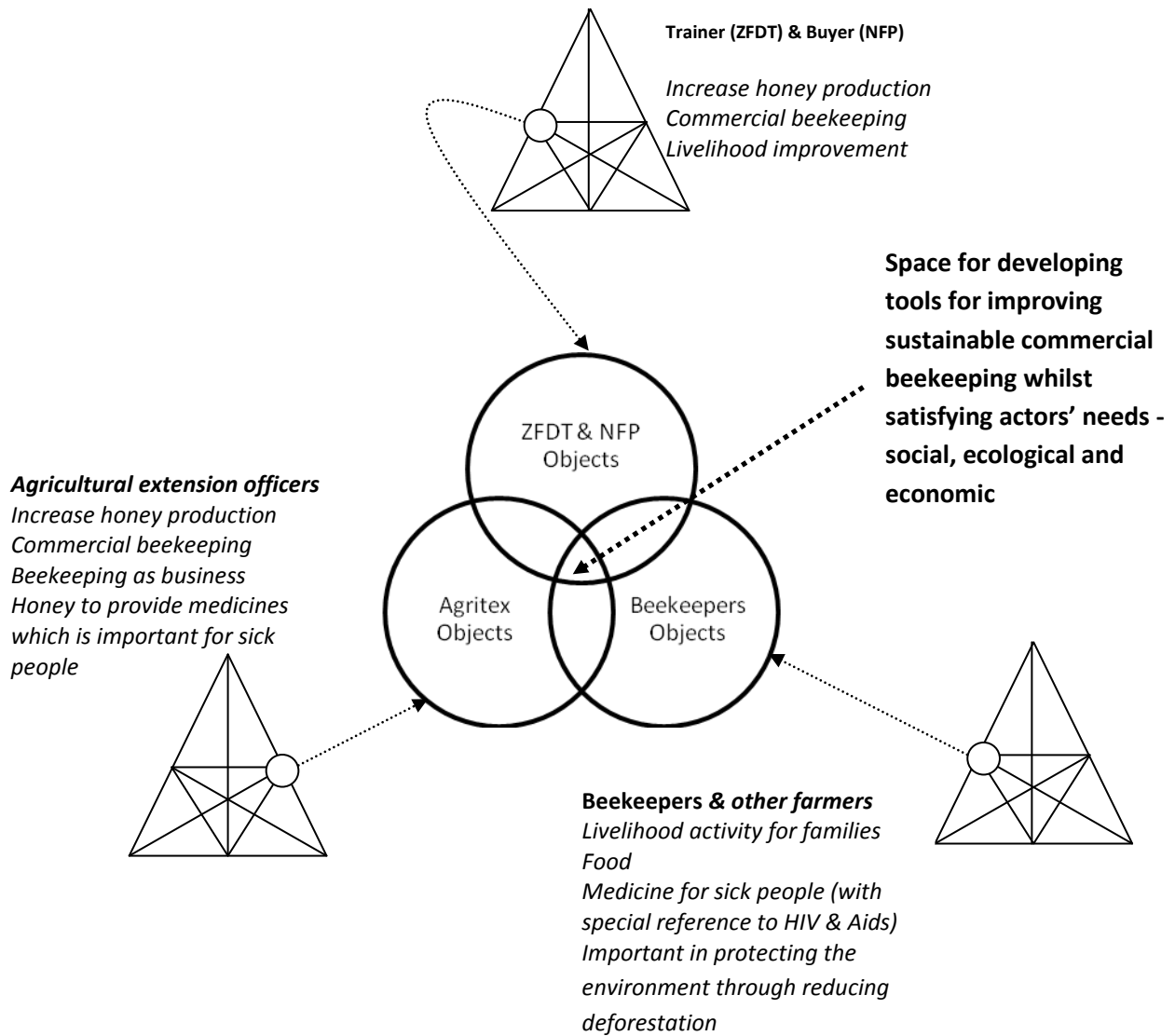
The objects of beekeeping by ZFDT and its subsidiary company NFP were to improve beekeepers' livelihoods, through increased honey and crop production in what was referred as a sustainable farming system. These two objects were in the interest of the two institutions

as shown by a banner which was displayed in the workshop, reflected in the photograph (Figure 6.4) below.



**Figure 6.4 Banner showing the object of ZFDT**

Given the above divergent ideas and objects about beekeeping, I as interventionist researcher had to pull together the information in a diagrammatic representation for participants to see the boundary crossing objects of both the common interests and the divergences (see Figure 6.5). The diagram also presented a fertile space for developing new tools to improve commercial beekeeping in Buhera.



**Figure 6.5 Space for developing sustainable commercial beekeeping in Buhera**

*(adapted from Daniels, 2008)*

### 6.3.2 Clarification of tensions and contradictions

The purpose of this session was to develop further insights into the tensions and contradictions identified in phase one of the research, using mirror data and participants' understanding of commercial beekeeping practices in Buhera. On the other hand I as the interventionist researcher was also giving feedback and triangulation with participants, the insights into tensions and contradictions surfaced in the first phase of data gathering; interviews, observations and document reviews as reported in Chapter 5 (see Section 5.7).

Participants were split into three groups according to their interests in beekeeping, namely Agriculture extension officers, beekeepers and buyer/trainer. Each group identified problems, challenges and drawbacks in commercial beekeeping. The discussion below shows some the challenges that were identified by stakeholders.

Agricultural extension officers identified three challenges; namely, manifestation of national politics at local level, natural disasters such as rainfall pattern and failure to conduct beekeeping field days, reflected in the dialogue extract below:

*# 58: The following are the draw backs:*

- a) Politics, if we mean politics it will be difficult for us to coordinate with the prevailing political environment. I think if we are doing beekeeping it will be real business with nothing to do with politics. There is a problem when someone is supporting political party Mugodo and political party Musharu, there is tension. That tension is hindering the progress of learning commercial beekeeping. For us as AGRITEX to conduct meetings where there is that broken line it will be difficult [polarisation]. I would want farmers to understand that politics is politics, when it comes to business issues we leave politics and work together, without politics. Therefore politics is affecting coordination on our part;*
- b) Unreliable rainfall, as extension officers if there are no rains, bees do not also produce a lot of honey (honey yield low). Beekeepers become discouraged, imagine it's a new beekeeper with five hives and all hives are absconded. It is one of the drawbacks;*
- c) Fields days, currently its one of the draw backs because we haven't had any, it is one of the areas. Field days are a learning tool and they are motivational, if we have field days people will be seeing honey and how hives are made. Field days are therefore a learning tool which allows people to learn through seeing.*

Beekeepers felt that their challenges in commercial beekeeping were socio-economic, (such as pricing, poor communication with buyer and theft); and socio-ecological (deforestation, drought and poor harvesting techniques), as reflected in data extract #63

*#63: Farmers what we realised is causing us not learn commercial beekeeping is:*

- a. Poor pricing of honey, our honey is bought as comb honey therefore our prices are poor. And it is just money to meet our social needs;*
- b. Deforestation is reducing our honey harvest;*
- c. Our buyer ZFDT is also a problem, it buys honey on credit, and it does not teach farmers about beekeeping, it comes, buys honey and it goes. It does not have the opportunity to train farmers such as sustainable harvesting of honey with bee suits. Some farmer's burn bees at harvesting they are only concerned about selling honey while destroying bees. ZFDT does not find time to train farmers so that they know the importance of beekeeping;*
- d. ....*
- e. Drought is reducing our honey yield, so as pest which attack bees, ants, thieves and honey badgers also reduces our honey harvest;*
- f. Lack of coordination with buyers is the last one.*

On other hand the main concern of the buyer/trainer was honey productivity, as the representative felt that the production technique of using cultural log hives was ecologically and economically unsustainable as it promotes deforestation and poor honey yields, reflected in dialogue extract #71 below:

*#71...The other issue is the use of hives, you seem to use a lot of cultural hives which is cylindrical the maximum you can get is fifteen or so kilograms, while Kenyan top bar hives can get up to forty five kilograms...*

As interventionist researcher, I presented my findings from interviews, document review and observations as reported in Chapter 5. As in the Hluleka case study, I used the notion of problems in place of contradictions to mirror the data as this was a more accessible way of doing this. The problems identified by participants, together with those identified by myself in phase one as interventionist researcher, and were listed as shown in Box 6.2.

#### **Box 6.2 List of problems in Buhera**

1. Failure to conduct field days – field days act as a platform for farmers to learn while seeing others
2. It was taking long for farmers to adjust to new technologies such as modern hives- Farmers believe that bees are shunning Kenyan top bar hives
3. Unreliable rainfall – farmers are spending some seasons without harvesting honey hence that causes frustration amongst farmers
4. Conflict on pricing of honey (how do we price our honey)
5. Destruction of forests
6. Constitution and governance
7. Funding of training of commercial beekeeping and manpower
8. Politics- Its difficult to coordinate since farmers of different parties are unable to meet and share ideas for developments sake
9. Beekeeping as a secondary activity
10. Communication (Calling for dates to purchase in local areas and coming to buy honey by ZFDT)

This was used as the basis for further discussion and prioritisation as described in the next section.

#### **6.3.3 Problem prioritization and problem solving approach**

In Buhera participants did not want to cluster problems as was the process in Hluleka, instead they preferred to develop model solutions or tools to develop model solutions for three problems they had prioritised from the list of 10 above. The problems that were picked were

pricing (no.4) field day promotion (no. 7) and tree cutting (no.5) as reflected in the discussion interactions below (# 192 – 195; #213 & #214).

*#192: Number one, pricing.*

*#193: Do you want us really to look at price, what do others say? Is pricing okay? What do others say?*

*#194: Three, field days promotion.*

*#195: Field day promotion; that is alright, can field day promotion be combined with training materials?*

*#213: ... The other issue which we need to discuss and we need traditional leaders to help us with is tree cutting and opening of new cultivation lands.*

*#214: On that issue we agreed that village heads should be there because they are the ones allocating cultivation land along rivers hence promoting stream bank cultivation.*

From these prioritised problems some model solutions or new tools to develop model solutions were developed in plenary for the problem of tree cutting, whilst the other two problems pricing and field day promotion, were discussed in groups. The model solutions or new tools which were developed in groups had however, to be presented in plenary for re-examination. Participants were selected to develop model solutions for a certain problem based on prior experience and interest, for example Agricultural extension officers worked on field days whilst the buyer/trainer representative was in the group discussing pricing. It is also important to note that all problems were looked at in view of the vision of developing a sustainable beekeeping practice as is represented by the space of shared objects in Figure 6.5 above. Just as for Hluleka the identification of the problems by participants acted as the first stimuli, whilst the second stimuli were problem solving questions (see Box 6.3 below). As the interventionist researcher I had to explain the process of the expansive learning cycle before the problem solving session described in Section 6.1.4 above. The explanations which were given helped the participants to get a clear understanding of and appreciation for the expansive learning approach and its focus on co-creating new model solutions. As highlighted by Hill *et al* (2007) this process should give participants a comprehensive understanding, so that they are able to develop model solutions or tools to develop model solution which must be easy to implement or experiment in stage 5 of the expansive learning cycle (see Figure 6.1). The problem solving questions for Buhera were slightly different from those for Hluleka, as the levels of development in commercial beekeeping situations for the two cases were different (reported in Chapters 4 and 5). While Buhera beekeepers were already commercialising beekeeping, Hluleka beekeepers were still grappling with

understanding the concepts. The questions which were designed for Buhera are included in Box 6.3 below.

### **Box 6.3 Questions to guide the problem solving process**

1. Description of the real problem
2. What is the root problem of the current problem?
3. What is the history of not practising commercial beekeeping?
4. Who are the main factors involved and why?
5. What are the effects of the problem to commercial beekeeping?
6. What are the strategies for overcoming the problem?

### **6.3.4 Monitoring social learning in a Intervention Workshop**

As in the Hluleka case, social learning processes in Buhera were monitored using Wals' (2007) tool of mapping social learning. The tool's six steps were used; namely, *Orientation and exploration; (Self) awareness raising; Deframing or Deconstruction; Co-creating; Applying/experimenting and Reviewing*. The analyses was conducted using dialogues transcribed from Intervention Workshop that were based discussion of the three prioritized problems namely cutting trees/land use, pricing and field days.

#### **6.3.4.1 Analysis of social learning processes during development of model solutions to the tree cutting/land use problem**

Orientation and exploration of the issue and expansive learning process was observed when the topic was introduced. There was a concern that the workshop participants had failed to discuss the problem of use of land the previous day after learning that there was a missing key actor - the traditional leader. This is reflected in workshop dialogue; see #213 & #214 below:

*#213:...The other issue which we need to discuss and we need traditional leaders to help us with is tree cutting and opening of new cultivation lands.*

*#214: On that issue we agreed that village heads should be there because they are the ones allocating cultivation land along rivers hence promoting stream bank cultivation.*

The facilitator opened the discussion based on learning of a missing key actor by participants in the previous day's discussions. This process did not only highlight the background and key actors involved in the contradiction, but it also encouraged key actors to contribute to the discussion, especially traditional leaders (see #217 & #219 below) who had left earlier

before issue was raised the previous day when a discussions of the problem was introduced. This discussion provided an opening of *(self) awareness-raising*.

Learning through *(self) awareness-raising*, according to Wals (2007), involved eliciting one's own frames relevant to the issue or challenges identified, in this case different approaches in the use of ecologically sensitive land to support household livelihoods. Traditional leaders, after being identified as key actors were also motivated to put the record straight about why the problem existed, as reflected in see discussion extract #217 & #219:

*#217: I would want to say it had been always like that we don't cultivate along rivers. When we went for training the government encouraged us to put hives along rivers and in mountains. We were advised not to use flat land because farmers would want to use it to cultivate crops. ... But it varies with the different village heads, one villager might decide to put a vegetable garden along a river, his village head must advise him that it's not possible to clear trees along rivers but ...(making a bribery gesture) and the person goes ahead.*

*#219: So headmen and village heads are not doing their work properly because of corruption. However some traditional leaders like me and others I know, such as the local headman we are trying our best. I might not be aware of everyone, but I haven't allocated cultivation land along river in my village, because I learnt about natural resources management. If we destroy trees where would we get honey? This means as village heads we are failing to control people from cutting trees along rivers, we can see it happening...*

The two discussion interactions above show how the contradiction is understood by a village head that was a beekeeper. He believed that traditional leaders had a hand in the activity because of corruption. Key actors had learned that traditional leaders need money because they were ordinary citizens and some were even poorer than the ordinary villagers they were leading, therefore rich villagers were exploiting them through bribery in order to access land along rivers; a practice he highlighted that was not acceptable in his village.

However, another traditional leader who was not a beekeeper viewed it differently. He noted that the problem was related to population increase and as a result there is overcrowding and they no longer have anywhere to cultivate. This was mainly a problem for children who grew up in the area and also for people coming from outside who wanted access to new land as reflected in #223 dialogue extracts:

*#223: What is happening is, it as a result of the population increase. There are some areas that were not suitable for human settlement, but you end up settling people because of shortage of land. The population increase is putting pressure on our forest and they are now finished.*



The two given reasons deliberated above, show how key actors understood the problem at hand from traditional leaders, until some other actors intervened, effectively starting a process of *deframing and deconstruction*, as reflected in the dialogue extract #242 by an AGRITEX<sup>9</sup> officer:

*#242: I would go back to the government's position, long back as civil servants we had the powers that if a person cultivate within 30 meters from the river, we would arrest.... These powers were stripped from us, it would mean they need to be restored, and also with the divisions which were done in various departments ... and you should work within your department's confines. If you look at stream bank cultivation we can also report to the department of engineering, this is no longer our role,... That problem of stripping of powers.... long back we had the powers to arrest the culprits.*

The government agricultural extension officer deconstructed the way key actors had learned from traditional leaders by outlining how state intervention had worsened the problem through responsibility withdrawal. However, other actors *deconstructed* the issue further as participants also learned that manifestation of national politics in Buhera was making the situation worse. The manifestation of national politics in Buhera contributed further to the problem of controlling stream bank cultivation, as accountability become contested as shown in #250 & #251 below:

*#250: The other thing which caused this problem is number eight [meaning number eight of the listed of beekeeping challenges on the flip chart was politics]. It caused problems in implementing legislation. It is now difficult to control people in this area because they would ask you who said that, and who doesn't allow it.*

*#251: Number eight politics.*

As national politics manifested itself in Buhera south it caused community polarisation, some people supported Zimbabwe African National Union – Patriotic Front (ZANU-PF) and its slogan *„Land is the Economy and the Economy is Land'* hence there is a belief that anyone who interferes with them in achieving the land agenda was enemy and should be labelled a Movement for Democratic Change (MDC) supporter. Therefore deconstruction really helped in understanding the contradiction through the unfolding of the history and getting to the core problem. Some village heads started to ask for help from AGRITEX officers in solving this problem, reflected in extract #282, #283 and #287.

*#282: As beekeepers how can traditional leaders help us to solve this problem?*

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<sup>9</sup> AGRITEX (Agriculture Technical and Extension Services) was formerly Agriculture Research and Extension Services (AREX)

*#283: I think for us this issue to be solved, is to have a meeting with the headman to discuss the way forward to the problems we are facing.*

*#287: Yes, village heads would deal with the problem, however we need to discuss it with AGRITEX officers in order for them to tackle it, it will go back to number eight (politics) and we won't be able to handle it well; because the culprits will ask whether you own land. When it is presented by AGRITEX officers and they call for village meetings ... and remind people what the legislation says about stream bank cultivation, then village heads...can now start to prosecute.*

This type of talk by one village head who was grappling with this problem can be described as „agentive talk’ – expressing a willingness to address the contradiction (Mukute, 2010) with a *co-creating* process of deliberating a model solution. Although the village head knew that there were some political inferences he had to seek refuge by inviting the AGRITEX officer to intervene first, through educating people about the environmental legislation.

*#288: ..... I therefore think that for this problem to be resolved it requires the involvement of headmen who were officially installed by the state, and possibly the District Administrator (DA) their (traditional leaders) supervisor, and all village heads should be present...*

Although AGRITEX officers concurred that traditional leaders were at the centre of the problem and were supposed to address it, workshop participants learned that the officers were not willing to be involved in educating people about the legislation because of the political environment, as indicated in #288 above. They then suggested another strategy, the involvement of government officials from higher offices, such as the District Administrator (DA). The office of the DA was powerful because that was where traditional leaders reported. This office was also instrumental in the land reform programme; hence they identified the office as the appropriate office to explain the environmental legislation in such a given socio-political order. This was also supported by discussion extracts #289, #292, #301 to #302 in which the AGRITEX officers show a willingness to act (agentive talk) towards solving the problem. The AGRITEX officer shows his willingness to invite the DA, Forestry Commission, Environmental Management Agency and his superiors from the district offices to a meeting where people were to be educated about stream bank cultivation.

*#289: Are we agreeing? Village heads can we call DA so that we can have a meeting?*

*#292: Yes, officers at our district offices Agriculture they are not a problem, all those people in higher offices are not a problem.*

*#301: We think if we call the DA, he will come with other officials from Forestry commission, Environment and not only AGRITEX will be invited, and even police officers will be invited.*

*#302: Yes, this job will be for the state.*

In this case therefore the model solution proposed was an educational workshop, but one constituted with adequate political support

### **6.3.4.2 Analysis of social learning during development of model solutions for honey pricing**

As indicated above, three problem issues were discussed in this workshop. Extract #82 (below) shows how the issue of pricing of agricultural products had affected cotton production in Buhera. The historical description of the problem provided by the AGRITEX extension officer gave an *orientation* and a clear warning to the buyer that beekeepers just like cotton farmers were rational. If the issue was not addressed urgently beekeepers would consider looking for alternative income generating activities. Such adaptive learning behaviour by farmers was also reported in Chapter 5, Section 5.3:

*#82: I would want to assist beekeepers, they do not want to say they will have sold by products of comb honey, however their honey is valuable. For example cotton, most farmers no longer wants to grow it because of low prices which are offered by buyers. They were used to sell cotton at competitive prices and they would buy scotch carts, cattle and grocery for the whole year. When farmers grow it and after harvesting three bales [100-200kg is a bale] they would buy a carton of sugar [equivalent of 20kg]. Farmers will start to consider the time they have spent producing cotton and the by-products the company would get such as lint cotton and seed cotton to mention a few. Nowadays farmers in this area have abandoned cotton production although this area is a cotton producing area. In a way farmers have started questioning whether your company knows that it gets by-products from their honey, such as honey and wax. Low prices would make farmers reconsider their options.*

The presentation made by the AGRITEX extension officer (#82 above) clarified the problem of pricing and its repercussions in the industry of commercial beekeeping. However beekeepers were experiencing problems of pricing their produce due to the macro-economic environment in Zimbabwe. They generally agreed that the price of 2kg sugar at a local retail store was a fair price for a kilogram of comb honey. This process of exposing their own frames through (*self*) *awareness* among beekeepers led participants to learn that the pricing system of beekeepers was based on the principle of value for money in their local area. According to beekeepers 2kg sugar had an exchange value of a kilogram of honey as culturally honey was used as sweetener. However, the buyer felt that beekeepers did not consider the macro-economic environment in their pricing system, a discussion reflected in #795, #820 and #821 below:

*#795: I think using the price of sugar as a base price is fine, during the past days the price of sugar in this area was USD3 per 2 kilograms pack. If ZFDT could bring sugar some people would opt for that, because they would get more from bartering 2kg sugar for a kilogram of comb honey. Although it would cost you (ZFDT) in transporting, I think it is a better option.*

*#820: I think the big problem which we are having is all about how we price honey. Can we teach each other how we price honey? What do we consider, would we go to Mutare to check the price of honey, and do we therefore adjust if the price of honey in our area based on the cost incurred for honey to be on the shelves in Mutare? Or as farmers, we are considering the cost of producing with a kilogram of honey, considering the cost of hive, harvesting cost and labour. If ZFDT comes here they also justify its prices, against your price. The big problem which we have got is one party is considering the macro-economic environment such as prices of food stuff in Harare and in the country, while the other party is considering the micro-economic environment of the retail price of 2kg sugar in Chapanduka.*

*#821: The problem I have is that the price of sugar seems to have been gazetted (by farmers) but that is not it. It's only that farmers feel that they must buy sugar after selling honey; it does not mean it was the gazetted price.*

Some participants started to deconstruct the way beekeepers were thinking about pricing, and questioned the rationale of using pricing based on unrelated goods. Even though honey and sugar could be used as substitutes, their production systems were different. Beekeepers were also warned that if they were unreasonable with their pricing system, they would drive buyers away, as reflected in the discussion #846 to #848:

*#846: If we are using price of sugar it is bad because it fluctuates and it depends on the quantities you would want to buy. We need to agree on a pricing system that is fair and does not use the retail price of sugar which is obviously different in shops. We need to negotiate for a price. Sometimes the price of sugar will be USD5 and you will drive away buyers.*

*#847: And at USD 5 you won't have buyers.*

*#848: You therefore need to consider what makes our business survive so as theirs, however we need to negotiate. You can't run a business by saying "I want to buy a cow based on the price of a plough" [pricing is not based on price of other unrelated items].*

After this discussion participants seem to have learned that beekeeping was just like any other business and that it needed to work on fair business ethics and promote a win-win situation. Participants were prepared to agree on a pricing system which was fair for both players. One participant, a beekeeper suggested agreeing on cost of inputs, however the buyer felt it was still not fair to use cost of input to price honey as beekeepers would inflate their production cost. At the end of the discussion both parties agreed on a process where each player would develop a cost sheet or pricing system based on facts and figures and these pricing systems

were them to be used for negotiation on the purchase day. As outlined in #853, #857 and #858 below:

*#853: Let's agree on input cost incurred by farmers during beekeeping.*

*#857: .... I have been listening to farmers explaining that it is difficult to do beekeeping. However beekeeping is the cheapest business, we do not need a lot of management such as in crop production where we weed and use pesticides, however beekeepers are arguing that their cost is of making hives, cleaning of hives and after colonisation they would harvest and they would be stung. It is their cost which they are justifying for such high prices.*

*#858: I am giving AGRITEX and farmers some work, AGRITEX and farmers need to come up with a cost of producing one kilogram of comb honey in Chapanduka. You therefore produce a cost sheet in order for farmers to determine price and ZFDT will come up with a cost sheet in order for you to meet and negotiate with facts and figure.*

In this case the model solution agreed upon was to prepare a cost sheet to provide a more substantive platform for price negotiation. This indicated a willingness to move towards a co-created solution, although the actual outcome was, as yet unclear but at the very least a way forward was chartered.

### **6.3.4.3 Analysis of social learning during development of model solutions on failure to conduct field days**

As reported in Chapter 5 (see Section 5.7.1), the AGRITEX extension officers had been frustrated for a long time, as they had tried to organise beekeeping field days and were not getting enough support from the key players who gave an *orientation* to issue. According to the agricultural extension officer, field days were learning platforms for a number of players such as buyers, seasoned beekeepers, partner organisations and even new beekeepers, as indicated in #58.c & #60 dialogue extracts from the Intervention Workshop:

*#58. c) Fields days, currently its one of the draw backs because we haven't had any, it is one of the areas. Field days are a learning tool and they are motivational, if we have field days people will be seeing honey and how hives are made. Field days are therefore a learning tool which allows people to learn through seeing.*

*#60: The main problem is lack of knowledge on farmers' side, when we want to coordinate just like with crop field days such as sorghum and other crops. .... We then need to give some incentives; it motivates farmers to start commercial beekeeping even amongst those who are doing it on subsistence basis. We will also give a chance to the best farmer to explain how he came up with a good harvest.*

The group which was working on the problem went on to clarify through *self awareness* that the local Agricultural extension officers felt that this problem was caused by beekeepers who treated commercial beekeeping as a second class livelihood activity, whilst the buyer did not

appreciate the business he was getting from Buhera (Chapanduka area). It was the AGRITEX extension officer's expectation that the buyer would respond through gestures such as conducting a field day during honey purchasing days, as reflected in dialogue extract #63c and #71 below:

*#63.c. Our buyer ZFDT is also a problem, it buys honey on credit, and it does not teach farmers about beekeeping, it comes, buys honey and it goes. It does not have the opportunity to train farmers such as how sustainable harvesting of honey with bee suits. Some farmer's burn bees at harvesting they are only concerned about selling honey while destroying bees. ZFDT does not find time to train farmers so that they know the importance of beekeeping;*

*#71. ...And then the other problem is here in Chapanduka that beekeeping is taken as a secondary project. It is not a core business. If it's a secondary project it means after exhausting all your business that is when you attend to hives...*

The understanding of having a field day was *deconstructed* by one beekeeper when he asked about the composition of people to be invited to the field day. This process opened up new understanding as participants learned that beekeepers were not worried about conducting field days, however they were worried about making contributions towards food for the delegates. According to the beekeepers, if high profile people such as traditional Chiefs were invited to an occasion the local tradition would request that they would be fed and given a goat as a gesture of appreciation for their participation. For beekeepers this was a mammoth task as they had been failing to meet their household food requirements because of drought and economic hardships, #764 and #765 provides insight into this issue, which was also reported on in Chapter 5 (see Section 5.7.2), where a contradiction in the assumption of viability and value of field days for beekeeping amongst different stakeholders was identified.

*#764: You are going to invite the leadership including the DA and therefore you will also call the local Chief (traditional leadership). It is therefore not appropriate to feed these respectable people with honey. When I had a beekeeping field day at my homestead I invited two schools, Chief Chimombe and we did not only feed them from honey. It is easier to deal with the DA because we can give him a bucket of honey. We cannot however give the local chief a bucket of honey he needs a goat, and we do not have that goat to give him.*

*#765: ...; it is not about making this is a very big event. This field day is for teaching people about beekeeping, a field day does not mean people are supposed to be fed, no.*

During the *co-creation* process some suggestions were made to change the name of the occasion or exclude traditional leaders and high profiled government officials. This suggestion was made in view of the culture and history of field day, which involved feeding

and giving tokens of appreciation to invited guests, which was costly to organise. Further discussion, however, led participants to agree on inviting government officials and to combine the occasion with honey purchasing. This decision was agreed to based on the fact that the objective of the field day was to promote commercial beekeeping not just subsistence beekeeping. Inviting traditional leaders and government officials was seen to have potential to solve the problem of deforestation, as no other meetings would be organised to educate people about environmental legislation. Invited guests would be informed that the occasion was not for feeding people, as reflected in #766, #781 and #771 below:

*#766: Give it (field day) another name, maybe it has a bad name*

*#781: If that is the case it is okay. We need to tell people that the field day which is here is not for feeding people but for people to learn and understand commercial beekeeping so that it does not show disrespect to leadership.*

*#771: This area is an area with problems of tree cutting, if we do not invite traditional leadership where we will be having Forestry commission and other conservation organisations we won't achieve our objectives. We therefore want this day to be a success if we give it little time people will not understand its objective.*

In this case the model solution was to change the name, purpose and structure of the previously held field day; and to constitute these gathering in a way that would achieve other objectives of commercial beekeeping, such as education to reduce deforestation.

### **6.3.5 Summary**

As was the case in the Hluleka case study, the Interventionist Workshop provided a platform for deliberating model solutions to problems associated with contradictions that emerged within the Buhera commercial beekeeping activity system. Workshop dialogues shows how social learning processes of *orientation, awareness raising (framing), deconstruction or deframing and co-creation* of model solutions took place, constituting the first stage of the expansive learning process for commercial beekeepers and their partners. In this case three model solutions were developed to resolve problems affecting learning practice in the commercial beekeeping activity system: a politically powerful educational workshop; preparation of cost sheet for price negotiation and reconstituting the name and activities of the „field day’. As indicated in Chapter 3 full implementation of the model solutions fall outside the boundaries of this study, but Chapter 7 proposes how implementation can be monitored/reflected in future, a process which could shed further light on expansive learning.

## 6.4 Conclusion

Expansive learning as a methodological tool provided a framework to work with in solving problems of learning commercial beekeeping for the two cases above. The manner in which the expansive learning process drew on ethnographic and empirical data helped participants to develop deeper understandings of their problems before developing new solutions or tools to model new solutions. The process was intensive, and grounded in participants' collaborative vision of achieving a shared object involved deliberation on complex issues influencing the practice of commercial beekeeping.

Use of Wals' (2007) tool of mapping social learning provided an analytical tool which helped to analyse learning processes evident in dialogues that took place during the Intervention Workshops. The process highlighted the learning process that happened when model solutions or some tools to model new solutions were developed in both cases. From this learning process analysis, it was evident that the expansive learning cycle does not offer curative solutions to end the problems, but rather that it, at least in these initial stage, offers the social learning „spaces' for *orienting to, awareness raising, deframing and reframing and co-creating* new possibilities. It allows for implementation work plans for participants to carry on with the expansive learning processes. As was highlighted by Wals (personal communication, October, 11, 2010) the use of social learning processes to deal with sustainable development issues must not be seen to provide determinist solutions as situations always change, therefore tools to develop model solutions were appropriate as they only provided a platform for further engagement and ongoing reflexivity and deliberation, rather than an end product.



# **Chapter 7: Wrapping up the study with some claims and recommendations**

## **7.1 Introduction**

In the previous three chapters I described and analysed data gathered during phase one and two to address the research question and goals. The research question for this study was; „How does social learning in relation to the sustainable harvesting of natural resources develop in rural contexts of supported transition to commercial beekeeping?’ To answer this question the study addressed the following research goals:

1. Investigate the transition from wild harvesting and subsistence hives to commercial beekeeping in the two southern African contexts of Hluleka and Buhera;
2. Surface axes of tension and contradictions in social processes of learning to commercialise beekeeping in Hluleka and Buhera community contexts;
3. Develop possible strategies for fostering learning to strengthen sustainable commercialisation of beekeeping in Hluleka and Buhera.

The first two goals were addressed in Chapter 4, which looked at the Hluleka case study in South Africa and Chapter 5, which looked at the Buhera case study in Zimbabwe. Chapter 6 addressed the third research goal through deploying a CHAT methodological tool called the expansive learning cycle in developing strategies to enhance learning commercial beekeeping. The research question was addressed as I analysed data from both phases of data collection. In phase one, existing social learning processes were identified from interviews, document reviews and observations, and they mostly resembled situated learning or learning as participation in a social practice after Lave and Wenger (1991, also see Chapter 2). During phase two data generation, discussion and interactions in an Intervention Workshop were analysed using Wals’ (2007) analytical tool of mapping social learning processes. The learning processes identified during phase two were expansive after Engeström (1987), and modelled solutions and or tools to model new solutions were developed not only for beekeepers but the object of learning expanded to include that of trainers, funders and buyers, all of whom share a common object of commercialisation of beekeeping to address poverty and enabling sustainable use of natural resources.

This chapter marks the end of the thesis. I will focus on three main areas namely the analytical statements that discuss my claims on how social learning developed; recommendations on how social learning may be improved in the context of workplace learning involving community based natural resources in SMME context in rural areas and I conclude with a reflective perspective on the research, pointing to how the research may be extended in future along with the expansive learning cycle; and also to the reflexivity required from interventionist researchers, such as myself, who have an interest in how the research process itself can contribute to learning development and or social change.

## **7.2 My analytical statements**

This section describes six analytical statements. As mentioned in Chapter 3, I used Bassey's (1999) recommendation of using analytical statements to pull together key insights gained from this research that are relevant to the research question.

### **7.2.1 Distributed cognition provides a fertile ground for scaffolding social learning in an Intervention Workshop for commercial beekeeping**

In Chapter 2, I quoted Daniels (2001, p.70) citing from Hutchins who described distributed cognition as;

All human societies face cognition as tasks that are beyond the capabilities of any individual member. Even the simplest culture contains more information than could be learned by any individual in a life-time, so that tasks of learning, remembering, and transmitting cultural knowledge are inevitably distributed. The performance of cognitive tasks that exceed individual abilities is always shaped by social organisations of distributed cognition. Doing without social organisation of distributed cognition is not an option.

The above definition describes distributed cognition based on the diversity of actors' backgrounds from where knowledge can be drawn from in any particular context. This was also argued for in Engeström's second principle of cultural historical activity system theory - multi-voicedness (see Section 2.8). This principle states that an activity system is a community of multiple points, traditions and interests and these views are multiplied in networks of interacting activity systems, such as in third generation activity system (Engeström, 2001; Daniels, 2008). As indicated in the introductory sections of the Intervention Workshop description in Chapter 6 (see section 6.2 & 6.3) for Hluleka and Buhera respectively, participants for the workshops were drawn from different related

activity systems and diverse backgrounds, identified in the first phase of the research. Among them were beekeepers, funders, trainers, buyers and government extension staff. As shown in Chapters 4, 5 and 6, their knowledge and interests were historically and culturally different even though they were working on the common object of commercialising beekeeping in CBNRM contexts in rural areas. For example in Hluleka, whilst some people believed that bees were ancestors and they were not supposed to be boxed some believed that boxing bees in hives was a sustainable livelihood practice (see Section 6.1.5.1). Such cases were also reported in Buhera when buyers and beekeepers had different views on pricing and also when different people wanted to use land differently (see Section 6.2.4.1 and 6.2.4.2 respectively). The diversity of objects from different actors as represented in Section 6.1.1 and 6.2.1 for Hluleka and Buhera respectively presented different knowledge about the practice.

However, despite their diverse backgrounds, participants were able to work towards achieving a common purpose during the process of developing model solutions or tools to model new solutions in the expansive learning process. As was argued by Pyburn (2007, p.213) distributed cognition entails entangled and concerted efforts that, while separate, contribute to overall movement in a particular direction. This description captures the way that distributed cognition was used to provide a fertile ground for scaffolding social learning processes and the co-creating of new meaning in Intervention Workshops in both cases for commercial beekeeping in Hluleka and Buhera. When participants worked within the Intervention Workshop they operated in a space of a shared object as a basis of developing model solutions or tools to model solutions (see Figures 6.1 and 6.5). This process involved „Scaffolding’ as it was explained by Daniels (2001, quoting from Moll) involves the creation, development and communication of meaning through the collaborative use of mediational means rather than the transfer of skills from more to less capable partners. For example I used diagram to make the common shared object more visible to all involved in the workshop as a mediational strategy to scaffolding the process of meaning making within a commitment to expansive learning in both workshops (see Figures 6.1 & 6.5).

In learning commercial beekeeping in Hluleka and Buhera, scaffolding was observed when beekeepers and key actors from different socio-historical backgrounds used their divergent views (see Table 7.1 below) to work towards a common goal to construct model solutions or new tools to model new solutions. This process is evident in the analyses of the co-creating

processes using by Wals’ (2007) analytical tool for mapping social learning (see Sections 6.1.5 & 6.2.4).

**Table 7.1 Types of knowledge in the two cases**

Hluleka	Buhera
Cultural knowledge of ancestor-bee relationship of local people	Financial knowledge of buyers
Technical knowledge of commercial beekeeping from trainer	Local technical knowledge of making traditional hives
Legislative knowledge of trainers and project facilitator	Political knowledge of traditional leaders
Project management knowledge by trainer and project facilitator	Legislative knowledge of extension officers

Participants moved through a process of identifying problems which they were grappling with such as Project Management and Facilitation, Pricing, Tree cutting/ land use to develop model solutions such as management committee, a pricing system to be used for negotiating at purchasing, and holding a district meeting where environmental legislation will be discussed. Participants travelled the whole journey with a common purpose, but used different views to construct meaning, and model solutions or tools to deal with particular problems.

### **7.2.2 Observing development learning in CBNRM workplaces needs to become differentiated within a process framework**

When observing learning in CBNRM workplaces such as commercial beekeeping, this research has shown that there is a need to differentiate the process within a process framework. In observing development of learning commercial beekeeping within the expansive learning cycle framework in Hluleka and Buhera, I observed two learning processes. In phase one, surfacing tensions and contradictions, the learning was mostly situated, whilst in phase two modelling new solutions in an Intervention Workshop it was mostly expansive.

In phase one, most of the learning processes which were observed were located within the practice (beekeeping) within the activity systems (workplaces) and according to Lave and Wenger (1991) it was situated learning. Lave and Wenger (1991) argue that situated learning involves learning as people get involved within an activity; hence its focus is the relationship between learning and the social situation in which it occurs - in this study learning

commercial beekeeping in Hluleka and Buhera. Situated learning processes for Hluleka and Buhera were described in Chapters 4 and 5, Sections 4.6 and 5.6 respectively and these were:

- Learning through experience: In Hluleka beekeepers learned through experiencing and correcting their mistakes, whilst in Buhera beekeepers learned by experiencing environmental changes which influenced their practices;
- Learning from experienced other: In both cases new and novice beekeepers learned through observing and taking part in the activity. In Hluleka this involved late comers who learnt from old timers, whilst in Buhera these were children and friends of seasoned beekeepers who learned the practice through taking part in the activity with a parent or friend;
- Learning from trainer: This was observed in Hluleka as beekeepers were taught new business concepts and how they could develop commercial beekeeping practices by the trainer; learning from the trainer was more pronounced in the Hluleka case, as the EPWP training programme was formally and economically structured according to specific protocols (e.g. 2 days of training for 22 days of work/pay);
- Learning through networking: This was observed in Buhera as beekeepers learned new techniques such as grading from extension officers and buyers;
- Learning through disruption cultural beliefs: This was observed in Bolotwa, another beekeeping project in South Africa. One lady challenged the belief that bees were ancestors and could not be boxed and this changed the attitudes of other people and;
- Learning through inheritance or spiritual calling: This was observed among certain families in Buhera. This learning process enhanced beekeeping in Buhera as some families believed it was a calling from ancestors unlike in Hluleka where the cultural belief system disapproved beekeeping practices.

During the second phase, the learning processes were observed during the modelling of new solutions in an Intervention Workshops. These learning processes were mostly expansive as they involved the creation of new knowledge and new practices for a newly emerging activity system: that is learning embedded and constitutive of qualitative transformation of the entire activity system (Daniels, 2008 p. 127). Examples of these learning processes were observed

in Hluleka when the beekeeping activity system was being transformed from honey hunting to commercial beekeeping. Section 6.1.5 describes the process of modelling solutions or new tools to develop new solution. On the other hand the Buhera beekeepers activity system was being transformed to a sustainable commercial beekeeping system through appropriate pricing systems, conducting of reconstituted field days as learning platforms; and resolving institutional issues such as cultivation in ecologically fragile environments.

Although these two learning process look different they complemented each other very well. In Hluleka the disruption of cultural beliefs contributed towards a process of co-creation, such as mentors working with trainers. Mentors were seen as beekeepers who had managed to deal with the issue of cultural belief through disrupting the idea of boxing ancestors.

### **7.2.3 Learning is embedded across the analytical tool of mapping social learning**

As described in Chapter 2 and Chapter 6, Wals (2007) provided the contours of probing social learning through an analytical tool that differentiates six steps or processes, namely *Orientation and exploration, (Self) awareness, Deframing or Deconstruction, Co-creating, Applying/Experimenting and Reviewing*. I used this tool in this study to map social learning processes of dialogues or interactions in Intervention Workshops in Hluleka and Buhera, and it revealed that social learning processes were embedded across the steps. I will pick one example from Buhera to illustrate my claim.

When participants were solving the problem of tree cutting or land use (reported in Section 6.2.4.1), participants learned during *Orientation and exploration* that the issue could not be discussed without one key actor - traditional leaders. When the problem was revisited on the second day when traditional leaders were present, and they, the traditional leaders elaborated on the matter, *(Self) awareness*, by giving their views on corruption and population increase as the reasons for stream bank cultivation. Through this participants learned how the problem happened and why. However, in step three, *deconstruction/deframing*, an extension officer gave another view, which raised the issue of politics which was not mentioned by traditional leaders. The manifestation of national politics at local level influencing land redistribution was perceived to be causing the problem. People learned that besides corruption and population increase, politics had made the situation worse and it was beyond the capacity of traditional leaders, as other senior government officials were involved, such as the District

Administrator (DA). This provided capital for *co-creating* a model solution, where an educational meeting was to be organised involving key stakeholders including the DA from the district offices. This meeting was to discuss environmental legislation and how traditional leaders could intervene to settle the current problems of tree cutting/land use, which was contradictory to and affecting sustainable commercial beekeeping practices.

As described in Chapters 2 and 6, the analytical tool was used up to step 4 – *co-creating*, because the other steps involved implementation which was beyond the scope of this study. However, some implementation work plans were made for participants to continue the expansive learning process. Mukute’ (2010) research involving expansive learning processes in three southern African rural agricultural contexts showed that such implementation plans, agreed to through the co-created model solution process, were continued in all three of the cases that he studied, and that their implementation could be monitored at a later stage. This important finding indicates that the expansive learning process can continue at community level without the interventionist researcher necessary being present. The learning processes I observed using the Wals’ (2007) analytical tool shows reflexivity, as each step was not stand alone but it permeated into the others. Therefore this whole process maps learning as it develops within an expansive learning process, providing greater nuance and understanding of how expansive learning emerges through social learning interactions.

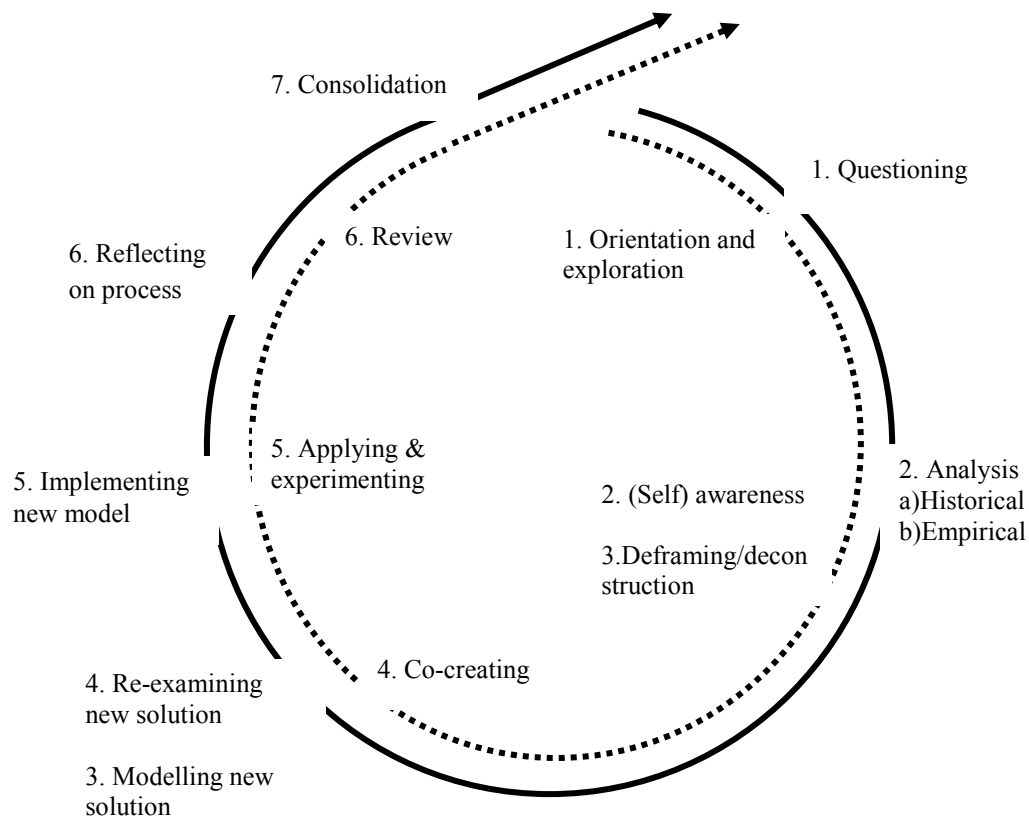
#### **7.2.4 The analytical tool provided by Wals (2007) and the expansive learning cycle complement each other**

CHAT is a theoretical framework that provides a methodological tool for transforming an activity system called an expansive learning cycle in an Intervention Workshop. As explained in Section 2.9 the expansive learning cycle consists of seven steps in which it moves while transforming, namely *Questioning*, *Analysis of the situation (Historically & empirically)*, *Modelling new solution*, *Re-examining new solution*, *Implementing new model solution* and *Consolidation*. By going through the full cycle it represents a journey towards a Zone of Proximal Development (ZPD) (Engeström, 1987). According to Engeström (2001) this ZPD is defined as the distance between the everyday actions of individuals and the historically new form of the societal activity that can be collectively generated (see Section 2.9).

However, CHAT as a theoretical framework or expansive learning cycle as a methodological tool does not provide an analytical tool for monitoring the learning whilst the activity system

is being transformed or taken through the Zone of Proximal Development. In Hluleka and Buhera such learning processes were probed by Wals' (2007) analytical of mapping social learning. Wals' (2007) tool with its six steps of mapping social learning namely *Orientation and Exploration*, *(Self) awareness*, *Deframing or Deconstruction*, *Co-creating*, *Applying/Experimenting* and *Reviewing*, were used to monitor the social learning processes emerging from engagement with contradictions or problems manifest in cultural historical activity system towards new practices. The tool of mapping social learning, when superimposed on the expansive learning cycle in the expansive learning cycle as used in this study, shows that the two became complementary tools with one providing a methodology tool, whilst the other provided an analytical tool for observing social learning, Figure 7.1 below illustrates this.





**Key**

- > Methodological tool (Expansive learning cycle, Engeström, 2001)
- .....> Analytical tool (Wals, 2007)

**Figure 7.1 Complementary methodological and analytical tools for researching expansive social learning**

The figure above shows Engeström’s expansive learning cycle with seven methodological steps and Wals’ (2007) analytical tool with six steps. In this study the first step of the expansive learning cycle called *Questioning*, explored how beekeepers and other stakeholders experienced and critiqued existing practise and existing knowledge through interviews, observation and document reviews. This was reported as phase one data collection in Chapters 4 and 5, and this process clarified key actors and their activity systems such as trainers and agricultural extension officers (to producing activity systems); buyers (rule producing activity system) and funders to mention a few and with them key issues or challenges such as pricing, cultural beliefs, tree cutting/land use arising from the contradiction within and between the activity systems.. This background research provided in-depth methodology for step one of Wals’ tool *Orientation and exploration* highlighting the

significance of cultural historical understanding and/or context in social learning processes. This step also formed an important component of the Intervention Workshop providing the mirror data for reflection and reflexivity. Mirror data reflects the challenges, critical incidents or issues identified in the activity system analysis and brought into the Intervention Workshop as *first stimuli*. This process also allowed key actors or Intervention Workshop participants to confirm these challenges and also to start analysis through eliciting greater (*self*) awareness of their *historical backgrounds, and the empirical information*; step two in the expansive learning cycle. Step two of the expansive learning cycle was analysed using step two and three of Wals' (2007) analytical tool called (*self*) awareness and *deframing/deconstruction*. These two processes analyse participants' understanding of a problem based on historical background, and how such experience and historical analyses can be *deconstructed* with empirical evidence or alternative perspectives providing for a deeper understanding and learning. An example of such a process was during modelling of the new solution for pricing in Buhera (reported Section 6.3.4.2), where participants historically understood the price of two kilograms of sugar to be equivalent to one kilogram of comb honey. This understanding was also understood and acceptable in the context of the hyper inflationary environment in Zimbabwe. However, after the formation of the Government of National Unity and there was use of the American dollar as the legal tender for exchange, the inflation war was arrested; therefore this historically constituted pricing system of the beekeepers was seen as a misfit. Based on current – *empirical* evidence, the current economic system in Zimbabwe, participants deconstructed the historical understanding that the value of two kilograms of sugar was equivalent to a kilogram of comb honey, leading to the co-creating of a new solution in resolving the pricing issues influencing the central activity system and shared object of sustainable commercial beekeeping.

*Modelling new solutions* and *re-examining new solutions* in the expansive learning cycle were considered as *co-creating* in the analytical tool. Modelling new solution involved a process of communicating and brainstorming possible solutions. These solutions were then debated and the best was chosen. This process was analysed as a *co-creating* process described as a process of identifying new alternative ideas and options in deliberation with others. In discussing the problem of pricing in Buhera, alternative pricing systems were suggested such as using cost of input to produce a kilogram of comb honey and maintaining the equivalent of the retail price of sugar. However, after further deliberation and re-

examining these possible solutions, participants agreed on developing a pricing sheet or pricing system as a tool for negotiation during honey purchase (see Section 6.3.4.2).

Although I did not continue exploring with the methodological tool up to step seven, the other two steps for both frameworks were the same - *implementing new model solution* in expansive learning analyses learning during *applying/experimenting* for the analytical tool, whilst *reflecting on process* in the methodological tool, analyses learning during *reviewing*. *Consolidation* which is step seven of the methodological tool is not represented in the analytical tool, perhaps because there is very little learning as it involves using an identified new practice in a stable form of activity. Both tools however are cyclical indicating ongoing reflexivity and possibility for new learning to emerge from consolidation practices. This accords with Engeström's view that cultural historical activity systems are not static and Wals' view that learning and reflexivity are closely aligned. Wals (2007) and Wals *et al* (2009) argue that sustainability issues are complex and often contested and require reflexivity and social learning.

### **7.2.5 Socio-cultural, political and economic complexities are enabling and constraining factors of social learning in commercial beekeeping workplaces**

As reported in Chapter 4, 5 and 6 there were socio-cultural, political and economic complexities that enabled or constrained social learning in commercial beekeeping in the two case study sites. Mukute's (2010) study also showed that such factors also shaped small scale sustainable agriculture practices in southern African contexts. Silo's (2009) research on children's participation in school based waste management activity systems shows too how cultural factors constrain and shape expansive learning in southern African sustainability oriented activity systems. I synthesise some specific descriptions of these complexities from the previous three chapters in the subsections below.

#### **7.2.5.1 Socio-cultural complexities**

##### **a) Enabling factors**

- In the San people's culture and tradition, mediation tools used such as trekking bees from their dropping, tying a string to a bee and use of certain species of birds called a

honey guide (see Section 4.1), and in Zimbabwe the use of log and bark hives (see Section 5.3) promoted learning commercial beekeeping;

- A belief that a good season of honey did not coincide with famine (drought) therefore honey hunting was always used as source of obtaining food in such years (see Section 4.2), while in Zimbabwe liquid honey was used to make a cake with bulrush, pearl millet or millet or mealie-meal (see Section 5.2) influenced early human-bee interactions that could have shaped commercial beekeeping;
- San people's socio-cultural rule such as robbing one's tended bee nest was punishable by death (see Section 4.2) and in Buhera, Zimbabwe robbing a hive carried a penalty of forfeiting a cow (see Section 5.3). Such stiff penalties might have enabled most people to learn how to tend bee nests or make and keep their own hives thus promoting the culture of beekeeping;
- In Zimbabwe, bees have been part of the *Shona* people's culture, therefore a person was supposed to marry after seeing a certain species of bee called *Dendende* or else his/her relative would die (see Section 5.2), therefore such a bee species was protected. This belief attributes value to bees, providing a cultural foundation for commercialising beekeeping.
- In Buhera honey was eaten at special occasions such as *Nhimbe* (communal labour) or it was given to visitors at the traditional leaders' court (see Section 5.2), thus showing the value of beekeeping products;
- In Zimbabwe beekeeping is believed to be learned through inheritance or spiritual calling (see Section 5.6). This form of learning system encouraged a continued learning and practice of beekeeping in families which are believed to have such a culture; and
- In Zimbabwe the belief that a hive could be protected by cultural medicine and was an inheritable asset (see Section 5.2), discouraged theft or the robbing of hives which is a major challenge in Hluleka and other areas in the Eastern Province of South Africa (see Chapter 4), also passing a hive to a family member encourages a continued culture of beekeeping.

## **b) Constraining factors**

- A belief that Khoi people were pastoralists, not hunters and gatherers (see Section 4.2), may have affected their interaction with bees and thus the commercialisation of beekeeping;
- Robbing of San people's nest by Khoi people was an acceptable practice to both San and Khoi cultures as the San people would grab the livestock they first saw if they have found their nests robbed (see Section 4.2). This may have prevented Khoi people from learning the tending of bee nests and thus later commercialisation of beekeeping;
- An *isiXhosa* belief that bees were ancestors and were not supposed to be boxed (see sub-Section 4.7.4) was a belief that affected beekeeping;
- A belief that widows must always wear black clothes for a year after the death of their husbands as a sign of bereavement (see sub-Section 4.7.4), excluded widows from working with bees as bees hate dark colours and this prevented learning commercial beekeeping by widows;
- Hunting and gathering as a culture (see Section 4.2) may have discouraged the learning of beekeeping in San people as they never stayed in one place long enough to learn a practice such as beekeeping.

## **7.2.5.2 Socio-political complexities**

### **a) Enabling factors**

- In South Africa legislation such as the Participatory Forestry Management Strategy, Forests Act of 1998, National Veld Forest Fire Act of 1998 to mention a few (see Section 4.3), encouraged social learning in beekeeping as the government was mandated to address sustainable utilisation and management of forests; promoted economic and social development of forestry, and gave people a greater access to the country's forests. These new strategies and legislations promoted new players into the practice such as Hluleka beekeeping, donor agencies and non-governmental organisations;

- In Zimbabwe colonial government policies did not fight the learning of beekeeping, however, but it encouraged it as people were allowed to trade honey and other agricultural goods with the mines and farms (see Section 5.3).

#### **b) Constraining factors**

- Legislation that affected beekeeping and commercialisation of natural resources were the Transkei Forestry Act of 1969 and the Transkei Conservation Act of 1971 (Section 4.2). These legislations had provisions which limited people in engaging in beekeeping activities and commercialisation of natural resources;
- Land distribution policy in Zimbabwe affected learning beekeeping due to the failure to interpret the notion that „Land is the economy and the economy was land’ and increased unregulated competition for land and destroying of hives as people fought, beekeepers and farmers to use ecologically sensitive areas (see Section 5.3). These ecologically sensitive sites were once protected from cultivation by law; however, they could be used for beekeeping as the activity does not disturb the sensitive ecosystems.

### **7.2.5.3 Socio- economic complexities**

#### **a) Enabling factors**

- Expanded public works programmes and O.R Tambo Municipality’s Spatial development initiation in South Africa as strategies for poverty alleviation and unemployment encouraged learning commercial beekeeping as money for people to be trained in commercial beekeeping was channelled to such activities (see Section 4.3);
- In Zimbabwe the Structural Adjustment Programmes, that proposed reduction in government expenditure on social services enabled the learning of commercial beekeeping in Buhera albeit because other sources of livelihood were curtailed (e.g. farming subsidies (Section 5.4);
- Support from donor agencies and non-governmental organisations such as Zimbabwe Farmers Development Trust (ZFDT) encouraged learning commercial beekeeping (Section 5.4) under CBNRM philosophies.

## **b) Constraining factors**

- Policies that promoted government subsidies on agricultural inputs during the early independence period of Zimbabwe constrained learning commercial beekeeping in Buhera as rural people were producing cotton a crop that requires heavy use of insecticide that killed bees (Section 5.4);
- Hyper-Inflationary environment in Zimbabwe in the late 2000s caused poor pricing of products (Section 5.4), which may have forced some beekeepers to stop the activity in Buhera.

All these factors the significance of understanding cultural, socio-economic and socio-political complexities in education, training and workplace learning in contemporary southern African CBNRM development contexts such as Hluleka and Buhera.

## **7.3 Recommendations**

This section discusses the recommendation for other studies in the area of social learning and/or commercialisation of natural resources products under the CBNRM philosophies.

### **7.3.1 Using Wals' (2007) analytical tool to map social learning**

Engeström (2001) commented on the weaknesses of theories of organisational learning used by CHAT researchers for spelling out specific processes or actions that make the learning process visible. Highlighting an attempt by Nonaka and Takeuchi's framework of cyclic knowledge creation to resolve this problem, (Engeström, 2001) pointed to this framework's weakness in dealing with conflictual questioning in the expansive learning cycle due to boundary crossing issues as noted earlier. When I analysed social learning processes in the boundary crossing laboratory/Intervention Workshops, I used an analytical framework provided by Wals (2007). This framework tries to address some of the concerns which were raised by Engeström (2001), as it looked at the dialogues emerging from divergent views during an Intervention Workshop and how meaning is developed through an *orientation*, *(self) awareness*, *deframing* and *co-creation*. When I analysed the learning processes of the expansive learning cycle conflictual ideas were embedded in the identification of key actors in the activity systems, issues and contradictions. These were the „bases' of the social learning process. For example as described in Section 6.2.4.1, modelling new solutions for

tree cutting/land use in Buhera, discussion interaction #213 and #214 participants identified tree cutting as a key issue or problem, but other participants questioned how this was going to be discussed without traditional leaders, thus learning that traditional leaders had an important role to play in such an issue. Conflictual ideas were also identified during *(Self) awareness*, as shown by Buhera discussion interactions #217 and #219 where traditional leaders had different views on tree cutting. These divergent views and conflicting ideas were embedded throughout the expansive learning cycle and Wals' (2007) analysis showed how these divergent views and conflicting ideas made discussions worth develop model solutions and learning from others.

Based on this evidence I am recommending that Wals' (2007) analytical tool may be used or adapted for use in mapping and monitoring social learning in CBNRM workplace learning where a methodological tool that promotes engagement with divergent views such as those contradictions that are the foundation for expansive learning cycle is used.

### **7.3.2 Distributed cognition should be promoted in workplace learning of commercialising natural resources**

Based on the observed significance of divergent views in enabling co-creation of new model solutions (reported in Section 7.1.1 above), I recommend engagement with distributed cognition in workplace learning of commercialising natural resources. Distributed cognition breaks the „business as usual idea'. The business as usual concept is when people became stuck in their own frame or ideas, or ways of seeing or looking at the world, and ways of interpreting reality, such that they fail to see how those frames colour their judgement and interaction (Wals, 2007). The essence of distributed cognition in social learning is for people to be able to move out of their frames, allowing their way of thinking to be challenged so that they will be able to see reality differently and be jointly empowered to work towards resolving mutual challenges (ibid). This type of learning calls for shared learning leading to joint or concerted action that encapsulates meaning making in social learning (Pybum, 2007). Wals, van der Hoeven and Blanken (2009) argued that this type of learning banks on social capital which comes from working with a heterogeneous group of people, therefore distributed cognition is considered to be a precondition to create a robust system that is capable of dealing with setbacks. In the cases of commercial beekeeping considered in this study, distributed cognition brought about a way of dealing with some constraints such as



changes in socio-economic, socio-political and socio-cultural setbacks thus it helped to further capacity for resilience, adaptation and recovery, at least at the level of new model solutions reported in Chapter 6. As shown in Chapter 6 these model solutions were all aimed at improving sustainable livelihoods for people working in commercial beekeeping activities in the two sites.

### **7.3.3 Observe learning at every point in CBNRM workplace**

I recommend that learning in CBNRM workplaces learning should be observed at every point. As shown by this study learning processes happened at every point in the framework of the expansive learning model from questioning to re-examining of the model solutions or new tools to model new solution. Wals, van der Hoeven and Blanken (2009) referred to such learning processes micro-learning within the bigger framework of macro-learning. The case studies reported here show that each learning process feeds into another and carefully observation of these processes allows understanding and monitoring of the logic and reasoning for CBNRM decisions and actions. Such monitoring can avoid sweeping assumptions that gloss over contextual complexities, strengthening the impact, relevance and success of CBNRM initiatives. For example if CBNRM trainers in Hluleka were not cognisant of local cultural beliefs or histories, their training efforts may be misplaced or lack relevance. Daniels (2001) also highlighted the need to recognise all types of learning in workplace learning such as that acquired through experiment, apprenticeship, acquired from other forms or be it expansive as each builds towards a fuller understanding of workplace learning.

### **7.3.4 Maximise opportunities in commercialisation of natural resources products within a sustainable development framework**

As shown in this study, socio-economic constraints might be turned into opportunities to promote learning commercialisation of natural resources to alleviate poverty through new means. Hyper inflation in Zimbabwe is an example of such constraints. As is seen in Section 5.4, natural resources commercialisation such as beekeeping has always been a source of livelihood for those considered to have few options. If there was more attention to provide markets for honey in Buhera from the public and private sector, it might have been a better source of income and business for both the rural people and such companies. In Hluleka, the opportunity for better commercialisation of beekeeping could have been maximised through

better selection, and through extended business training to develop a fuller understanding of the business potential of the beekeeping enterprises.

### **7.3.5 Deliberate on some socio-cultural diversity**

Although Education for Sustainable Development (ESD) practitioners were advised to be sensitive to cultural diversity, they were also recommended to deliberate on such issues at local levels to allow for different perspectives to emerge and be debated (Lotz-Sisitka, Olvitt, Gumede, Pesanayi, 2006). Based on findings reported in Chapter 4, 5 and 6 on how cultural beliefs, values and customs affected commercialisation of beekeeping, I recommend that while some cultural aspects need to be considered some cultural constraints in commercialising natural resources need to be debated. Debating cultural constraints may help to deal with tensions and contradictions on cultural diversity. In an Intervention Workshop for Hluleka beekeepers dialogues and debates among participants on the cultural issues such as bees were ancestors and therefore could not be boxed, eased the tension when other participants narrated how they managed to disrupt the belief. The workshop participants eventually proposed that trainers work with mentors, where mentors were seasoned beekeepers who had managed to deal with the cultural constraints in their own workplaces.

## **7.4 Reflections on the research and research process**

### **7.4.1 Value of CHAT in the research process**

Lotz-Sisitka *et al* (2006) argued that Sub-Saharan Africa's strategy for achieving the United Nations Decade of Education for Sustainable Development (UNDESD) objectives and goals values African culture, knowledge systems and experience. Since CBNRM and poverty alleviation through commercialisation of natural resource products is one the strategies for addressing UNDESD goals, in this study Cultural Historical Activity Theory (CHAT) was an important theoretical framework in understanding learning. CHAT is a theory which emphasises the role of culture and society in developing human mind (Daniel, 2008). This theory was used in understanding how culture and the historical backgrounds of beekeepers are shaping their transition from bee-hunting and subsistence beekeeping to commercial beekeeping as a poverty alleviation strategy.

### **7.4.2 Challenges in the research process**

The weakness of the research framework I worked in, Development Work Research is that it is long and intensive, and takes at least three years to follow through the whole learning cycle. This study was fixed within a period of two years therefore there was time and resource limitation to finish the whole learning cycle. I, however, recommend that the following activities can be done for research beneficiaries to complete the process on their own.

- The process should seek to work with problems within research participants' sphere of influence;
- Modelling of solutions should be insensitive and should re-examine modelled solutions to establish if they are realist and can be implemented without demanding a lot of resources; and
- Implementation plans must be specific in terms of activity to be carried out, people responsible and timeframe.

### **7.4.3 Reflexivity of Interventionist Researcher**

In this study I was an Interventionist Researcher, and as stated by Mukute (2010) my role was to probe; connect people and ideas; inspire research participants; create space for difficult matters to be discussed; remind participants of commitments they made; clarify and make suggestions; and facilitating participants to reach mutual agreement. I was therefore a legitimate Interventionist researcher who sought to see participants learn through developing model solutions to their own problems, unlike being just a mere facilitator like in other participatory approaches. This role of the Interventionist Researcher is important and can be used in researching how people are learning to deal with socio-ecological issues and risks in CNBRM contexts, Environmental Education and other Education for Sustainable Development projects in southern Africa.

## **7.5 Conclusion**

In my opening remarks I highlighted my motivation for carrying out this study which was based on my background of working as a development facilitator promoting commercialisation of natural resource products. I also highlighted that I was grappling with how enterprise groups in participating areas could effectively master the practice of

commercialising natural resources as an income generating/livelihood improvement strategy in their workplaces. This background and motivation enabled me to develop the research question for the study „How does social learning in relation to the sustainable harvesting of natural resources develop in rural contexts of supported transition to commercial beekeeping?’

In carrying out this study I learned that development of social learning in relation to sustainable harvesting of natural resources in rural contexts of supported commercial beekeeping was dependant on:

- Distributed cognition providing a fertile ground for scaffolding social learning;
- Observing learning in CBNRM needs to be differentiated within the process framework;
- Development of social learning was embedded across the analytical framework;
- The analytical tool provided by Wals (2007) and the expansive learning cycle complement each other;
- Socio-cultural, political and economic complexities enabled or constrained learning of commercialisation of natural resources products.

I would conclude by saying the theoretical and methodological framework I used provided a framework which allowed beekeepers to surface tensions and contradictions in learning commercial beekeeping and a platform for dialogue was provided. This platform for discussion and interaction provided beekeepers, trainers and other key actors some opportunity to resolve the tensions and contradictions themselves instead of being presented with some solutions. However, I recognise that my role as interventionist researcher was significant for enabling the platform to be constituted, and that such research can mobilise the emergence of a boundary crossing model solution. This process, facilitated as a rigorous expansive learning process, presents a possible way of strengthening and enabling learning commercialisation of natural resources products for both enterprise groups and trainers in this ever changing world characterised by constraints, challenges, contradictions and new opportunities for learning and change.

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# Appendix 1: History of beekeeping in Zimbabwe

## Notes

### Pre-Colonial

During the early 1500s MacGongale (2001) quoting a letter from Diogo Alcacova to the King November 15, 1506 reported an early establishment of trade at the Sofala Bay between among Local Africans and some Muslim. Although this trade was in Mozambique MacGongale noted the strong relationship between the Ndaus who are the Shona speaking dialect in Mozambique and those in Zimbabwe and how such relationship could have extended in trade of ivory and gold copper and other products from inland Ndaus and Karangas as far as Great Zimbabwe (Huffman, 1972; Lancaster and Pohorilenko, 1977). Such trade was also capitalised by the early Portuguese in the 1600s that also started to compete with the Africans for the same products. Other literature it is reported that in Southern Central Africa – which is now known as Angola, Zambia Tanzania and Mozambique, traders from as far as Portugal, Britain, and Zanzibar set up networks with local bee hunters to trade in beeswax (Wainwright, 1990). If beekeeping trading was one of the products which was being traded with Europeans I find no reason why the Nduas in Zimbabwe with their relatives in Buhera were not trading in honey products and this could have marked the early trade of honey in Zimbabwe. Wainwright (1990) pointed out that man made nest from tree bark, hollowed log, baskets and calabashes and were hung in trees for bees to come and occupy. Early beekeeping and honey hunting in Zimbabwe.

### Colonial

Decline in the Independent African systems, colonisation and the emerging of the white mining industry led to an expansion of markets for both labour and agricultural products such as grain and cattle (Andersson 2002). There was also a rapid response by the Black Rhodesian societies to the new economic systems which coincided by state imposing taxes that forced people to generate a cash income (Phimister, 1974). It was also argued that during this period the state policy in Rhodesia was designed towards labour mobilization, taxation and the systematic supply of forced labour to white settlers' mines and farms (Phimister, 1974; Andersson, 2002).

not everyone responded positively to the state repressive approaches of mobilising labour through forcing people to pay tax, as most people could use income from grain; livestock, beer and other products sell especially to mines workers to meet their tax and other livelihoods needs (Phimister, 1974; Andersson, 2002). A number of policies were implemented to curb these activities in order to improve the labour supply to the farms and industries (ibid). These policies include Land apportionment act of 1940; Natural resources act of 1942 and Native Land Husbandry act of 1951, these policies were aimed at limiting the land holding of the rural peasant farmers and to increase division between the rural and urban areas in order to maintain a steady supply of labour to industries and farms which were heavily affected by the seasonal labour migration as men leave for their rural homes to plant crops by the start of the rain season (Andersson, 2002). Maize control act of 1931 and Cattle levy act of 1931 and 1934 also affected the marketing of maize and cattle as the sells became low due to poor prices.

In the southern parts of Buhera where there has been a history of recurrent droughts, a lot of people were being forced to sell cattle not just to meet their food requirement but also to pay for tax (Andersson, 2002). Even though Andersson (2002) noted that not everyone had enough cattle to sell or had cattle at all and that cattle had other uses such as payment for marriage and draught power, however his report did not take note of the role of natural resources southern Buhera and how they played out in mitigating food and cash shortages for households without cattle. During my interview with an eighty seven year old Headman Mashumba in Buhera he noted the importance of natural resources products especially honey even long back before the establishment of the current honey markets honey after independence was being used to ..... and probably to get income to pay tax. This was also supported by Phimister (2002) who noted that in the Rhodesia Herald, of 27 October 1987, a native from Mashonaland who was asking 7 shillings for a calabash of honey weighing about 1, 5pounds at a mine in Matebeleland.

This justifies what Wainwright (1992) called the destruction of the local productive industries and traditional expertise in Africa as foreign manufactured goods were flooded in the market and the role of Africans were reduced to plantation workers or producer of an agricultural commodity were price fall year after year.

### Early independence

The gaining of the independence by the Zimbabwean government and the black majority created a new order to create a society with equality, employment, wealth, educated and socially secure (Sylvester, 1985; Dhlwayo, 2001).

This was achieved through policies which were equipped to ensure that the economy is robust and capable of sustaining a qualitative leap from capitalism to socialism at some point in future (ibid)

The policies included

Narrowing the economic gap between racial groups by redistributing some of the society's assets and incomes, revitalizing African assets, and government providing new, non-material assets to Africans in the form of improved education, health facilities and housing; stimulate agricultural and industrial output and channels for aggregation and articulation of majority interests (Sylvester, 1985, p.31)

Such policies included the decongestion of the rural areas through resettling the black majority into the former commercial farming areas, and a heavy government cash injection and subsidises into the agricultural sector, supplemented by rural industries, liberalization of the investment incentives, improving marketing and transportation infrastructure and

establishment of growth points. This also saw most of the black Africans shifting from the production of the staple crops to cash crops such as Burley tobacco, groundnuts, cotton to mention a few (Ibid). In Buhera south where my study is focusing on this also marked a shift from the traditional livelihood activities from cattle sells to a more drought resistant cash crop cotton and red sorghum which was being grown on forward backward contract by companies such as cotton company and Chibuku breweries respectively. Talk about support by interview... beekeeping was now relegated to another industry as the thriving economy from mainstream agriculture and remittances from people working in bigger towns like Harare. Support by income from natural resources such as beekeeping was not important except for the few enthusiast beekeepers, and also on the other hand the heavy effect of pesticides by cotton producers during the period could have killed bees.

What type of nature-culture relationship is embedded in learning commercial beekeeping? (support of interviews)

#### **ESAP period**

As the post independence growth was not fast enough to absorb a rapidly growing young labour force nor sufficient enough to generate the tax revenue for continued expenditure in basic social services in November 1991 the government launched Economic Structural Adjustment Programme (ESAP) was seen as an option to resuscitate the ailing economy (Dhliwayo, 2001; Addisson & Laakso, 2003). The core objective of ESAP was to liberalise key markets together with measures to reduce the size of the fiscal deficit which had increase substantially in the 1990s (Dhliwayo, 2001; Addisson & Laakso, 2003). Despite ESAP liberalising the market the major blow was in the reduction of budgetary support to social services and some economic such as education, health, subsidises support to agricultural extension services.

Drought of 1992 season and high inflation of the 1990s affected the urban areas, wiped the productive assets of the rural people such as cattle, and also the liberalization of the market affected the most industries especially clothing and textile industry as people in urban areas lost jobs and those in cotton producing areas such as Buhera also lost in terms of price of their cash cow. To the rural Buherans this meant looking to another source of livelihood to fall back on other than the traditional ones, cattle, cotton and remittances from those working in urban areas, and this were natural resources products. Although literature shows that the government had formed a Social Dimension of Adjustment (SDA) to work in tandem with ESAP through calling for support from other players such as NGO to cushion rural poor from the effects of reduction of social services support. This period also saw the recognition of natural resources as a source of livelihood to drought prone areas through the formation of CAMPFIRE program (it started by supporting wildlife and then diversified), Zimbabwe Farmers Development Trust (support beekeepers) and Southern Alliance For Indigenous Resources (non timber forest products). This period also saw the formation of the Buhera Beekeepers Association and the expansion of beekeeping as major sources of livelihood.

#### **Land invasion period**

Talk of the loss of the support by ZANU PF due to failure of economic system, support of by the born frees working class, the urban populace and commercial farmers as they view MDC as an alternative party to bring back the ailing economy. The start of the land invasion as a way to win votes by the rural people.

*Have chosen to discuss conflict/contradiction on approaches to land use because it has dominated the Zimbabwean politics and economic reforms discourse during the start of this century.*

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## **Appendix 2: Interview Questions**

### **Semi-structured interview questions for beekeepers**

1. May you please briefly tell me about you and your group's history of beekeeping?
2. Who is involved in commercial beekeeping in this community?
3. What motivated you or your group to start learning commercial beekeeping? (individual & community goal)
4. How are you making sure that your motives are achieved?
5. How has your beekeeping practice s evolved/transformed to meet your needs?
6. How are you or your group learning commercial beekeeping practices?
7. How is learning commercialisation of beekeeping addressing your individual or other people's needs?
8. What challenges are you facing learning beekeeping commercialisation as an individual and or group?
9. How are you addressing these challenges as an individual and or as a group of farmers, or with a facilitating organisation?
10. What tools (mediation tools) are you using to learning commercial beekeeping? (training manual, vernacular of manual, equipment, age and gender of trainer, existing structures at organisational & community level)
11. How effective are the existing tools (materials) supporting your (group) learning commercial beekeeping?
12. What other institutions are you working with in commercial beekeeping and what are their roles? (local, national or international)
13. What are the roles of different community groups/members in commercial beekeeping (traditional leaders, youth, women, men, disabled, widowed, single parents, orphans and vulnerable children)
14. What rules and regulations are governing commercial beekeeping and how are they working? (local, national, international)

### **Semi-structured interview questions for organisations' facilitation of commercial beekeeping (Trainer and director & NGO and Gvt department)**

1. Please tell me briefly the history of your organisation with regards to beekeeping?
2. Who are you working with in commercial beekeeping?



3. What motivated your organisation to facilitate learning commercial beekeeping by individuals or groups in rural communities? (org. goals)
4. How do you ensure that your organisational goals are achieved?
5. How has the practice you are facilitating evolved/transformed to meet your and organisational goals?
6. How is the message getting to beekeepers in areas you are operating?
7. How is a facilitating learning commercial beekeeping addressing need of beekeepers and participating communities and country at large?
8. What challenges are you facilitating in facilitating commercial beekeeping?
9. How are you addressing these challenges? (as an organisation or with beekeepers)
10. What tools (materials) are you using to facilitate learning commercial beekeeping? (training manual, vernacular of manual, equipment, age and gender of trainer, existing structures at organisation and group level)
11. How effective are the tools (materials) that you are using? (are beekeepers accepting the tools or not & why)
12. What other institutions are you working with in commercial beekeeping and what are their roles? (community, national or international)
13. What are the roles of different community groups/ members in commercial beekeeping (traditional leaders, youth, women, men, disabled, widowed, single parents, orphans and vulnerable children)
14. What rules and regulations are governing commercial beekeeping and how do are they working? (Local, national & international)

## Appendix 3: Interview Transcript – SA H3

**Hluleka 3, beekeeper**

**Date – 23/07/09**

**Venue- Hluleka training centre**

Q: How did you start beekeeping? When you were growing up was there any beekeeping in the area?

H3: I only started to know beekeeping when I was trained in 2007.

Q: Were people harvesting honey when you were growing up, or you only started to know honey in 2007?

H3: I knew honey just for eating not for sell

Q: Who was harvesting?

H3: When we were going out we would harvest.

Q: How were you doing it?

H3: If it was a small colony we would just harvest honey, but if it was a big colony we would smoke the bees first.

Q: Were you harvesting from trees, rocks or ground hives?

H3: We would harvest any wild hive, but we would use an axe to open wild hives in trees.

Q: What motivated you to join beekeeping project?

H3: I was just employed because I wanted to work not because I was knowledgeable about bees.

Q: Are you employed to do beekeeping?

H3: Yes

Q: Is it the reason others in your group are doing beekeeping?

H3: At first we were employed now that we received training our hopes are high about beekeeping.

Q: If the money stops coming will you continue doing beekeeping?

H3: Looking at the group there is hope that we will continue doing beekeeping

Q: How are you learning beekeeping as a group?

H3: We are only teaching newcomers who have replaced those who dropped; otherwise all those who received training know how to do beekeeping.

Q: How are you teaching newcomers?

H3: We tell them and show them how to catch bees and transfer the bees.

Q: Do you also let them do it practically?

H3: Yes we do.

Q: What problems are you facing?

H3: At first we did not have space to put boxes, but now the site have been fenced and we can now go and put the bee hives there. The problem is that we are not sure about the safety of the boxes in the new site.

Q: Did you experience theft cases?

H3: No because someone is guarding.

Q: Are you prepared to do beekeeping on your own besides working for the group?

H3:.. Inaudible...

Q: Do you think you can work better as an individual than in a group?

H3: It will be the same

Q: Why do you have only seven boxes colonised whilst you have got a lot of boxes in the storeroom?

H3: We had a lot of boxes with bees and then the bees absconded. Bee colonies which we get from the forest are absconding and the colonies trapped through setting up catch boxes are staying.

Q: Why do you think bees are absconding?

H3: I do not know

Q: What else do you think you need to learn to be able to do beekeeping and to be able to sell honey?

H3: I am not sure whether I will be able to extract honey on my own.

Q: As a group if you want to sell honey what do you need to know?

H3: If we are going to extract honey as a group we do not know our market.

Q: What is the reason of the group doing beekeeping, is it to sell honey or to eat?

H3: Selling

Q: Are the funders aware of your problem of where to sell your honey?

H3: No

Q: What other problems are you facing as a group?

H3: Ntinga has promised uniform but they have not delivered it

Q: What problems do you have in learning beekeeping; do you have enough materials like books to refer to when doing beekeeping?

H3: Reading is impossible but discussions are possible when we have got shelter.

Q: What other organisations and people are you working with in learning beekeeping?

H3: We do not have any local support we do not have a committee.

Q: But, What do you need a committee for?

H3: We need a committee, but we are not in a position to elect one, as a committee is supposed to be elected by the chief.

Q: Who else is working with you?

H3: Ward committee

Q: Do you have different roles for different gender groups when doing beekeeping?

H3: Climbing trees is for men and women will carry catch boxes.

Q: What other roles do you divide amongst yourselves?

H3: Off loading of materials is done by men.

Q: When learning beekeeping which group learns faster men, women or young or elderly people?

H3: The young ones.

Q: Are the young ones teaching the elderly?

H3: The young ones explain.

Q: What rules/regulations which are helping you promoting learning beekeeping?

H3: We have rules like when transferring bees you are not supposed to eat honey in combs.

Q: What else.

H3: Not to work in dangerous places and not to cut trees.

Q: Is it helping or it is preventing you from learning beekeeping?

H3: It helps.

Q: Do you also have questions for me?

H3: What is the reason for doing this?

Q: I would want to see how you are learning beekeeping and to help you do it better. I would also want to see how you can improve learning that is the reason I am asking you about the problems you are facing for me to be able to recommend.

H3: Are you going to help us because the project will stop paying in September?

Q: I wanted to do it before September so that I sit down with everyone and discuss, especially in terms of learning and your objective of doing beekeeping.

AG EO: There are some legislation which promotes natural resources conservation such as those that discourages deforestation and veldt fires to mention a few. All these encourages bees to be protected if they are followed, our local headman is very strict with implementing natural resources conservation legislations.

Q: Which other stakeholders are you working with?

AG EO: ZFDT, an NGO at the moment is the only buyer. Beekeepers are looking for other buyers after ZFDT failed to purchase honey in December 2009. Most beekeepers were stranded with honey after they failed to sell honey to get income for the festive holiday.

Q: Do you train beekeepers costing and budgeting?

AG EO: We help farmers, and sometimes we help to sources market, although we would want farmers to be organised. ZFDT was reliable but we have since started to look for an alternative market. We are supposed to go to Mutare with the committee so that it signs a contract with another buyer. We are also pursuing ZFDT to come for a meeting to discuss the current problems, but it has failed. If ZFDT had come to these meetings we would have wanted to discuss outstanding payments. I have been trying to get in touch with ZFDT several times, but it is giving us empty promises. This is costing me, I am calling ZFDT but it does not reimburse the costs.

Q: What structures do you have in ward 28 to support commercial beekeeping?

AG EO: There are area committee, and then there is a board for wards 26, 27, 28, 24 & 25. There are some beekeepers who only practise subsistence beekeeping.

Q: Do you train group and constitution development?

AG EO: We once did that with Mr. Mapondera former director of ZFDT. However beekeepers take time to understand, they sometimes do not listen to office bearers.

Q: Thank you very much, I have finished my questions.

AG EO: When it comes to meetings, beekeepers, do not respect meetings, they only respect marketing days.

## Appendix 4: Research Diary

Hluleka, South Africa - Christopher Masara

Masters Environmental Education

Date	What
23 July 2009 Interview Hluleka	<p>Conducted interviews to Hluleka beekeepers. I met beekeepers at the storage house made of metal containers waiting to be interviewed, a total of about 20 beekeepers one supervisor and a manageress. Sindiswa (Makana Meadery trainer) assisted me in selecting beekeepers to be interviewed based on gender (age &amp; sex) and representation in terms of spatial distribution (villages people where coming from). Each beekeeper was taken into a car I was driving, for interview whilst other remained in the storage house since it was raining. Participants were advised to leave after being interviewed and were told not to tell others of what they had been interviewed as this was going to protect their privacy and would not temper the next interviews. Below is a description of people interviewed based on the way they presented themselves to the researcher? Young is described as below thirty, Middle aged 31 to 45 and old above forty.</p> <p>H1- Elderly man from Hluleka            H2- elderly women originally from Swaziland            H3- young woman            H4- middle aged women            H5- young lady 22 years            H6- young unmarried man            H7a- young woman unmarried (manageress)            H7b- young woman unmarried (manageress)            H8- middle aged man            H9- middle aged woman            H10- old aged man</p> <p>In the storage room there were Kenyan top bar hives, langstroth and honey extractors. After the interview I visited a home stead which had 3 Lang troth hives in a garden. Sindiswa inspected the bees and she advised the beekeepers to take off the super as the bees were cold and not active. The garden had citrus fruits cabbages and mulberries, but it looked dry.</p> <p><i>Aspect of distance from the trainer or extension person affect agency because people lack motivation of often seeing the trainer and also due to long turn around period for their problems to be attended to.</i></p> <p>The areas looked very good as it was over looking Indian ocean in the wild coast and it was well forested.</p> <p>We visited another homestead and there was one catch box with bees, but the bees equally looked cold and inactive.</p>
24 July 2009 Interview Ntinga Mthatha	<p>We met a guy who was working on a computer, who was introduced as the project officer and that is the one I interviewed.</p> <p><b>Mandate of Ntinga</b></p> <p>To be the implementing agent of the O. R Tambo district Municipality's (ORTDM) local economic development programmes focusing on</p> <ul style="list-style-type: none"> <li>• Strategic infrastructure such as rail, dams, electrification, roads (priority surfaced and rural access roads)</li> <li>• Agriculture and food production</li> <li>• Social infrastructure and services</li> <li>• Institutional building</li> <li>• Any other functions delegated to Ntinga by the O.R Tambo district municipality</li> </ul>

	<p>in terms of its powers and functions.</p> <p><b>Mission for Ntinga development agency</b></p> <p>Ntinga shall attain her vision through;</p> <p>Implementation of the district growth and development strategic goals of the O. R Tambo region, focusing on Agriculture, Tourism, Forestry and Mariculture.</p> <p>Mobilisation and leveraging of financial human and other non financial resources in pursuance of innovation and best practices including indigenous systems</p> <p>Institute integrated poverty eradication programmes and initiatives aimed at improving the quality of life of the people of O. R Tambo region</p> <p>Create, support and encourage promotion of business opportunities skills development and employment opportunities in the Tambo region</p> <p>Sustainable, effective and efficient harnessing of tangible and intangible resources of the O.R Tambo region.</p>
<p>20 October 2009 Field visit to Hluleka)</p>	<p>We arrived at 8:50 at the storage room (container); there was no one to open the container although about 10 beekeepers had arrived. The person who had the keys to open the container was said to be in Hospital. Sindiswa was not happy about the manageress' absents and lack of urgency as we had met her the previous day and had agreed to meet at the storage room at 8:00am. Later the keys arrived with another beekeeper and the container was opened.</p> <p>Beekeepers were asked to clear the container to prepare for Woolworth team which was coming to inspect the premises for possible engagement for a marketing contract. There was division of labour among beekeepers as men transferred the heavy stuff out of the container while some women were sitting and others were doing the light work like sweeping and cleaning of buckets which had gathered dust.</p> <p>Materials which were in the container included; honey settling tank, honey extractor, Langstroth hive, buckets, timber to make top bar hives</p> <p>I realised that there was cell phone network for MTN, and Vodacom, more than half of beekeepers had cell phone and hence there is a good communication system hence allowing good flow of information</p> <p>Meeting was facilitated by Sindiswa started at 9:00am and there was a talk about Woolworth people coming to talk about buying honey. The manageress was not yet there and Sindiswa wanted clarity about catch boxes seems missing from her records as she keeps records.</p> <p>We picked the manageress going to the storage room at 9:25 am on our way to the pick sawdust and smoker where we were staying.</p> <p>First inspection at the shop</p> <p>We inspected four catch boxes all in gum trees about 3 metres high. Male supervisor and a beekeeper inspected the catch boxes, while one was supporting the ladder the other had to climb up the tree. Female supervisor and another female beekeeper lit the smoker. We then proceeded to inspect hives which were in two vegetable and fruit gardens at community members' homesteads. Hives in these gardens were on raised plat form of about 45cm to a metre from the ground, both males and females were doing same work.</p> <p>We returned to the storage room to wait for Woolworths people and discuss our findings There was no honey in all suppers, and Sindiswa made sure that she removed all the suppers from the hives. This should have been done long back since Sindiswa advised beekeepers to do that in July 09 when I visited the area with her doing interviews.</p> <p>Question I was left with</p> <p>Is the area suitable for beekeeping?</p> <p>How many times did Makana Meadery visit since November 2007?</p> <p>Why is it that the beekeepers do not follow advice from Sindiswa? I.e. taking off the suppers which was given on the 23<sup>rd</sup> of July 2009 but three month later 20<sup>th</sup> of October 2009 the suppers were still there.</p>

	<p>Answer to failure to remove the suppers.</p> <p>Beekeepers defended themselves that they did not know the difference between the supper and brood box. Although it was true when Sindiswa asked each beekeeper to pick brood box from the storage room some picked the suppers, but when people were advised in July they were shown a supper</p> <p>Sindiswa was phoned and told Woolworth people had an accident and were no longer coming. There was no new date which was set when they would come. Questions: Was it worth for Woolworth people to drive from Jo'burg to see nothing, if they had come, maybe it was a blessing in disguise.</p> <p>Sindiswa and the manageress had a heated argument about a book called CHAZILE Manageress had forgotten the book at the first vegetable garden where we had an inspection and she did not want to go and pick it. Sindiswa threatened to leave for Grahamstown to abort the intended three day training.</p> <p>After some intervention of beekeepers the Manageress and two beekeepers went and picked the book.</p> <p>I interviewed Sindiswa What the book was supposed to contain; and it was supposed to have materials received from Makana Meadery like hives, suppers, bee tool, bee suits etc. Records of catch boxes with bees, absconded hives and with bees, broken hives, harvests amount received, training received problems being faced. In short the book was a record of performance of Makana Meadery and all records were supposed to be send to Ntinga the project holder to assess the performance of the trainer and service provider ( Makana Meadery)</p>
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#### Observation schedule

What to Observe	What to write
Mediating tools and signs	What tools are being used, What type of training material is available, Language in training material, type of beehives, method of harvesting and processing honey and marketing channels, key concepts & approaches being promoted, age and sex of trainer.
Subject	Gender relations, gender composition , Age, Language, education level and other experiences
Object	Mission and vision of groups and participating organisations, values and objectives, purposes of beekeeping practices, needs motives
Community	Stakeholder , different roles of stakeholders (chief, disabled, widowed, orphaned & vulnerable children)
Rules	Power relations at community level, Taboos, Procedures, government policies,
Division of labour	Roles and responsibilities, gender in division of labour (women, men, disabled, widowed, orphan & vulnerable children)

## Appendix 5: Analytical memo case- Hluleka

Tensions & contradiction	Explanations
Local rules, beliefs, taboos	<p><b>Traditional belief 1: Bees are ancestors</b></p> <p>Traditionally some of the community members' beliefs in Hluleka believe that bees are ancestors and when they come to your home stead you should brew traditional beer and talk to ancestors to leave. This is as shown by conversation below</p> <p><i>Chris: Do bees or honey have any role in your culture?</i></p> <p><i>H1: If wild hive come from the veldt and get into your house, it represents ancestors, but not any other wild hive.</i></p> <p><i>Chris: Do you harvest honey from such a colony?</i></p> <p><i>H1: No, we brew traditional beer for them to leave.</i></p> <p><i>H4: It depends on your belief, but when bees comes to your house you are suppose to brew traditional beer.</i></p> <p><i>Chris: What does the other belief say?</i></p> <p><i>E/H4: Some people do not believe that bees are ancestors.</i></p> <p><i>Chris: So when they brew beer what do they do?</i></p> <p><i>H4: Family members are called in and they must talk to the bees before drinking the traditional beer.</i></p> <p><i>Chris: What is the role of bees in your culture?</i></p> <p><i>H9: Our culture deals with bees which come from the veldt into the house and we brew Umqombothi [traditional beer] and...</i></p> <p>This belief can be linked to why some people do not want to keep bees at their homesteads, as they will not be able to sell the honey from ancestors. However they are some community members who have offered to keep hives from the beekeeping group in their vegetable gardens while the project members were waiting for their apiary to be fenced. Although it created another tension between beekeepers and vegetable garden owner as beekeepers were destroying crops when they run away from bees while inspecting, this is going to be a thing of the past as all hives will be transferred to apiary soon.</p> <p>Some of the varied traditional belief in some other areas in Eastern Cape where beekeeping is being implemented such as Bolotwa shows that people are scared of being stung by bees having seen a person being taken to the hospital and another one dying after being stung by bees. When asked why did other people dropped from the project, this is what was said</p> <p><i>B2: They were scared of bees; some are lazy and could not abide by the regulation of the project that you can't let others work for you. Some were scared of bees because they had seen a person who had been stung by bees and was taken to hospital, and the other two died.</i></p> <p>When beekeeper B2 was also asked about local belief in bees, she also indicated that the local cultural belief is that women were not suppose to deal with bees or to eat honey, bees were also ancestors and for her she could talk with bees before working with them the next day for her not to be stung. This metaphor of talking to bees as ancestors before working with them is a sustainability concept since beekeepers will have confidence to work with bees and reduce stings hence not abusing ancestors. See the conversation I had with the beekeeper below.</p> <p><i>Chris: In your culture what do bees mean?</i></p> <p><i>B2: Women are not supposed to eat honey and are not supposed to go near bee hives that is the culture. I am related to bees, it's our ancestors or their totem.</i></p> <p><i>Chris: If it's your ancestors how are you supposed to deal treat them?</i></p> <p><i>B2: As bees are my ancestors and when going to handle bees the next day, I should talk to them (bees) in a dream that I will not be abusing them. This happens because bees come in my dream and I will not get stung quite often when working with them.</i></p> <p><i>Chris: What about others who are not related to bees?</i></p> <p><i>B2: For those who are not related women are not supposed to eat honey therefore they must not go near bees. There are so many beliefs some believe that there is a butterfly, but I haven't seen it. Some believe that there is a snake which stays with bees. The butterfly will sting you on the head and you will die. And the snake is always with the bees; although it's believed the snake will not bite you, but people are just scared of snakes.</i></p> <p>My Interview with Mr Gomna from King Williamstown was agreeable to the concept of bees being ancestors although it varies from family to family see my personal communication below</p> <p><i>Bees are believed to be ancestors, and when they come to your kraal or house, you are supposed to brew traditional beer and talk to those bees for them to leave. You are not allowed to box those swarms, however it's not all people who believe in that tradition and it is only applies to bees which come to your kraal or house hold not all bees,</i></p>

People should understand that bees do not like alcohol; therefore beekeepers should not work with bees when they have taken alcohol,  
 When someone dies in your locality you are not allowed to work with bees until the funeral is over. If you work with bees before the funeral is over your bees will abscond,  
 Mr Gomna also highlighted that you cannot work with bees with a person who is epileptic, You cannot also work with bees when you are working with someone whom you always have arguments with, so when choosing someone to work with you should agree with that person on the mode of operation and to avoid having arguments (Gomna pers \_omm., 15 October 2009)

In Qoqodela another community in Eastern Cape where the trainer had experience with the local community also believe that bees are ancestors and they do not allow beekeepers to sell honey from hives which are around homesteads; see conversation which I had with the trainer from Makana Meadery

*MMT: There is a... it's unfortunate that my computer is not working now. There is a house in Qoqodela that bees have settled comfortably. We were not even allowed to put a bee hive near that house because people believe that they are ancestors. Honey from that house is not for sell, It is only harvested when people have brewed a traditional beer; otherwise people only eat the honey. So by way of brewing the beer it is a way of thanking the ancestors, then they will eat whatever the ancestors have brought.*

*Chris: But are they allowed to sell?*

*MMT: No they are not allowed to sell.*

Fear for snakes, B2 also confirmed that people are scared of snakes in hives. Snakes come to hives in winter season looking for warmth, and some people think that bees keep snakes. This was confirmed by my field visit to Bolotwa with beekeepers from Hluleka when we saw a puff udder, beekeepers where so scared and they ran away and some of them could not wait to see it being killed. See my conversation with B2 with regards to snakes in hives

*Chris: Have ever seen a snake in a hive?*

*B2: Yes in two natural ground hives not boxes*

*Chris: How did you treat the snakes?*

*B2: We started making fire, but since it was windy we were scared the snakes were going to be irritated by the fire, therefore we left without working on the hive.*

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**Traditional belief 2: Widowed women wear black clothes as sign of bereavement**

During my visit to Hluleka I also observed that married women who are beekeepers were not wearing trousers although unmarried were putting on trousers.

Another contradiction between customs and beekeeping is that recently widowed women are supposed to wear black clothes for always for a certain period of time as a sign of loss of their beloved ones. However bees hate black clothes, therefore such women are being forced to stay away when working with bees. This was confirmed also during my field visit during week 21-23 October 2009 when a young lady putting on black clothes had to stay away from bees during inspection because of the colour of her clothes. Also see a conversation I had with Makana Meadery trainer.

*MMT: ....When I was there, there was a young woman whose husband had passed away, so she was putting on black clothes as a symbol of bereavement. I can't work with a person who is wearing black, black clothes attract bees, but I could not force her to take off the clothes. So she was not doing some practical. Sometimes being a female it is difficult to work with males, sometimes they become stubborn and they do not want to be controlled by female, so you have a way of telling them that you are doing this job.*



## Appendix 6: Intervention workshop programme for Buhera

**Dates: 2 and 3 March 2010**

### Day 1 Programme

10:00-10:30	Welcome and introductions	Board	Chairperson
10:30-10:45	Workshop objectives	Researcher	
10:45-11:15	History of beekeeping by individuals	All	
11:15-11:30	Identify and develop objectives of beekeeping	Researcher	
11:30-12:30	Group work identify factors disturbing Learning commercial beekeeping in Chapanduka	Groups	
12:30-13:00	Presentation of findings by researcher	Researcher	
13:00-13:15	Discussion and relook at the problems	Researcher	
13:15- 13:30	Prioritize	Researcher	
13:35	Lunch & break for the day	All	

### Day 2 Programme

10:00-10:15	Recap of day 1	All	
10:15- 10:45	Presentation of problem solving approach	Researcher	
11:00- 11:45	Problem solving by groups	Groups	
11:45- 12:30	Presentation of Critique of solutions	Groups	
12:30- 13:00	Way forward	All	
13:00-13:10	Closing remarks	ZFDT	
13:00	Lunch & Depart	All	

## Appendix 7: Problem solving questions

### Hluleka

1. What is the objective of training commercial beekeeping?
2. Who should be trained in commercial beekeeping?
3. What should be selected?
4. Why is it that rural people are not practising commercial beekeeping?
5. What is the history of not practising commercial beekeeping?
6. What are the effects of practising commercial beekeeping?
7. How can we make sure communities can practise commercial beekeeping?
8. What strategies can we use for communities to practise commercial beekeeping?

### Buhera

1. Description of the real problem
2. What the root problem of the current problem?
3. What is the history of not practising commercial beekeeping?
4. What are the main factors involved and why?
5. What are the effects of the problem to commercial beekeeping?
6. What are the strategies for overcoming the problem?

## Appendix 8: Intervention Workshop transcript

### Pricing discussions

#79: Beekeepers have been discussing issues around buying on credit, should we start discussing buying on credit or should we discuss low prices although wax is another product. I think this issue was not conclusively dealt with, you were the first to introduce the issue, and may you please open the discussion?

#80: The way comb honey is being bought in this area, it is as if it is one product, however they are two products (honey & wax) we however do not know how this can be considered during pricing, in order for the honey business to alleviate livelihoods.

#81: I think Agritex is also supporting, what I don't understand is beekeepers are saying there are two products whilst it is one product. When we take an example of maize and cotton, if I sell cotton do you break down selling lint cotton and seed cotton or its just cotton, and when you sell maize do you also breakdown products of maize?

#82: I would want to assist beekeepers, they do not want to say they will have sold by products of comb honey, however their honey is valuable. For example cotton, most farmers no longer want to grow it because of low prices which are offered by buyers. They were used to sell cotton at competitive prices and they would buy scotch carts, cattle and grocery for the whole year. When farmers grow it and after harvesting three bales (100-200kg is a bale) they would buy a carton of sugar (equivalent of 20kg). Farmers will start to consider the time they have spent producing cotton and the by-products the company would get such as lint cotton and seed cotton to mention a few. Nowadays farmers in this area have abandoned cotton production although this area is a cotton producing area. In a way farmers have started questioning whether your company knows that it gets by-products from their honey, such as honey and wax. Low prices would make farmers reconsider their options. **[Beekeepers are rational individuals]**

#82: Therefore you as beekeepers what is the ideal price for comb honey? That is where we would want to thank the researcher for allowing such a forum to happen, farmers are here, advisers from Agritex are here and I am representing the company which is buying honey, now we are together.

#83: I think the question is good that is why we discussed about social, economic and environmental aspects to be considered. When we are discussing these issues they are real business issues, we do not want issues of meeting food security only, but you should consider buying productive assets such as a vehicle, building or even weddings being funded from selling honey. I think as farmers you need to consider this when pricing, this would assist you to come up with a good answer.

#84: This is a real issue; please let's leave the farmers to discuss. **[Beekeepers were given time to discuss an ideal price for their honey while other issues were being discussed]**

#85: The issue of politics which you mentioned, if political issues are there are problems. The problem of politics is that, if those who represent beekeepers show their political affiliation it will affect the whole association, even the buyer will be aligned to a political party which belongs to beekeepers' representative. As an NGO we are apolitical and if we are seen supporting a certain party our role will change from alleviating poverty to a political agenda. Therefore as an NGO we

support everyone irrespective of his/her political alignment and remember this is a community project, it is there for the community to benefit. If you as a community start to bring politics into the project we will leave and go to another area, right now we are in Masvingo, Mash West, Manicaland and Mash Central in all these areas there are associations and there is honey. However it is a loss to people who would want to benefit, because at the end of the day I am not the one to benefit, you are the one who get knowledge, you are trained. If this happens the community will be affected. I think in future we would want to deal with this issue when we conduct refresher course. Can we work with Agritex instead of association committee members because they might be aligned to some political parties? Agritex will be there to gather people irrespective of their political alignment, they are also known in this area and the community members understand them. The association will be told it is important that Agritex will do the coordination. In case there are other questions to be asked they can be able to deal with them because they will be aware of our agenda.

The other issue is that we have worked well for some years; I have been noting that we had a credit in 2009 which we paid in 2010. With the experience which we have, it does not call for that, but it would pay if we work towards in strengthening our relations. There are so many interventions, the one we had in Masvingo was of dam construction, in order to provide access to water. In case one intervention is a success and we have good relationship it is easy to introduce another intervention, because we already have a relationship. It is easy rather than going to a new area, even the meeting we are having they help us to understand your problems. For example cotton is a drought tolerant crop; it is good for this area unlike growing maize. It is also the same with livestock a donkey can tolerate drought because it can even feed on tree bark unlike cattle. The information which we are getting will help us to come up with proposal to present to various donors. We are therefore saying can we use your office (Agritex) if we would want to have training because we do have different situations, this is a drought year, and we will have a year for national events and it will be easy to say this person belongs to this political party. We don't want therefore to run away from this area because we are associated with a certain political party, the community will suffer.

An NGO is an organisation which is formed to help people, if the people are not cooperating then it can't do anything, despite the fact that they would have been given money. It's the community which will suffer. At national level we work with Mr. Save (Agritex Apiculturist) when it comes to beekeeping. He advises us to get to Agritex to do our interventions, because Agritex officers know the area and they will be able to work with us. Therefore I am saying we will be able to work together in case there is another project, for this meeting we have been helped by the researcher. In case there is another project just like beekeeping, although beekeepers now know that if our lorry comes they held to bring honey for sell. In future your office and the school which is represented by the teacher, he is part of this process; he also presented their problem we will find what to do. However this infrastructure we will still need it in future, in case we have got training. I am therefore saying we will be able to work with influential people so that we promote rural development without any political alignment as politics provokes people, as what we realised during the election last year.

#86: Yes as Agritex you have been asked to respond so that we get to the issue of price.

#87: It's fine (Agritex officer).

#88: I would want to plead with you that you do not show any political alignment we had another meeting or workshop where beekeeping issue had to be abandoned when people engaged in politics. It later made people to ask whether the meeting was for beekeeping or a political rally. **[ZFDI being warned of political alignment of staff members from NGOs)**

#89: So it happened.

#90: Yes, it happened in this classroom with ZFDI, we therefore failed to understand whether the person was doing beekeeping or it was a political rally.

#91: Do you still remember the training, and the people who were associated with such statements?

#92: We don't think we need to say their names.

#93: Not beekeepers names but those from our organisation.

#94: When we finished the workshop people were confused, because during the workshop there were some pictures which were taken. We even thought that they were lying that they do beekeeping whilst they had another agenda.

#95: It happened, if we have heard from locals its true it happened.

#96: Which year was that?

#97: .... there were some interruptions and noise...

#98: I think you can follow up later at personal level after the workshop, let's talk about price issue.

#99: I want to remind you that you said your honey is valuable.

#100: Our price is USD7/kg.

#102: There was laughter.

#103: Is this price, what you have agreed.

#104: It is for us to discuss [negotiate].

#105: Is this price for us to negotiate so that we get the real price, even the price of goods are known. Even those who buy like Mr. Shimolke we know him, I don't think that is the real price and I think no-one would bother to come to this area.

#106: What we have done was to give our price then we would negotiate, you would rather say USD7/kg is too much, and then you say a price which is comfortable with you and we negotiate.

#107: The way you have said it it's like selling this newspaper for USD100, which is unrealistic that is exactly what you have done. This approach helps because you think when we start at very high price when we negotiate we will settle for a price which will be relatively good for you. The following is what is happening in honey industry, we are buying comb honey. When we buy raw honey we incur transport cost to the purchasing point, and I have brought this processed honey to show you how we package it. And this is what you see in an ordinary supermarket or in pharmacies. What I therefore want you to understand is that when I come from Harare with my vehicle and buy raw honey. I will then take raw honey to the factory for processing. I want to get to the issue of wax you have been referring to. For every 100kg of raw honey we get 70-

75k of pure honey, 25-30% it's the substrate (waste) and that is what we use to make wax. The problem which we have is that of the 25-30% we don't get it all as wax, there is processing loss. Therefore it does not translate that 70-75% is honey and 25-30% is wax. We usually get 20% of the material used as wax. May I know from you how much wax does you get from the substrate?

#108: We also get very little, it's the same.

#109: I don't want to be saying things which are abstract, or things that you are not familiar with, it's not for ZFDT only we all get very little wax. It is almost like insignificant. If therefore we provide transport cost, accommodation for buyers and processing cost such as water and electricity and transporting processed honey to head office. If the farmer would want USD7/kg and the problem we have in the market is that food prices are going down, that bottle of honey is costing USD2-3 in Harare. If therefore I buy honey at USD7/g they will be no reason to buy honey here. That is the real situation since it will be no longer a business we will be doing a subsidy. If our honey can't get into the market at reasonable prices then there will be no need for business, it's only in the upper market where honey get a premium price of up to USD4/bottle. If we buy comb honey at USD7/kg which cannot produce 2 bottles of pure honey, then they will be a loss.

#110: We have understood it. It's good that our discussion are helping us to understand what are the problems in commercial beekeeping, it also helps us to understand what are the real issues at beekeepers level, Agritex and ZFDT the company. What we would want to do is to analyse our challenges in commercial beekeeping and put them in categories. In case we need to combine issue we would do that, however we would want to focus on one or two issues that we would really analyse, maybe it is the issue of price. This is the reason why we would sometimes allow the discussion to go undisturbed. I am therefore going to present my findings and what you have been saying not in any order.

1. Price, the main problem of price is not it is too high or too low but my view as a researcher is how we are pricing. How are we pricing honey? The second item is the calling of dates for honey purchase; this issue is in two parts. The first thing is you agree with ZFDT on a purchase date, but ZFDT fails to come on the agreed purchase date and beekeepers complain. On the second issue the association committee is failing to inform beekeepers about purchase dates in time for them to harvest. Some beekeepers do not even receive the dates at all; therefore the issue of dates is both to ZFDT and association committee and beekeepers. The other issue is community members are shaking hives off trees they are mounted, so that they fall or they would burn areas around a hive to open cultivation land or they would rob hives. I wish I would have said this whilst the headman was here. This other issue is that village heads are allocating cultivation land along rivers, however beekeepers mount their hives along river banks, beekeepers no longer have places to put their hives despite the fact that no-one is allowed to cultivate along rivers.

The issue of constitution and governance was raised today, although I had briefly heard about it. A constitution is a set of by-laws that helps to govern operations of an organisation. The association committee which is the leadership, it is not governed by any constitution because it does not have one. However some groups have got constitutions although they might need to be relooked. The reason which was given was it was taken for ZFDT to amendment, although the constitution should be for the farmers.

Field days, beekeepers are not prepared to contribute towards a beekeeping field day. Farmers are however prepared to contribute towards crop field days, however for them to learn from prominent beekeepers they are supposed to contribute and conduct beekeeping field days. ZFDT does not also give itself time to conduct a field day when it comes to honey purchase in Chapanduka. A field day would allow the beekeepers to invite the district administrator and other government officials; it also allows people to learn about beekeeping.

Politics, the alignment of people to different political parties either party A or B. When A call for a meeting, only people who support a political party that A support would go to that meeting. It also links to the constitution what it says about leadership's political alignment and to what an extent should leaders show it. If the leadership is political then beekeepers will also be political. Maybe the constitution might address this.

ZFDT is also facing problems of manpower and funding, hence it affects beekeepers' expectations.

Beekeepers feel that bees shun improved hives, beekeepers are also not giving beekeeping the attention that it deserves as they are not valuing beekeeping. In this area very few young people are doing beekeeping, it's only that guy and this one and this other one from Dune, and Mr. Tsuru to make them four and all others are old people and I do not know why? Mr.

Mbudzi I think you would want to say something.

## Appendix 9: Analytical memo

### Analysis of change laboratory in Zimbabwe- Pricing

Wals (2007) Social learning processes.	Extracts
Orientation and exploration	<p>#82: I would want to assist beekeepers, they do not want to say they will have sold by products of comb honey, however their honey is valuable. For example cotton, most farmers no longer want to grow it because of low prices which are offered by buyers. They were used to sell cotton at competitive prices and they would buy scotch carts, cattle and grocery for the whole year. When farmers grow it and after harvesting three bales (100-200kg is a bale) they would buy a carton of sugar (equivalent of 20kg). Farmers will start to consider the time they have spent producing cotton and the by-products the company would get such as lint cotton and seed cotton to mention a few. Nowadays farmers in this area have abandoned cotton production although this area is a cotton producing area. In a way farmers have started questioning whether your company knows that it gets by-products from their honey, such as honey and wax. Low prices would make farmers reconsider their options. <b>[Beekeepers are rational individuals]</b></p>
(self) awareness raising	<p>#105: Is this price for us to negotiate so that we get the real price, even the price of goods are known. Even those who buy like Mr. Shimolke we know him, I don't think that is the real price and I think no-one would bother to come to this area.</p> <p>#106: What we have done was to give our price then we would negotiate, you would rather say USD7/kg is too much, and then you say a price which is comfortable with you and we negotiate.</p> <p>#107: The way you have said it it's like selling this newspaper for USD100, which is unrealistic that is exactly what you have done. This approach helps because you think when we start at very high price when we negotiate we will settle for a price which will be relatively good for you. The following is what is happening in honey industry, we are buying comb honey. When we buy raw honey we incur transport cost to the purchasing point, and I have brought this processed honey to show you how we package it. And this is what you see in an ordinary supermarket or in pharmacies. What I therefore want you to understand is that when I come from Harare with my vehicle and buy raw honey. I will then take raw honey to the factory for processing. I want to get to the issue of wax you have been referring to. For every 100kg of raw honey we get 70-75k of pure honey, 25-30% it's the substrate (waste) and that is what we use to make wax. The problem which we have is that of the 25-30% we don't get it all as wax, there is processing loss. Therefore it does not translate that 70-75% is honey and 25-30% is wax. We usually get 20% of the material used as wax. May I know from you how much wax does you get from the substrate?</p> <p>#795: I think using the price of sugar as a base price is fine, during the past days the price of sugar in this area was USD3 per 2 kilograms pack. If ZFDT could bring sugar some people would opt for that, because they would get more from bartering 2kg sugar for a kilogram of comb honey. Although it would cost you (ZFDT) in transporting, I think it is a better option.</p>
Deframing or deconstruction	<p>#820: I think the big problem which we are having is all about how we price honey. Can we teach each other how we price honey? What do we consider, would we go to Mutare to check the price of honey, and do we therefore adjust if the price of honey in our area based on the cost incurred for honey to be on the shelves in Mutare. Or us as farmers we are considering the cost of producing with a kilogram of honey, considering the cost of hive, harvesting cost and labour. If ZFDT comes here they also justify its prices, against your price. The big problem which we have got is one party is considering the macro-economic environment such as prices of food stuff in Harare and in the country, while the other party is considering the micro-economic environment of the retail price of 2kg sugar in Chapanduka.</p> <p>#821: The problem I have is that the price of sugar seems to have been gazetted (by farmers) but that is not it. It's only that farmers feel that they must buy sugar after selling honey; it does not mean it was the gazetted price.</p>
Co-creating	<p>#846: If we are using price of sugar it is bad because it fluctuates and it depends on the quantities you would want to buy. We need to agree on a pricing system that is fair and does not use the retail price of sugar which is obviously different in shops. We need to negotiate for a price. Sometimes the price of sugar will be USD5 and you will drive away buyers.</p> <p>#849: Therefore what is the price determinant?</p> <p>#847: And at USD 5 you won't have buyers.</p> <p>#848: You therefore need to consider what makes our business survive so as theirs, however we need to negotiate. You can't run a business by saying "I want to buy a cow based on the price of a plough" [pricing is not based on price of other unrelated items].</p> <p>#853: Let's agree on input cost incurred by farmers during beekeeping.</p> <p>#858: I am giving Agritex and farmers some work, Agritex and farmers need to come up with a cost of producing one kilogram of comb honey in Chapanduka. You therefore produce a cost sheet in order for farmers to determine price and ZFDT will come up with a cost sheet in order for you to meet and negotiate with facts and figure.</p>

## Appendix 10: Consent letters

RHODES UNIVERSITY ENVIRONMENTAL EDUCATION AND SUSTAINABILITY UNIT

Rhodes University Department of Education, PO Box 94, Grahamstown, 6140

Tel: +27 (0) 46 603 8389 • Fax: +27 (0) 86 515 2787 •

9 September 2009

To whom it may concern

### Request for permission to conduct research

Mr Christopher Masara (student number 09M3432) is a Masters student registered at Rhodes University in the Environmental Education and Sustainability Unit in the Education department. Mr Masara's research is focussing on the how rural communities are learning to commercialise natural resources products. At present he is gathering contextual (historical, social, economic etc) information in this regard, and we request that you grant him access to both documents as well as people that he can interview. Should you grant Mr Masara permission to conduct research in your organisation, he will negotiate with you who he can speak to, what documents he can examine, and all the ethical and other considerations that may be deemed necessary.

Should you have any queries relating to this, please contact me at [h.lotz@ru.ac.za](mailto:h.lotz@ru.ac.za) on +27 (0) 46 603 8389 or +27-83-2704438

Sincerely



Professor Heila Lotz-Sisitka  
Murray and Roberts Chair of Environmental Education and Sustainability

Rhodes University Department of Education,  
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The Director,  
Zimbabwe Farmers Development Trust,  
Head Office  
Eastlea  
Harare  
Zimbabwe.

Dear Sir,

**Re: Permission to engage your organisation for Master of Education in Environmental Science.**

I write to your office seeking authority to involve your organisation and participating communities in my research towards the Master of Education degree (Environmental Education).

I am currently undertaking studies at Rhodes University in South Africa. In my research I will be looking at the topic; **“How and why community members learnt to commercialise natural resources products?”** And I strongly think your organisation is working in that area. In carrying out my research I wish to use some of your organisational documents and involve staff members and the communities which you are working with through interviews and discussions. It is my hope and wish that the outcome of the research will contribute to the performance of your work.

The information obtained in this study shall be used with full recognition of ethical issues to ensure no harm to any of the persons and organisations to be involved, and individual permission shall be sought.

I thank you in anticipation.

Yours faithfully

Christopher Masara

## **Appendix 11: CD-ROM**