

**MOVING BEYOND SUBSISTENCE: SYSTEMIC INTEGRITY IN
COMMERCIALISING HOMESTEAD AGRICULTURE, WITH THE
EZEMVELO FARMERS ORGANISATION, KWAZULU-NATAL**

A thesis
submitted in fulfilment of the requirements for the degree of
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ABSTRACT

The transformation of South Africa's rural communal spaces into an economically viable, socially stable and harmonious sector is currently on the political agenda, the efforts of the public sector to achieve this however have fallen far short of the intended goal leaving subsistence and emerging farmers with little or no support. A current decline in agricultural activity in South Africa's rural areas threatens to weaken even further the strength of rural economies. Calls for the return of 'peasant' agriculture to the political and academic agendas and a clarion call for South African farmers to re-write their history lie within the problem of sustaining humanity with the economic, social, environmental and temporal dimensions as a driver for development. This thesis interprets the activities and behaviours that defined the innovative response of small-scale commercial farmers in KwaZulu-Natal who role model 'farming' as a 'way of life' in communal land spaces.

The focus of the research was to interpret a useful meaning in the re-negotiation of power relationships between producers and their market. It conceptualised the process of individuals who had determined, and continue to define, their future. The events observed over the three years of field work, offered the possibility of generating an emergent solution to re-inventing farming as a way of life as season by season, decisions were made at the individual homestead level, collectively at community level and between internal and external decision-makers for market oriented agriculture as an additional farming strategy.

A constructivist epistemology, relying on a pragmatic approach to using grounded theory methods within a participatory process, constituted the study design. The research focussed only on emic issues as the 'culture' or social and material priorities of the agronomic system in transition. For this reason, sensitising concepts were drawn from within the context to limit the scope and analysis of the study. Following the field work and write up, the literature of agrarian change was used to locate the study and consider the practical contribution of the study.

This research identified that 'successful' commercial homestead agriculture was the result of changes in mind-set that allowed for new norms and behaviours for farming

practice and for relationships. These shifts provided leverage points for overcoming resistance between producers and markets in accommodating a sustainable market-oriented agronomy. Influencing the change was the impact of informed decision-making, which brought the stakeholders together through the sharing of values and beliefs. Success was interpreted as using the market-orientated production of *amadumbe* to tap into the factors that sustained and created social cohesion, as well as those that stimulated agricultural activity. This emphasis encouraged the capacity for development and cultivation of sustainability. The research proposes that deliberate interdependence between producers and markets creates the incentive for development that is self-determining, sustainable and derives economic benefits from agricultural activity.

This research contributes towards understanding how to re-define commercialisation as an inherent characteristic of traditional agricultural practice and, within this, a meaningful description for stakeholders of the social impact of a deliberate and mutually determined reconstruction of livelihood reality through a farmer-market-researcher relationship. The research introduces the need for a new way of engaging over agriculture in communal spaces; how Discourse is defined and managed; for whom the results of evaluation and monitoring are aimed; and to whom the results of research belong. The research raises consciousness of the need for a space within which dialogue and support for sustaining social agriculture and the role that research institutions could play.

The product of this research is a theory whose core variable defines successful commercial homestead agriculture as a dimension of systemic integrity between internal and external economic interactions. Systemic integrity has been defined as the process by which commercialisation of traditional agriculture has been demonstrated through tapping into the motivations that stimulate agricultural activity and nurturing social cohesion as the framework for legitimate development partnerships. The findings contribute to the discussion of how to unlock the technological and productive potential of rural communities within the images of supportiveness, solidarity, and communalism that produce food for the survival of humanity in a contemporary and dynamic world.

DECLARATION

I, Karen Fern Caister, declare that:

The research reported in this thesis, except otherwise indicated, is my original research.

This thesis has not been submitted for any degree or examination at any other university.

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Signed: Prof. JM Green _____ Date _____

Supervisor (writing up)

Signed: Prof. AT Modi _____ Date _____

Supervisor (field work)

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Woolworths needs to be acknowledged for its innovative response to corporate social responsibility and how this led to a willingness to engage with the EFO as if people and not just *amadumbe* mattered.

SANPAD contributed to this research through the funding of the SANPAD Participatory Project focussing on the commercialisation of homestead *amadumbe* production. They also provided a year-long training programme for building research capacity in the social sciences known as the SANPAD Research Capacity Initiative. The contribution of this programme to me as a competent researcher and academic and to others, as I pass on what I have learned, will continue for many years.

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ACRONYMS AND ABBREVIATIONS

ARC	Agricultural Research Council (ARC). Established in 1990 through the Agricultural Research Act, 1990 (Act no. 86 of 1990). The ARC is the principal agricultural research institution in South Africa. The primary mandate of the ARC is to promote agriculture and industry, to contribute to a better quality of life; and to facilitate and ensure resource conservation.
CDR	Complex, diverse and risk-prone agriculture. A term introduced in Farmer First (Chambers <i>et al.</i> , 1989, p xvi) describing agriculture that is remote, rain fed, and typical of sub-Saharan Africa.
CEO	Chief Executive Officer
DAFF	South African Department of Agriculture, Forestry and Fisheries
EFO	Ezemvelo Farmers Organisation
FAO	Food and Agriculture Organisation of the United Nations
FN	Refers to field note and is presented with a date using day/month/year. For example: FN020707 represents field notes for 2 July 2007
GT	Grounded Theory
HSRC	Human Sciences Research Council
ISRDS	South African Integrated and Sustainable Rural Development Strategy
KZN	KwaZulu-Natal
RCI	Research Capacity Initiative
SANPAD	South Africa Netherlands Partnership for Alternative Development
UNDP	United Nations Development Programme
UKZN	University of KwaZulu-Natal

DEFINITIONS

Land Issues

'communal land' means land contemplated in section 2 which is, or is to be, occupied or used by members of a community, subject to the rules or custom of that community; COMMUNAL LAND RIGHTS ACT 11 OF 2004.

'community' means a group of persons whose rights to land are derived from shared rules determining access to land held in common by such group; COMMUNAL LAND RIGHTS ACT 11 OF 2004.

Customary Land Tenure System Customary land tenure system is governed by unwritten traditional rules and administered by traditional authorities. Active occupation or usage of a piece of land is the main evidence of ownership or an existing interest on the land. In customary tenure, access to land is contingent upon tribal or community membership controlled by the chief. Households have strong, exclusive residential rights, seasonally exclusive rights to arable land and shared rights to grazing land and natural resources.

Land is not alienable from the community trust, so it cannot be used as collateral for loans. Usually, however, an individual's land use rights are secure, subject to certain conditions, which include that the land be more or less continuously cultivated, subject to periodic fallow (United Nations 2003, p2).

Former homeland area As a result of the 1913 Land Act, black people were systematically excluded from residing in areas preferred by whites and denied access to land except in areas known as Native Locations. Under apartheid rule, the movement of black people became even more restrictive and the Native Reserves were formulated as regulated areas governed by an apartheid government approved Chieftaincy. These areas, known as Bantustans and later Homelands, were designated as the home area for each of the black language groups found in South Africa. The apartheid government considered residents in these areas as homeland citizens, effectively excluding them from the social and economic growth of the rest of the country, by the strict regulation of homeland citizens into apartheid controlled space. In essence, homelands were perceived by the growing South African economy as a labour pool for the country's commercial activity. See also Section 2.5 of Chapter 2 and Figure 2.9.

Statutory Land Tenure Statutory tenure system is often built on freehold or leasehold entitlements to the land and offers exclusive rights to the owner, which guarantee land tenure security. Land rights in freehold include the ability to sell the land, rent it to others and to use it as collateral for a mortgage (United Nations 2003, p2)

Human Issues

- Agency** In the context of this research, the understanding of agency refers to the persons capability to act in the world and the reflexive ability of that individual to build a relationship through their own individual capacity and the social structures within which they find themselves.
- Human Security** Human insecurity is reflected by economic vulnerability and alienation of unemployed people. Human development is “expansion with equity”(UNDP 2009, p.2), referring to expanding an individual’s capabilities and opportunities. Human security is “downturn with security”, a result of enabling people to contain or avert threats to their lives, livelihoods and human dignity. Human security is defined as: “The liberation of human beings from those intense, extensive, prolonged, and comprehensive threats to which their lives and freedom are vulnerable”(UNDP 2009, p.2).
- Radical democracy** Radical democracy is perhaps a contested topic, but within the context of this research, it is used by the researcher as an assumption about the behaviour of people who are agents for transformation in their societies. The farmers of the EFO for the most part exhibit an understanding of farming as a way of life within contemporary society. They have considered the validity of it, challenged their own understanding and practice and found it in need of transformation. They have exhibited the ability to formulate their own independent analysis of the world, their own position in it and have set about to do something to preserve this. This is radical democracy- a dynamic, on-going responsibility to make the world a better place.

Agricultural terms

- Green Revolution** The green revolution refers to the process of a technological emphasis on improving yields and production efficiency. It relied on the use of high yielding hybrid seeds, chemical fertilizers, irrigation, pesticides and herbicides.
- Landrace cultivars** Landrace is a term generally understood as traditional planting material and represents the germoplasm which has adapted to a particular region, its growing rhythms and conditions. It continues its adaptation as successive generations of farmers select healthy material from one season for planting in the next.
- Complex, diverse and risk-prone agriculture (CDR)** A term introduced in Farmer First (Chambers *et al.*, 1989, p xvi) describing agriculture that is remote, rain fed, and typical of sub-Saharan Africa.

Research terms

- Emic** In anthropological discourse, there are two views with which one studies a cultural system. The emic view which is an insider point

of view and the etic, which is the outsider's point of view.

Ethnographic enquiry	Ethnographic enquiry seeks to describe a particular culture. It seeks to learn from people and is a useful tool for understanding how a particular group sees their own experience.
Multi-disciplinary research	When experts from different fields work together on a common subject, within the boundaries of their own discipline, they are said to adopt a multidisciplinary approach. However, if they stick to these boundaries they may reach a point where the project cannot progress any further. They will then have to bring themselves to the fringes of their own fields to form new concepts and ideas and create a whole new, interdisciplinary field. A transdisciplinary team is an interdisciplinary team whose members have developed sufficient trust and mutual confidence to transcend disciplinary boundaries and adopt a more holistic approach.
NVIVO	NVIVO is a qualitative data analysis (QDA) computer software package produced by QSR International. It has been designed for qualitative researchers working with very rich text-based and/or multimedia information, where deep levels of analysis on small or large volumes of data are required. It is used to organize and analyse unstructured information in material like documents, pictures, audio, video, spread sheets and database tables (Source: http://www.qsrinternational.com/about-qsr.aspx).
Participatory research	Participatory research focuses on a process of sequential reflection and action, carried out with and by local people, rather than on them. Local knowledge and perspectives are not only acknowledged but form the basis for research and planning (Cornwall & and Jewkes 1995).
Science	The term 'science' is used in this report to represent the organized body of knowledge obtained through systematic methods for observation and experimentation.
Trans-disciplinary research	Transdisciplinarity is possible when researchers are able to interact in open discussion and dialogue that gives equal weight to the multiple perspectives brought to the solving of problems. This is difficult because of the overwhelming amount of information involved and because of incommensurability of specialized languages in each field of expertise. To excel under these conditions, scientists need an in-depth knowledge and know-how of the disciplines involved, as well as skills in moderation, mediation, association and transfer.
	Transdisciplinary research requires the development of transdisciplinary personalities: the capacity to engage in

meaningful dialogue, embeddedness of one's own discipline, a societal conscience, the ability to think in an complex interlinked manner, modest positionality (Jacobs I.M. and Nienaber S. Waters without borders: trans-boundary water governance and the role of the 'transdisciplinary individual' in southern Africa available from Author: IJacobs@csir.co.za).

1. ACHIEVING ECONOMIC BENEFITS FROM TRADITIONAL FARMING AS A WAY OF LIFE

1.1 Introduction

Between 2005 and 2009 a group of student researchers took part in a participatory development project led by Prof. Albert Modi from the University of KwaZulu Natal (UKZN). The project was funded by the South Africa Netherlands Partnership for Alternative Development (SANPAD). Through this project, post-graduate students from UKZN were able to align their individual research projects with the knowledge priorities of farmers. These farming priorities focussed on the use of local knowledge and resources to transform homestead food production towards a sustainable market-oriented production of organically certified indigenous vegetables.

Individual commercial farming homesteads were represented through a formalised community structure known as the Ezemvelo Farmers Organisation (EFO). In 2002, the EFO farmers had prioritised the production of *amadumbe*¹ as an exclusive commercial crop for Woolworths South Africa. Woolworths located the market potential for *amadumbe* in a “Traditional Indigenous Vegetable” niche. The “Organic Certification” added a means for attracting a higher consumer value that benefited farmers and Woolworths. Locally adapted (land race) cultivars² of *amadumbe* are grown in rain-fed fields accessed by individual EFO members. During the harvesting season *amadumbe* are harvested at weekly intervals, co-ordinated at convenient (for the farmers) collection points and transported³ to a privately owned packhouse 30 km away for cleaning, quality control and final packaging before distribution to Woolworths’ nationwide food market retail points. The growers (EFO farmers), processor (Farmwise Pack House) and the market channel (Woolworths) constitute an agrifood chain with the specific function of providing organically certified *amadumbe* for the traditional vegetable market niche. The commitment by the components of this value chain to work through challenges, made it possible for multiple homesteads to collectively supply viable quantities of *amadumbe* to south African consumers. The Farmwise packhouse was critical in this link in that it served as a means of information and feedback to the growers

¹*Amadumbe* is the isiZulu word for taro root or rhizome of *Colocasia esculenta* a starchy staple eaten throughout rural KZN.

² ‘Dumbe-dumbe’ (popular cultivated type), ‘Mgingqeni’ (unpopular cultivated type), ‘Pitshi’ (antiquated cultivated type), ‘Pitshi omhlophe’ (antiquated cultivated Pitshi ecotype) and ‘Dumbe lomfula’ (wild, but edible, riverine type) (Mare 2009).

³ Transporting to the market was always a challenge. During the time I observed and participated, transport arrangements ranged from hiring small pickup trucks (‘bakkies’) to the eventual purchase of a small lorry by the EFO towards the end of 2009. The cost of transport was a variable cost for farmers.

with respect to Woolworths' specific standards and manages the presentation and quality of produce on behalf of Woolworths for regional and national distribution. In addition, Farmwise had committed itself to building local human capacity by employing a representative from the EFO in a trainee management position in the packhouse.

In the present research, a nondirective learning, loosely connected to the SANPAD Participatory Project, was used to develop a Grounded Theory (GT) for the 'successful' commercialisation of traditional agriculture, where the project participants defined success. The role of observing the phenomenon of commercialising traditional agriculture from a social perspective emerged from farmer-researcher dialogue, as together they identified a joint research agenda.

It is important at this moment that I tell you that our organisation has a motto, Sifundela ukwenza; senzela ukuphila (Learning to do; doing to live). To live up to the motto, this year [2006] we embarked on a participatory research with the University of KZN. We, EFO members, at a workshop held early in the year with Professor Modi⁴ and his students, identified the objectives of the research. The aim of the research is to show that homestead farming can be a successful model for rural agricultural development....(Extracted from address by the chairman of Ezemvelo Farmers Organization, Mr. D Miya, 2006 Annual General Meeting).

1.2 The research problem in context

Historical exclusion

Historically, South Africa has developed a dual agricultural landscape. For white farmers, agricultural training and knowledge transfer through government technical assistance has been the core of large-scale, mechanised commercial agriculture. Black farmers were given extension through the former homelands, but were effectively excluded from the mainstream markets and had limited access to the factors of production needed for commercial agriculture, most notably sufficient land and mechanical technology (South African History Online 2010).

The process of commercialisation represented in this research, is embedded in the experience of small-scale traditional farmers who have historically been excluded from the mainstream

⁴ The project leader is deliberately referred to as Modi throughout this text when the conversation described arises from within the context. The reason for this is that he is called 'Modi' by the community. Its use reflects the importance of *relationship* in the project's process and success. In other formal references such as this formal report, Modi is referred to as Professor Modi, which reflects his academic role and status in the environment and relationships external to the farming community.

agricultural economy, as just described. This type of agriculture is referred to in the literature as complex, diverse and risk-prone (CDR) (Chambers *et al.*, 1989). Because of its low inputs, and practice of successful crop production without the use of chemicals, the actual technology is very close to organic farming methods that work with nature to maximise production and sustainability. In addition, the production of *amadumbe* for the market is also one strategy amongst multiple strategies used to secure livelihoods by the homesteads participating in the EFO.

Communalism and complexity

The farmers themselves are the members of the community co-operative structure known as the Ezemvelo Farmers Organisation (EFO), located in Umbumbulu, a rural sub-region of KZN. In this area, land is accessed and managed through traditional political structures. In South Africa, land not individually owned under statutory law and which belongs to or is occupied by indigenous people groups is commonly referred to as communal land or traditional land. Communal land tenure⁵ historically meant that land use was prioritised and allocated through traditional political structures on the basis of agricultural activity and for a household's wellbeing. This is still a widespread form of land use in communally owned areas (Cousins & Mhweli 2007)

Historically, agricultural activity has provided food and contributed to the social structures that secure order and cohesiveness amongst the Zulu peoples (Whitelaw 2008; Cousins & Mhweli 2007; Dlamini & Filter 1986). Nevertheless, farming is hard work and the parents who farm using traditional systems face the knowledge that, for the most part, their children do not see traditional farming as a desirable future or way of life. The problem, in the words of two fathers, both EFO farmers, is that:

“We need to be successful at farming, so that our children will respect it and be encouraged to continue farming as a way of living” (uBaba Miya)⁶.

“My children will do what they plan to do, but I would like to inspire my children and leave them the land⁷ as my legacy” (uBaba Mbili)

⁵ See Definitions.

⁶ Baba means ‘father, mister, sir’. It is a social norm for younger persons to refer to socially senior or older males as uBaba.

⁷ Within the context of this conversation the researcher understood the reference to “the land” referring to more than just a physical space that included valuing the fertility and productive use of the land as a focus and a practice. Mr Mbili is a thorough, highly skilled and knowledgeable conservation farmer.

Echoing this sentiment is a review of trends in South Africa's rural economy by the Human Sciences Research Council (HSRC) (Aliber 2006). Research conducted by the HSRC in Limpopo and KZN provinces of South Africa suggested that a decline in small-scale and subsistence farmers relying on agricultural activity for their main source of food and/or income would complicate the uncertainty of economic survival in former homeland areas (Aliber 2006). The report does not communicate how accurate this perceived reduction in agriculture activity is, nor what impacts this trend will have on South Africa's agricultural economy. However, the HSRC review warned that in South Africa, the strength of rural economies might be reliant on agricultural activity.

The current South African national agenda for rural development intends to rebuild the agriculture sector through the Integrated and Sustainable Rural Development Strategy (ISRDS). The strategy aims to "transform rural South Africa into an economically viable, socially stable and harmonious sector" (NDA 2001). The role of agriculture in this vision is for "equitable access and participation in a globally competitive, profitable and sustainable agricultural sector that contributes to a better life for all" (NDA 2001). The intention is to encourage innovation in the use of technology and information to establish sustainable agriculture in the mainstream economy (NDA 2001).

One impediment to progress has been the failure by post-apartheid (1994-present) government structures to deliver and implement regulations, programmes and support systems critical for redress and enabling sustainable rural development (NDA 2001). The main impediment for this transformation is the vast "untapped potential that lies in its people and material resources, and the low profitability and competitiveness that constrain the participation of a full spectrum of people and economic entities" (NDA 2001).

1.2.1 A utilitarian research response?

Just as policy has shifted to include the potential of people as an integral part of agricultural processes, agricultural scientists are similarly challenged. The global development discourse has evolved philosophically, theoretically and even practically through emancipatory engagement with communities over several decades (Kalb *et al.*, 2004). Emerging from this journey is the growing acceptance of trans-disciplinary⁸ science. Funding support for multi-

⁸Trans-disciplinary research transgresses disciplinary paradigms, focusing on a heterogeneous domain rather than a discipline and produces three types of knowledge: systems knowledge, target knowledge and transformation knowledge (Hirsch-Hadorn *et al.*, 2008, p19; Gayraud 2005).

disciplinary⁹ and participatory¹⁰ research agendas has encouraged agronomists to embrace these developmental concerns and to develop research strategies and perspectives that include the issues of authority, power and difference¹¹ found in small-scale commercialisation of traditional agricultural practices in rural areas. Scientists are being challenged to re-consider that their role in technology development is through innovation and a complex process involving a reorganization of social relationships, not just technical practice (Jansen 2004; Selener 1997). The reasons for this are explained below.

1.2.2 Relevant to sustainable agriculture

During the Green Revolution, agricultural productivity was encouraged through policy and systems support, which facilitated the transfer of relevant farming technologies from experimental laboratories to the field (FAO 1995). A counter-movement to the Green Revolution surfaced in the late 1980s. It reasoned that neither the approach nor the methods of technology transfer fit the complexity and risk involved in resource-poor farming (CDR) (Chambers et al., 1989). This movement urged research and extension to place farmer participation as the focus for practice in serving resource-poor farm families (Scoones & Thompson, 1994) and for innovation that drew on an integration of the information supplied through the interaction of stakeholders such as farmers, extensionists, researchers, NGO's, policy makers, and distribution oriented role players (Groot & Röling 1998). The development discourse around agricultural systems agreed that the real world situation for emerging small-scale agriculture was far too complex to be explained simply through a singular focus on farming technologies or market realities or even economic or environmental strategies for sustainability. It required a response that started with what farmers had and built on what they knew (Whiteside 1998; Pretty 1995; Burkey 1993). What followed was a decade of exploration into appropriate paths to agricultural development, utilizing farming systems that increased awareness of the farm-household and the central role the farmer plays in adoption of appropriate technologies and agricultural development paths (FAO 1995).

Any description of agricultural practice is inherently about the use of land to produce food, fibre, or fuel. Traditional farming communities have developed their own technologies and

⁹Researchers from different disciplines or backgrounds coming together to collaborate on a common goal (Hirsch-Hadorn *et al.*, 2008, p19; Gayraud 2005).

¹⁰Participatory research is informed by and responds to the people involved. It is concerned with knowledge as power, and learning is a central part of the research process (Sohng 2005).

¹¹ What the author means by 'difference' here is the characteristics of the EFO farmers understanding of their transforming agriculture as a rational knowledge product rooted in their values and beliefs.

explanations for cause and effect in response to their experiences of production of these, within their specific contexts (Whiteside 1998, p39; Mapadimeng 2005, pp3-4). Stevens and Treurnicht (2001) suggest that culture is crucial to agricultural development, because culture conveys important information and knowledge used by society in adapting to its environment. The knowledge that we need in developing agriculture-based communities is not a new theory vying for centre stage such as “organic farming”, “sustainability” or “commercialisation”, but a way in which to manage the relationship between technical knowledge and the way in which societies arrange their worlds. We (scientists) can reflect and the farmer can reflect on his/her reality as knowledge but, for both of us, we have to find a way to overcome the potential fallibility of that knowledge in a changing world. The knowledge we need then is the blending of science with local decision-making processes that facilitate flexibility and options for how farmers manage the relationship between cultural knowledge and technical practice.

1.2.3 Relevant to development for South Africa

In South Africa, the focus on agricultural development is specifically drawn to the complexity of blending Western and African thought. Two differences of approach to technology in this context are that ‘Western’ implies science as the rationality of empirically based cause and effect and ‘African’ implies a rationality of ‘agentative causation’¹² resolving practical problems for survival (Mapadimeng 2001, p4). Furthermore, the motivation for economic development of the Western concept values individualism and profit, whereas in African culture, prestige is more important as it combats the fear of community rejection and disapproval (Murove 2008, p90). Stevens and Treurnicht (2001) propose that ‘culture’, defined as the sum total of the original solutions that people invent to adapt to change, is a crucial and underutilised resource for mobilising knowledge systems in the search for sustainable agricultural development. Mapadimeng (2001, pp12-13), drawing on the philosophical explorations of Weiredu, Gyeke and others, re-affirms that technology is a cultural product, the benefits of which are enhanced when it arises from “the participation of recipients in the innovative integration of technologies to realise their specific needs”. He argues that to unlock the scientific and technological potential of African cultures, there is the need to change the focus of indigenous technology from practical problems of survival to an attitude towards ‘knowledge’ (p13) ‘for its own sake’ (p2) within the defining principles of Ubuntu/Botho (Mapadimeng 2001, p2-13). Stevens and Treurnicht (2001, p111) describe

¹² Gyeke, editor of the book *Postcolonial African Philosophy-A critical reader*, suggests that the African notion of causality focuses on spirits or mystical powers as causal factors (Mapadimeng 2001, p2).

these principles as images of supportiveness, co-operation and solidarity in the form of communalism rather than individualism. Traditional agriculture in South Africa is a part of a culture that historically shares the African notion of Ubuntu – where one’s humanity (or personal development) is fully realized when expressed as socially responsible decisions and actions in submission to the community as the dominant entity of social order (Lassiter 2008, p4-5.).

A critical question that remains for researchers engaging with transformation is how to bring together a) the improvement of technology with b) research processes that release the social and economic potential of rural homesteads that are complex combinations of social, economic and moral religious elements (McAllister 2001). That scientists are still asking ‘how’ suggests that a contributing factor to failed transfer of technology might be that agricultural scientists and society perceive uncertainty from very different perspectives. The scientist relies on scientific uncertainty as a natural outcome of progressive science. Research begins with a problem demanding an answer (Welman 2005, pp5-10; Leedy & Ormrod 2001, pp3-10). Each progressive step in the scientific method resolves one question using a framework that recognizes valid features from the current perspective or theory and incorporates the new evidence. Unaccounted for uncertainties are simply posed as new research questions to investigate. Society, on the other hand, perceives uncertainty as threatening because it cannot be resolved and may possibly spin out of control (Nowotny *et al.*, 2001). The individual has to live with these consequences, whereas scientists just absorb them into their research agendas (Nowotny *et al.*, 2001). Within the context of this study, the farmers of the EFO express this tension quite well:

“We wish to co-operate with the South African Department of Agriculture at all levels and any other institution or persons in sustainable, productive, stable and equitable agriculture...to commercialise our produce in a manner that improves our economic development without compromising our cultural integrity”
(extracted from The Constitution of the Ezemvelo Farmers Organisation 2001).

Until the researcher makes the philosophical shift towards farmer responses as rational responses to the complexities of homesteading and commercial agriculture from the farmer’s own world view, research continues to deal with knowledge as a ‘thing’ to be ‘applied’, whereas the development need is for narrowing gaps in knowledge. The gap itself is the cause of the discrepancy between what people envision as their future and how they are able to achieve this (Meadows 1999, p4). Research, when conducted as part of a development or

empowerment process, has to deal with the production of knowledge that is a product of science engaging with society over uncertainties. In this context, technology shifts from something to be applied to something leveraged for networking and organizing. How this is done is a reflection of the way values, attitudes and goals are shared within a particular group. Therefore, when we focus on or include relationships in the development process, we are including culture.

1.2.4 Relevant to preferred livelihoods

In traditional African culture, it is the complex network and maintenance of relationships that creates social cohesion and defines an African way of life (Cousins & Mhweli 2007, p4; Mapadimeng 2005; Stevens & Treurnicht 2001). In the search for an African solution to economic development in a post-colonial agronomy we have to consider the importance of relationships, not only in terms of the way in which internal relationships are maintained, but also in dealing with the uncertainties generated by linkages external to the household livelihood system. In the process of establishing structures which would enable traditional farming to continue as a 'way of life' and contribute to sustainable development amongst resource-poor farmers, we also have to create the capacity to co-operate with markets in a way that allows for the possibility of prosperous¹³ social and economic change. South Africa's stated political goal is 'economically viable and socially cohesive rural economies'. Research that is able to make explicit the indigenous wisdom and contribution to solutions in this process is in a position to inform agrarian policy and services for supporting preferred livelihoods.

The research reported on in this study looks at commercialisation as a phenomenon. Therefore it is not the measurement of reality, but is an interpretation of the nature of the process by which the farmers of the EFO adapted their social agronomy towards production beyond subsistence. This commercialisation process is the lived experience of the EFO farmers and their elected 'gate-keeper' as they built links to an external market for their produce. Long-term stakeholders that have defined the market are Woolworths and the Farmwise Pack House. Successions of research students under the careful supervision of

¹³“The unique contribution of sustainable development is that it moves beyond economic indicators as the sole barometer of a nation's well-being. It considers environmental, social and cultural domains as equally important factors in the societal equation. The community's agenda focuses primarily upon the social and economic dimensions of sustainable development... It is concerned with clean air and water, nutritious food and decent shelter, good health and safe neighbourhoods, stable roots, and strong sense of self and belonging...”(Torjman 2006, p4)

Prof. Albert Modi from the University of KZN have contributed to the translation of knowledge for improved agriculture through individual research projects. Recommendations from these are built into stakeholder actions and help define new research problems. Although this is not their story, all of the above-mentioned players are important to the unfolding of events. And so it is important to understand that they are actors in a greater narrative than the one told in this research, a story which has a beginning and no end because...well, because it continues.

1.2.5 Relevant to academic discourse

In the past 25 years, social science enquiry has re-formed and transformed from a quantitative and objective practice, to enquiry that is interpretive, critical, moral and political (Denzin & Lincoln 2005, ppix-x). The blurring of the lines between disciplines and the use of multiple paradigms has generated a research environment that is able to show how the practices of qualitative research can help change the world in positive ways (Denzin & Lincoln 2005, px). This has come about through the rejection of the notion that research is deficient if it is not theory driven, hypothesis testing or generalisation producing (Peshkin 1993). As a result, society has increasingly demanded that science become more socially responsive, requiring research in more complex and uncontrollable contexts, with a focus on problem-solving. Criticism of the positivist and post-positivist stances defines them as unable to include this need for voice, empowerment and praxis (Denzin & Lincoln 2005 p184).

Researching CDR has not been popular amongst production scientists whose traditions for good research demand reliable access to materials, controllable conditions and the assurance that experiments will generate publishable research (Mudgal 2006, p72 citing Gupta 1987). If scientists have data, they can estimate probabilities for development and estimate the likely costs and benefits in production systems.

For farmers, the risks involved in changing their way of production without adequate information becomes uncertainty (Horner-Dixon 2011, p6). When dealing with uncertainty from a research perspective, transformational knowledge is central and the consciousness of this arises from participatory processes that build capacity as participants reflect on reality (Guba & Lincoln 1990). When trying to understand small-scale agriculture as a commercial option for development within communally managed rural areas, this challenge become immediate and obvious as we address the question of 'what are we becoming'? 'Becoming' requires transformed thinking, a coming together of science and culture. The crux of the challenge for researching CDR is that the focus of productive agriculture needs to include

applied production science supported by research and production experts and an agriculturally based ‘way of life’ embedded in a particular region, culture and geography.

In complex agrarian communities, opportunity for development through market-oriented agriculture requires the inclusion of the science of agriculture to achieve economic benefits within a range of other livelihood strategies and priorities. People may be seeking economic benefit (and in this research they were), but ultimately the research challenge lies in understanding how to support lives that rural people value – in this case traditional farmers aspiring towards commercial production. Therefore, we see that a new mind-set in agricultural support and services is required. This way of thinking seeks to recognise opportunities for development, exploring existing knowledge and resources as foundations for innovative participation in economic activity. It is a way of thinking that cuts across the boundaries of society bounded by functional interdependence and relationships with production science founded on measurable cause and effect.

1.3 Identification and purpose of the study

The problem expressed by farmers of the EFO was how to encourage farming as a continued ‘way of life’. They had begun to address their own problem through their move towards commercial agriculture as an economic strategy. The SANPAD Participatory Project (2006-2009) provided opportunities for participatory knowledge creation and actor learning in the movement towards commercialisation. In this study, this commercialisation process is treated as a phenomenon¹⁴. In support of this movement, the question of this research was to interpret how the farmers of the EFO were able to move towards market-orientated agriculture from within their traditions of agricultural practice.

The learning focus for this research was ethnographic in nature, in that it explored the ‘culture’ or social processes of the agronomic system in transition and focused on emic¹⁵ issues. This should not be confused with studies that analyse a linear path moving from traditional to modern, but as a study of the decision making occurring from deliberate decision making on the part of the EFO farmers from homestead production to a market oriented production. The inquiry used constructive GT ethnography as the research process

¹⁴ Using the interpretation of phenomenon as an experience that can be observed, appraised and sensed, it is the researcher’s interpretation of reality rather than the reality itself. In other words, data is important as evidence of the phenomenon but it is the phenomenon that is explained, not the data (Haig 1995).

¹⁵ This focuses on describing the phenomenon from an internal perspective rather than from an existing external scheme (i.e. capitalism or large-scale commercial agriculture). It also locates the researcher’s perspective as someone who has participated in the process – even though GT itself is not necessarily a ‘participatory’ process.

for sampling, collecting information and analysis (Charmaz 2006). Although what this means will be discussed and defended in Chapter 4, a key objective in GT is ‘emergence’ from within the context. It also meant that it was the farmers’ decisions and actions which were observed and interpreted, not the researchers or other stakeholders involved in the commercialisation of *amadumbe*. The research question itself emerges from the context and its resolution lies in the synthesis of a conceptual core that is eventually identified as the core conceptual variable. Theoretical concepts abstracted from the data have been arranged in relationship to the core variable to render a substantive theory.

The primary goal of the research itself contributes towards understanding how to re-define commercialisation as an inherent¹⁶ characteristic of traditional agricultural practice, and within this, a meaningful description of a deliberate and mutually determined reconstruction of livelihood reality through the market-researcher-farmer relationship. The reconstruction of the livelihood realities involved learning how to work with existing knowledge and relationships in order to exclude, include, or replace local knowledge or scientific knowledge in a way that was most practical or true in achieving commercialisation.

Therefore the emergent theory for the phenomenon is a result of the study and explains the data rather than the initial scope of the study. The methodology and analysis unfolds as the researcher engages and reflects in an iterative relationship linking what is already known with empirical information from the field. With this in mind, the reporting and reading of this research must be read in its unfolding entirety to understand the whole. But let us begin at the beginning!

1.3.1 An emergent research topic

In 2006, a participatory workshop facilitated by researchers with farmers of the Ezemvelo Farmers Organisation in Umbumbulu, a rural district of KZN, delivered the foundations for a shared (farmer-researcher) agenda for continued transformation and researchable problem-solving within the proposed SANPAD Participatory Project (Caister 2006). During the three months prior to the workshop (held on 25 March 2006), farmers had recorded questions about the problems they were experiencing in the conversion of traditional farming priorities to commercial priorities (Appendix 1-1). During the workshop itself, researchers explored with the farmers the complete collection of questions raised, in order to ensure a mutual understanding of the nature and rationality behind the questions. Together they agreed who

¹⁶ Inherent meaning: built-in, constituted, integral, natural, existing as an essential constituent or characteristic (Oxford Dictionary).

would be responsible for addressing these problems. The researchers took these insights away to reflect on and extract researchable problems within the natural learning process anticipated in the participatory agenda for transformation.

The farmers had already made explicit their intentions for commercialisation in the ‘constitution’ of the organisation (Appendix 1-2). Here they stated a deliberate intention to move beyond what they already knew and to transform traditional agriculture into a practice of market-oriented sustainable agriculture.

Potential researchable problems were discussed by students’ supervisors, identifying individual research projects (across a variety of disciplines) that addressed the farmer’s concerns. A further priority in these discussions was to ensure that current research activity would contribute to the accumulation of knowledge being produced through the collaborative accumulation of prior and current research. Through a comprehensive reflection on the farmers’ agenda, research consultants and students designed multiple individual research projects for students that would contribute to the farmers’ knowledge requirements.

Table 1.1 Objectives of the Ezemvelo Farmers Organisation (extracted from the EFO Constitution, 2001)

Objective A.1. To co-operate with the South African Department of Agriculture, at all levels, and any other institution or persons in sustainable, productive, stable and equitable agriculture
Objective A.2. To practise organic farming, as understood to be: a production system that sustains agricultural production by avoiding or largely excluding synthetic fertilizers and pesticides. Whenever possible, external resources are replaced by internal (solar or wind energy, biological disease and pest control, biologically fixed nitrogen and other nutrients released from organic matter or soil) resources found on or near the farm.
Objective A. 3. To commercialise our produce in a manner that improves our economic development without compromising our cultural integrity.

1.3.2 An emergent research question

This study presents one of those individual research inquiries and was envisioned in the consultations between the EFO and research supervisors and consultants as a way of understanding the social impacts of interaction during the three-year partnership. The research question emerging as the focus for this enquiry was:

How have the farmers of the EFO gone about commercialising traditional subsistence agriculture as an expression of their vision for economic benefits through agriculture as a continued way of life?

In Figure 1.1, Mr Miya shares how the EFO membership expressed the intention of the EFO to explore commercialisation of homestead farming as a contributory economic model for rural development. As decided by the EFO farmers themselves, the role of this study was to contribute to this aim by exploring the impacts of the commercialisation process. The roots of the research question were embedded in their expectations (Figure 1.1).

The breadth of what could have been meant by ‘determine the impact’ caused the researcher a great deal of angst. Multiple questions and layers of complexity within these questions arose as the researcher tried to sort out a focus for her study. Examples of these questions below show the researchers initial response to the farmers’ request.

How did the farmers of the EFO define and practice commercial agriculture?

What did the farmers of the EFO value in their lives?

What does it mean to the farmers to stay in command of their environment - the EFO constitution and the worldview it portrays?

What values, concepts and tensions¹⁷ contributed to effective relationships, or not, between individual farm productivity, community structures and the market?

How was collective learning of the participatory action research helpful in decision-making for market-oriented production?

¹⁷ What market related pressures were there that determined changes in agri-technologies?
What market related pressures for change, relationships and trade-offs were there?
What responses to local co-operative agreements did farmers make in response to market related pressures in making farming decisions for the planting and harvesting of *amadumbe*?
What responses to market-related pressures affected relationships and trade-offs in making farming decisions for the planting and harvesting of *amadumbe*?



“It is important at this moment that I tell you that our organization has a motto: Sifundela ukwenza; Senzela ukuphila (Learning to do; Doing to live). To live up to this motto, this year we embarked on a participatory research with the University of KwaZulu-Natal. We, EFO members, at a workshop held early in the year with Professor Modi and his students, identified the objectives of the research. The aim of the research is to show that homestead farming can be a successful model for rural agricultural development. We already have many experimental trials established everywhere, and from the trials we shall learn about improving soil fertility using earthworms and traditional crops from Mrs. Charity Maphumulo. For the next two years, Mrs Karen Caister will help us to determine the impact of the research on our homesteads, the EFO and the markets...”
(Extracted from Address by the Chairman of the Ezemvelo Farmers Organization, Mr D Miya, 2006 Annual General Meeting).

Figure 1.1 The researcher’s role in the SANPAD Participatory Project, as perceived by the EFO

The repeated refrain of being ‘successful’ gradually shaped the research question. In the EFO Constitution, success was envisioned through shared values and intentions. This refrain was interpreted throughout the scope of farmer interactions: at homestead level, needing to inspire their children with ‘successful’ farming; at collective level, needing to ‘successfully’ engage with the market; at a broader level, desiring to show that commercialising traditional agriculture can lead to rural economic development.

For this study, the underlying theme for investigation became what kind of agricultural development would result in a strengthening of the rural economy in Umbumbulu, KZN? As an appropriate response to the relevancy for sustainable agricultural development and current political and academic discourse, the research inquiry accounts for the way in which a specific group of traditional farmers envisioned commercialisation as possible and then made this vision explicit as they adapted traditional agriculture practices to include the production of *amadumbe* as produce specifically for sale. The analysis results in substantive theory offering an alternative trajectory to the current policy designs for commercial agriculture and reinforcing the need to engage politically and theoretically around the challenges of communal agrarian ways of living.

1.3.3 Study limits

In positivist research, the study needs to be de-limited beforehand in order to control the cause and effect of selected variables on each other (Welman *et al.*, 2005). However, in Grounded Theory (GT), the study begins with an identifiable context, but a scope that is undefined. How the scope is de-limited is the result of progressive crystallisation guiding the response to information available¹⁸. The researcher had no wish to invade farmers' lives to measure personal and private information, which would have demanded more of the busy farmers' time. This would have been exacerbated by the need for translation as she also did not speak Zulu. The structural and functional aspects of rural African agriculture although always interesting, were also not a focus for analysis, because they are familiar and therefore not of analytical interest in the study of commercialisation. However, settling on GT allowed for the interpretation of a phenomenon as an experience that was observed, appraised and sensed - as the researcher's interpretation of reality rather than the reality itself. In other words, data was important as evidence of the phenomenon, but it was the phenomenon itself that was explained not the data (Haig 1995). This fits both the research environment and the needs of the researcher and led to a search for 'sensitizing concepts' to guide the limitation of scope for the study. Limiting the scope as the study progressed was a characteristic of the constructivist approach used in the study - first through sensitizing concepts, identified and described in Chapter 5, and then through the methodology of coding and abstracting concepts described in Chapter 3 and made explicit in Chapters 6 and 7. NVIVO was used to manage the large quantities of Field notes, memos and reflective writing and assist with the initial coding of field notes.

One of the criticisms of GT has been that it has been practised as an objective form of inductive positivism (Bryant & Charmaz 2007). Although the nature of GT is that the researcher is observing through a lens, that interprets data from her own place, space and environment, these biases and views are continually declared as part of the reflexive process of abstracting theoretical concepts from the individual contributors of that information. By embedding the researcher in the project itself, the researcher's process of data construction and interpretation, as well as the framing of accounts, is made transparent. Although the

¹⁸ In retrospect, after completion of the GT and subsequent to locating it within in the context of agrarian change it becomes necessary to state that this research does not address in any way the contested issues of land tenure, Traditional leadership or the classification of farming systems, or causal relations between structure and function that are common ways of conducting rural developmental research. It is not that these are not important, but the theory encompasses the behaviours and attitudes that identify the capacity of the farmers of the EFO to adapt to these pressures as and when they occur.

farmers' actual points of view are used as evidence to build concepts, there is no attempt to represent a detailed, factual measurement of data. Instead, theoretical concepts are abstracted and the relationships between the concepts are interpreted and theorised. By using translations of what people expressed from field notes, these beliefs and values are given voice. At the same time, however, societal outcomes of the commercialisation project are the phenomenon under study and sensitivity to these and accurate representation of farmer attitudes and decision-making are part of an ethical treatment of the study process. The representation of a shared set of values and beliefs is important for optimising future innovation and success.

1.3.4 Study design

The SANPAD Participatory Project was established as a participatory research and learning project which influenced the choice of GT as the most appropriate approach to blending participatory activities with an ethnographic study. Within the participatory paradigm, contexts are designed for engagement that influences the actors and pursues deliberate change (Sohng 2005). Ethnography, on the other hand, usually seeks minimal impact and examines the multiple dimensions within which the phenomenon occurs, to gain an insider perspective (emic view) on what occurs (Pettigrew 2000). The ethnographic emphasis used in this study is different from other ethnographies, in that it moves beyond description of a particular sample, by constructing a conceptual representation of the process being studied.

Grounded Theory seeks to construct a theoretical framework for what is happening within a context (Glaser & Strauss 1967). This inquiry uses GT as a theoretical tap-root to bridge the contrasting goals of ethnographic enquiry embedded in a participatory context (Roncoli 2006, p82). Grounded Theory as a research design was a research approach originally presented by sociologists Glaser and Strauss (1967). Grounded Theory as a method produces a substantive theory by the induction of theoretical concepts within a systematic collection and analysis of data arising from a particular phenomenon (Bowen 2006, p2). What this means in practice is that the reasoning of concept development moves from the specific incident, event, relationship to the weaving of these as the characteristics of a whole concept (Bruce 2007, p52). In this quote from Glaser, the implication is that information is used for discovery.

“All is data” is a well-known Glaser dictum. What does it mean? It means exactly what is going on in the research scene is the data, whatever the source, whether interview, observations, documents, in whatever combination. It is not only what is being told, how it is being told and the

conditions of its being told, but also all the data surrounding what is being told...”(Glaser 2002a, p1).

The constructivist paradigm has adopted GT, as more and more qualitative researchers found it useful in avoiding the controversial conflicts of statistical sampling and inductive theory building in Case Study Research (Andrade 2009, p43) as well as the criticisms of mechanistic manipulation of data implied in the use of GT detailed by Strauss & Corbin (Bryant 2009). Grounded Theory, from the constructive perspective, as defined by Charmaz (2006, pp21-25) is used for both methodology and handling of data in this study bringing with it a pragmatic approach to handling data and use of literature for interpretation.

This occurred through a process of comparing data on hand, reflecting on this and moving towards an understanding that was increasingly more complete. Additional empirical data acquired during repeated visits to key informants and participation in the SANPAD Participatory Project activities was used to inform the existing set of information. All information available was treated as data: existing published results from prior research in the area, SANPAD Participatory Project data, the researcher’s field notes from observations and casual or formal conversations with stakeholders. The underlying meaning or experience relevant to the developing theoretical concepts was drawn as an abstracted version of threads common within a field experience or sequence of experiences. As they emerged from the data during analysis, these threads were interpreted as meaningful emic issues. Essentially, four stages of analysis were used: coding, which identified anchors for key points in the data to be gathered; building of concepts through collections of coded information; developing categories that grouped concepts as theoretical interpretations; and finally, a theory presented as a collection of propositions that explained the characteristics and relationships of a core emergent concept (Glaser & Strauss 1967).

Because of the reflexive nature of ethnographic work, the researcher decides what is of interest and the acknowledgement of the subjective, partial and local nature of the analysis allows the research to provide one interpretation of the phenomenon of interest (Pettigrew 2000). This does not exclude other interpretations, it is simply the one posed as an output of this research and supported by a thick¹⁹ description of the context and informed by the voices of both participants and literature in abstracting theoretical concepts. Because of the interpretive nature of ethnographic work, the use of the first person may occasionally be used

¹⁹ Thick description is as a way of achieving a type of external validity. By describing a phenomenon in sufficient detail, one can begin to evaluate the extent to which the conclusions drawn are transferable to other times, settings, situations, and people (Lincoln and Guba (1985).

in the writing of this report, to declare the position and bias of the researcher in the interpretation and making sense of data.

1.4 Ethical considerations

A distinct problem for ethics committees is the apparent lack of regulatory guidelines for ethics in the social sciences. Principles have been given whereby “informed consent, safeguarding privacy, assuring confidentiality, anonymity and not accessing the field in deceptive or fraudulent ways” have been encouraged, but not regulated (Ramcharan & Cutcliffe 2001, p359). The ethical support for this study was obtained according to acceptable university standards. Ethical approval is supplied in Appendix 1-3, but it is the researcher’s view that this does not necessarily cover the ethics of trans-disciplinary science where science and society are engaging as equal partners in knowledge-production and power-sharing. In addition, because GT is emergent and deliberately avoids posing a clearly defined research hypothesis at the beginning of the study, this further complicates the issue of ethics. How then does one ensure an ethical approach to GT?

In the first instance, it needs to be of concern to the participants. In this study, the investigation is embedded in a participatory action research project. By assumption, this process is voluntary, has arrived at a research agenda by consensus and requires a long-term commitment to relationships in the field. One of the characteristics of participatory research is that it reduces the distance between the researcher and the researched. Therefore, to achieve scientific rigour when constructing a GT, the researcher must “locate” herself within the realities being described (Charmaz 2005, p511). The researcher, being a participant in the SANPAD Participatory Project, realized this status. Without the objectivity of a positivist framework, the subjective experience of all participants is integrated into the social process being examined. What is recorded as the stakeholders’²⁰ understanding of the ‘shoulds’ and ‘oughts’ of the commercialisation process are recorded with all of their value-laden emphases. This arises because it is the social realities being studied and not the extent to which these realities fit into an objective view of what is happening (Figure 1.1).

With ethnographic GT, the researcher interprets stakeholder understandings through their own set of values and beliefs; influencing the selection of information as data, and the subsequent abstraction of that data into theoretical concepts (Charmaz 2005, p510). This requires a certain competence to avoid causing harm, abusing the participants’ goodwill or wasting

²⁰ The stakeholders referred to in this text includes other researchers, farmers, and market representatives involved in the SANPAD Participatory Project.

resources and participants time (Welman *et al.*, 2005). In the present study, the researcher brought into the project a range of perspectives drawn from experiences in faith-based community work, research and teaching. More specifically:

- i) An understanding of livelihoods theory in viewing the relationship between policy and individual livelihoods
- ii) A general understanding of participatory action learning in rural development projects
- iii) An appreciation and familiarity with African traditional livelihoods to the strategies, daily patterns, feelings and values expressed by farmers engaged in Complex Diverse and Risky (CDR) agriculture²¹
- iv) A desire to understand and identify decision-making patterns that could influence an approach to rural development that is space, place and environmentally appropriate for the people farming in communally managed land areas.
- v) A people development attitude that focusses on catching people doing what is right and building on that for increasing the farmers choices and freedom to determine the way they wish to live.

Although reality begins with the farmer, the development of theory is likely to be value-laden if not guided in some way that is deliberately sensitised. The guideline for focussing the empirical inquiry utilised sensitising concepts, drawn from the context to complement the process of GT. Adopting the use of sensitising concepts²² facilitates a value-sensitivity within the social change being observed, in that they can be used to define what is important to take notice of, and guide, how what is observed begins to fit into themes. These concepts are the starting points that allow GT to move beyond description to analysis and eventually a deep understanding (Bowen 2006).

An important contribution to maintaining integrity was that the research query arose through negotiation and consensus from the farmers' agenda. This leads us to the second ethical consideration for this study, legitimisation. Trust, rapport and commitment was initiated

²¹ I grew up in the Mwanzezi district of Zimbabwe in the tribal trust lands belonging to Chief Chitanga. I spent a fair amount of time participating in the planting and post harvesting activities within the domain of women (hulling, winnowing, grinding and preserving both grown and gathered food products) in Shangaan and Shona speaking villages.

²² Sensitising concepts were originally introduced by American sociologist Blumer (1954), as concepts that guide a line of inquiry in an empirical setting, rather than pre-determine attributes or bench marks such as those identifying a definitive concept

through the relationship of Modi, but had to be maintained through each researchers individual involvement, enthusiasm for learning from the farmers and our commitment to respecting their culture and ideas by incorporating these in experiential learning activities. In the very first stakeholder meeting between SANPAD, UKZN and the ARC, the farmers' EFO representative made it very clear that ethical research was a non-negotiable prerequisite for the project.

I was shocked by the community representatives (specifically 'M'²³..) saying that ... *"they wanted to make it very clear that the EFO considered Modi a gate-keeper and that all activity needed to come through him..."* Obviously, their previous experience was sufficiently negative to warrant discussion at a public and representative level. They did not want a repeat of the *"disrespectful attempts to obtain research data"* which had been initiated by a previous experience with a UKZN researcher (FN231005)²⁴.

Throughout the project's on-going engagement; the building of relationships, regular visits to trial sites and homesteads of key informants, responding to collective training requests and reporting back as members of the farmers' forum kept the relationship accountable and transparent.

Finally, one of the most important ethical issues in engaging with communities, and with farmers in particular, is to be considerate of the participants' time, their world view and the impact of your involvement on their busy lives. The values respected in the research process may be as important for creating knowledge as the research results. For these reasons, the present researcher's engagement with farmers focused around planned activities such as monthly farmer forum meetings, regular visits to in situ crop trials and other meetings and activities volunteered or requested by the farmers themselves, as part of the commercialisation activities. Again, working in pairs or groups of researchers, valuable time was conserved because researchers could create multiple data sets within one event.

It has already been stated that relevancy to academic discourse determined that the social inquiry in this enquiry needed to give 'voice' to the values and practice of a particular phenomenon for participants. In other words, it needed an ethnographic approach, concerning itself with emic issues. Sensitivity to emic definitions of 'sustainability', 'economically

²³ Name removed to protect identity.

²⁴ Used throughout this written report, the reference given includes the acronym FN for field notes and the recording date as day/month/year. See also Acronyms and Abbreviations.

viable' and 'culturally acceptable' influenced the observation and selection of information for knowledge reconstruction that could influence structures and institutional relationships in dealing with uncertainty and change. Finally, the study focused on proposing conceptual relationships that would support sustainable networks and knowledge accumulation in commercial social agronomy. As a grounded ethnography, the theory developed is abstracted from real time and place, which accounts for its potential ability to be confirmed, replicated or transferred within other empirical contexts.

1.5 Constraints

Even though the enquiry is situated and focuses on a single phenomenon, studies of this nature provide extensive amounts of data through the observation and participatory engagement. For this reason, boundaries are required to focus the enquiry. For this study a time frame was determined as being the three years of the participatory project. Practically this meant that the information from which data would be extracted was collected between 2006-2009. Furthermore, in the selection of data from information (through coding), the criterion of "does this information have to do with the production and marketing of *amadumbe*" was used to focus the selection of characteristics for theoretical concepts.

The reflective process itself is subject to the skill and consciousness of the researcher. The ability of the researcher to build on his or her strengths in the conceptualization and practical aspects of making meaning, determines the effectiveness of research. As the SANPAD Participatory Project unfolded, the sharing of values and beliefs through learning experiences brought stakeholders much closer together, in terms of shared values and beliefs. Using a constructivist approach to the analysis of processes allows for the understanding of transformation to be connected to knowledge-building through the reflexive engagement of the researcher with local and specific realities including agency in the process of change.

A constraint for the researcher was that she did not speak the local language and therefore all dialogue needed to be translated. Originally a weakness, this was converted into an opportunity to confirm the understanding of data. A fellow researcher present at all the encounters and who was also involved in the SANPAD Participatory Project translated all probing questions and dialogue.

1.6 Value of the research

This research makes explicit the use of a constructivist approach to produce theory from a participatory learning process. As such, it offers an example to future researchers attempting

to use either GT or attempting to produce theory from complex developmental problems within the context of agriculture that is acceptable to both practical applications of knowledge or to rigorous scientific debate around the concepts of knowledge.

The Research re-defines commercial within a development context. What is presented is a theoretical interpretation of the commercialisation dynamics that occurred through a three-year participatory development project bringing small-scale organically certified farmers, researchers and a market together as stakeholders. For the farmers, who were members of a community structure called the Ezemvelo Farmers Organisation, commercialisation was a deliberate shaping of a new reality and re-defined the understanding of ‘commercial’ from large-scale, highly mechanised agriculture, towards a definition of ‘commercial’, constructed from the interaction of farmers with opportunities made available in their environment and embedded in the social fabric of communal spaces.

The research also makes explicit shared values and beliefs. The new definition is argued as a rational response to small-scale, low-input commercial agriculture, concerned with managing social, environmental and economic uncertainties. The GT representing this definition makes explicit the shared set of values and beliefs that accompanied the re-allocation of scarce resources in response to the market and learning opportunities offered.

And, finally, the research makes explicit an indigenous solution to small-scale commercialisation. This research then, complements experimental research and ‘change’ activities²⁵. It does this through an account of the processes and relationships in the dynamics that influence decision-making. The decisions themselves regard the commercialising of indigenous crops through resources that have historically been allocated to subsistence farming in an agrarian way of life. The value lies in making explicit what the farmer is learning, what the market is learning and what the researcher is learning about sustaining agriculture as an economically viable lifestyle within the context of communally owned land in rural KZN.

1.7 Outline of thesis

In constructing a theory, the ‘making sense’ of the data is a combination of linking existing literature to inductive thinking with information from the context and the abstraction of these understandings for propositions that help define the theory as useful (Weick 1989, p 516).

²⁵ Burkey’s book, *People First* (1993, pp73-87), devotes an entire chapter to the role of external catalysts and agencies in facilitating change through participatory rural development.

Grounded Theory can use any type of data and therefore the writing up of the research process should reflect the relevancy of the data itself. Although the theory building in this research draws on the theory of the U (Senge *et al.* 2005) for a deepening understanding of dealing with change, an eclectic range of literature for developing concepts was also utilised. In order to assist agricultural scientists and practitioners to see the relevancy of the study, the research is finally set within the context for agrarian change. The use of this literature set identifies what Bryceson *et al.* (2000) refer to as the return of ‘peasant agriculture’ to both an academic discourse and that of current agrarian reform. Although this discussion is placed as the penultimate chapter, it is recommended that it be read after Chapter 1 before moving on to the characteristics of the research area and the rest of the report.

The reporting of this research then, begins with a thick description of the setting, develops increasingly abstract concepts through a theory development process that occurs in two phases. There was the observe and participate phase which focussed on the emerging design and creation of a data set during an extended engagement with the farmers (Chapters 4 & 5), and a constructive phase (Chapter 6). The discussion of results (Chapter 7) requires a return to the literature for a particular field of knowledge within which to make a practical contribution through the final stage of drawing conclusions and making recommendations.

In Chapter 1, the study was presented as the construction of theoretical propositions grounded in the observation of a researcher-farmer partnership for commercialising traditional small-scale agriculture²⁶. The purpose and underlying philosophy and assumptions were declared as the basis for the research design. Essentially, an emergent design has been presented as an appropriate response to an emergent and open ended research context.

In Chapter 2 the recording of observations through a description of the research area begins. The perspective utilises a livelihoods lens in order to help the reader visualise the research setting, the available resources and complexity within which theoretically abstracted concepts are embedded. It provides a thick description spanning the duration of the SANPAD Participatory Project period. The narrative includes researcher observations and stakeholder

²⁶ The use of the term small-scale in Chapters 1-7 of this thesis reflects the term that the farmers of the EFO use to describe their vision of agriculture for the future. This is consistent with constructivist GT which attempts to use the language and terminology identified within the context for building categories. However, the literature review in Chapter 8 of this thesis takes us into the academic discourse which historically defines peasant agriculture as a theoretical term related to classifications of practice, power and class and homestead agriculture. Here, small-farms, commercial, subsistence and small-scale as terms used by the variety of sectors to try and find a term that fits into the south African context of land reform. These terms are introduced and put into context in Chapter 8. The researcher personally believes that homestead farming best describes the nature of CDR agriculture in the rural sub-Saharan context regardless of how farming is used to achieve livelihood outcomes.

voices, weaving together a description that helps the reader identify with the context. Other information for this description was drawn from previously published research, from concurrent studies being conducted as part of the SANPAD Participatory Project, available official data about the region and information which the researcher has observed or been given by the farmers.

In Chapter 3, a philosophical and theoretical defence from literature for constructivist GT ethnography is given as a theoretical framework for the research process. The purpose of any research is to contribute new knowledge to a field. Reviewing literature explores the current controversies and conversations within which one can explore a gap in knowledge. Because of the decision early on to use GT as both method and analysis of the research, this process was avoided until reflecting on the data itself, hence its positioning as the penultimate chapter. The process of searching methodological literature in Chapter 3 generated a theoretical framework for an emergent research design, providing a defence and theoretical underpinning of an appropriate design for presenting theoretical propositions that are ethnographic and constructivist, from the context itself.

In Chapter 4, GT is presented as the method of unfolding practice or operationalisation of the research question. The way in which the GT was used systematically, as both method and analysis in selecting data, building theoretical concepts from that data and generating propositions for a new way of thinking about productive homestead agriculture is reported on. In this chapter, the sensing learning cycle adopted from the theory of the U (Senge *et al.*, 2005) literally becomes the ‘theory of us’, through the support and collective insight shared by the SANPAD research stakeholders, colleagues, discussion in academic corridors, tea rooms and opportunistic encounters, and those who interacted and gave feedback with the presentations (both locally and internationally), and posters that communicated the emerging theory.

Chapter 5 begins the central analysis of the research and presents a reflective essay on the development of sensitising concepts which influenced the core selection and focus of theory construction. These sensitising concepts emerged as guiding themes under which the scope of the study could be narrowed.

Chapter 6 outlines the actual development of the theoretical concepts of the theory. In this chapter, definitions for Collective and Individual Wisdom, Integrating Accessible Opportunities and Learning for Livelihood Sustainability are abstracted from the empirical

data as core theoretical concepts that support the underlying theoretical development of Systemic Integrity as the interpretation of what the farmers *meant* by “successful farming”.

Chapter 7 offers a critique of the research process, the results and presents the recommendations for practical application and further research. In addition, it offers the theory of systemic integrity as an alternative strategy for the linear progression for subsistence agriculture offered by the National Strategy.

Chapter 8 is a return to the literature written after the completion of the analytical process of handling data. It provides a context for judging the relevance and modifiability of the findings within the context of agrarian change and development. It is recommended that this chapter be read before actually reading the construction process of the research.

An eclectic collection of literature was used within the theory building process to test the researcher’s development of constructs against other voices. This was done to both add depth to the interpretation as well as to provide reflexivity. The multi- and trans- disciplinary nature of developing a theory in the development context demands a wide range of literature to test and develop interpretations and meanings. Appropriate and illuminating literature has thus been drawn into the discussion and reflection throughout the chapters as appropriate. In particular, the methodology as GT has relied on Kathy Charmaz’s (2006) particular contribution to qualitative research in the form of constructivist GT. Background understandings about systems and appropriate vocabulary arose from readings in the environmental sciences. Sense-making has relied on the practical guidance of applied methodologists Lyn Richards (2005) and Paul Leedy (Leedy & Omrod 2001). Meaning has been informed by the profound ideas on the role of leadership within the current need for organisation change and learning (Peter Senge *et al.*, 2005; Margret Wheatley 2005; Riane Eisler 2007) and the hope for scientists in shifting research paradigms that include more effective responses to society’s needs, presented by Helga Nowotny, Peter Scott & Michael Gibbons (2001). Finally, because it is perhaps most important within this context, the researcher has woven in her developing consciousness of ethics, world views and philosophy from an African/Afrikan²⁷ point of view presented by academics such as Mokong Mapadimeng (2005), Kwasi Wiredu (1998), Munyaradzi Murove (2008), Mandivamba Rukuni (2007) and John Masango (2006).

²⁷ The spelling of African as Afrikan is deliberate. It represents the movement of people with African ancestry from around the world, to reclaim their cultural integrity and strengthen the connections with their spiritual roots through the practice of Sankofa (Dr Maribi Ani, To be African, available from http://www.africawithin.com/ani/ani_afrikan.htm).

Chapter 9, provides a summative chapter. The chapter re-visits the purpose of the research, identifies the relevance of the analysis and the method before finally making recommendations and drawing conclusions. The final summary reinforces the value of the research in encouraging a nurturing approach rather than a development approach to building rural economies.

2 FARMERS' EXPERIENCE AS REALITY – AN UNTAPPED POTENTIAL

2.1 Characteristics of the research area

The starting point for understanding the nature of any traditional rural livelihood is to identify the natural resources available. From there, our understanding of how people use those resources to sustain their way of life can be explored. The structures and processes, both within the system boundary and without, are forces which exert pressure on the shape of those livelihoods. The ultimate goal for development in a globalising environment is therefore to increase the capacity for agency to link a local context to the external environment in ways that result in management of these resources for an improved quality of life. In this chapter, the research area is located geographically and explored through a livelihoods lens to describe a situated (human/socio-agronomic) system within an environmental and historical context. Except for where otherwise indicated, the information in this chapter is a synthesis of the researchers subjective observations, participatory experiences and extractions of insider voices from field notes recorded between October 2005 and January 2010. During this time, the researcher engaged with farmers and UKZN researchers in the SANPAD Participatory Project¹.

2.2 Location of study area

The study area is defined by Latitudes 29°58'30" and 30°4'45" South and longitudes 30°36'45" and 30°43'15" East; visually south and east from Pietermaritzburg and south and west from the city of Durban (Figure 2.1). The small town of Umbumbulu marks the closest urban economic hub and straddles the R603 (Sbu Mkhize Drive) between Camperdown (south and inland, west of Durban) and Isipingo (south of Durban), via the M30 (Figure 2.1). The farmers repeatedly refer to the town of Isipingo as the place they go to for supplies (e.g. groceries, seed).

¹ The SANPAD Participatory Project and its importance will be explained in Section 2.8.1

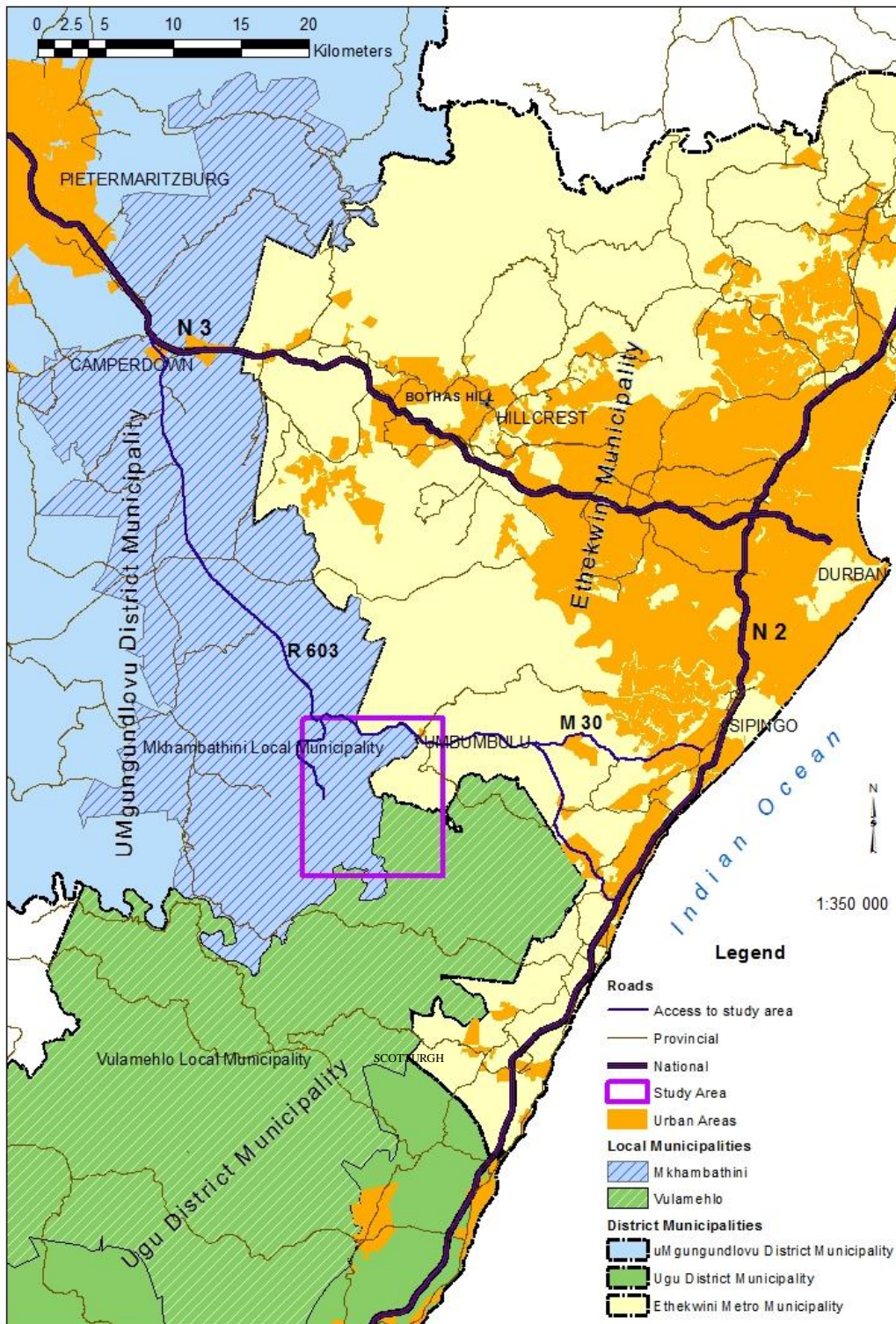


Figure 2.1 Locality map of study area (Caister 2011)

Comment: Source: Caister 2011. The maps in Figure 2.1 -2.4, were compiled by Mike Caister from the following data bases: Shape Files from the GIS Section of Durban University of Technology November 2010; Durban (eThekwini) Municipality [www.citymaps.gov.za]; the Municipal Demarcation board data base [www.demarcation.org.za]; and the Cadastral database of the Office of the Surveyor General: KwaZulu-Natal, Pietermaritzburg.

Chapter 2. Characteristics of the research area

The area where the farmers of the Ezemvelo Farmers Organisation live is commonly understood in South Africa as a former homeland area² of southern KwaZulu-Natal (KZN) (Figure 2.2). Originally part of the Umlazi Location³, most of the EFO farms are located in the deep rural area at the intersection of three district municipalities (Figure 2.3). Because the study area falls within the Umbumbulu Magisterial District it is also known to locals as a rather vaguely defined area called ‘uMbumbulu’.

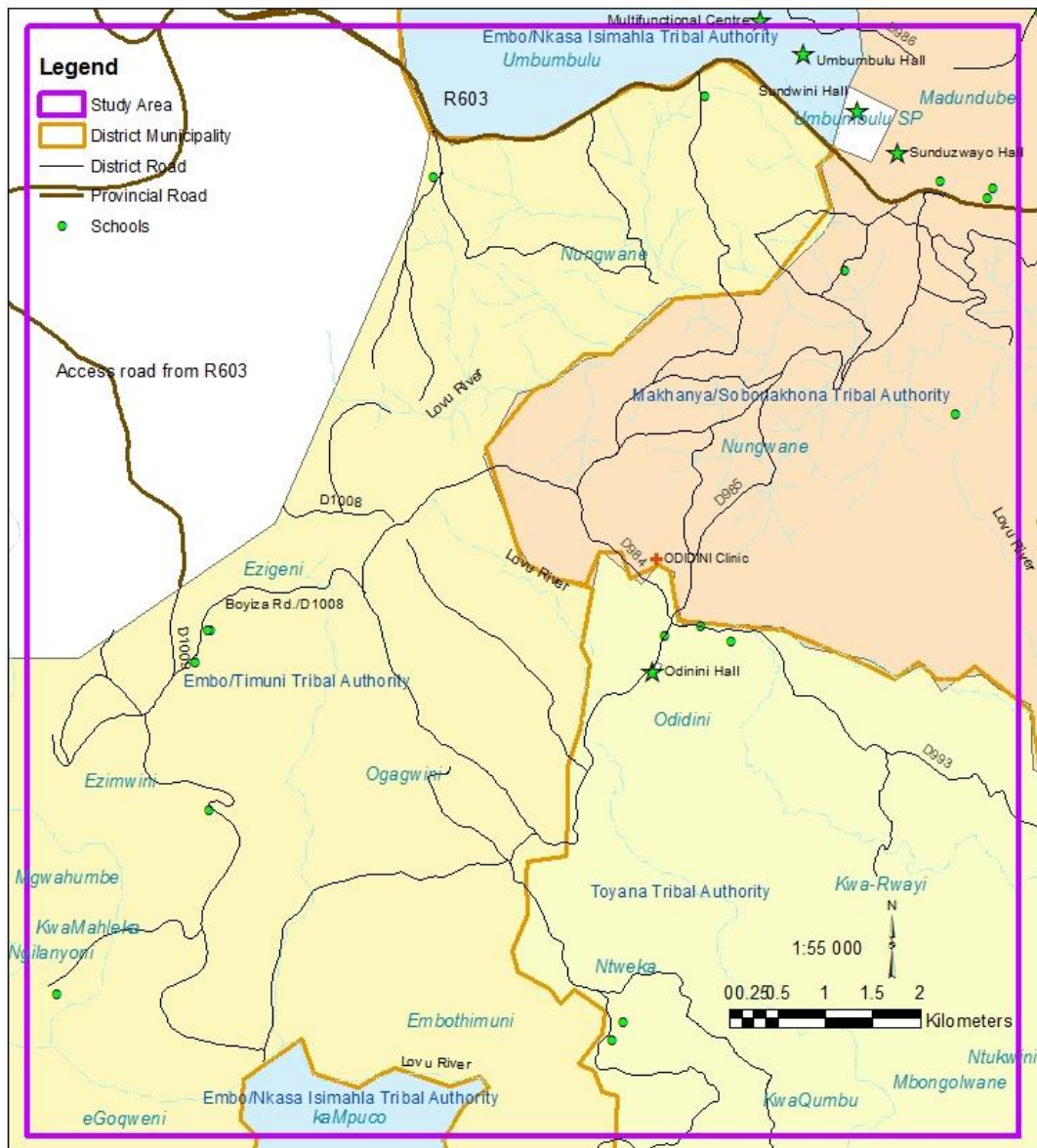


Figure 2.2 Map of study area (Source Caister 2011)

² See definitions

³A result of the 1946/47 Natal Land Commission was six ‘native’ reserves, referred to now as former homelands. In 1959 the Bantu Self-Government Act) excluded all ‘Africans’ from the South African state. KwaZulu (Zululand) was established as a fusion of reserves governed by apartheid-approved tribal leaders, and scattered in pockets around white owned-farmland in the Natal Province (Christopher 1994).

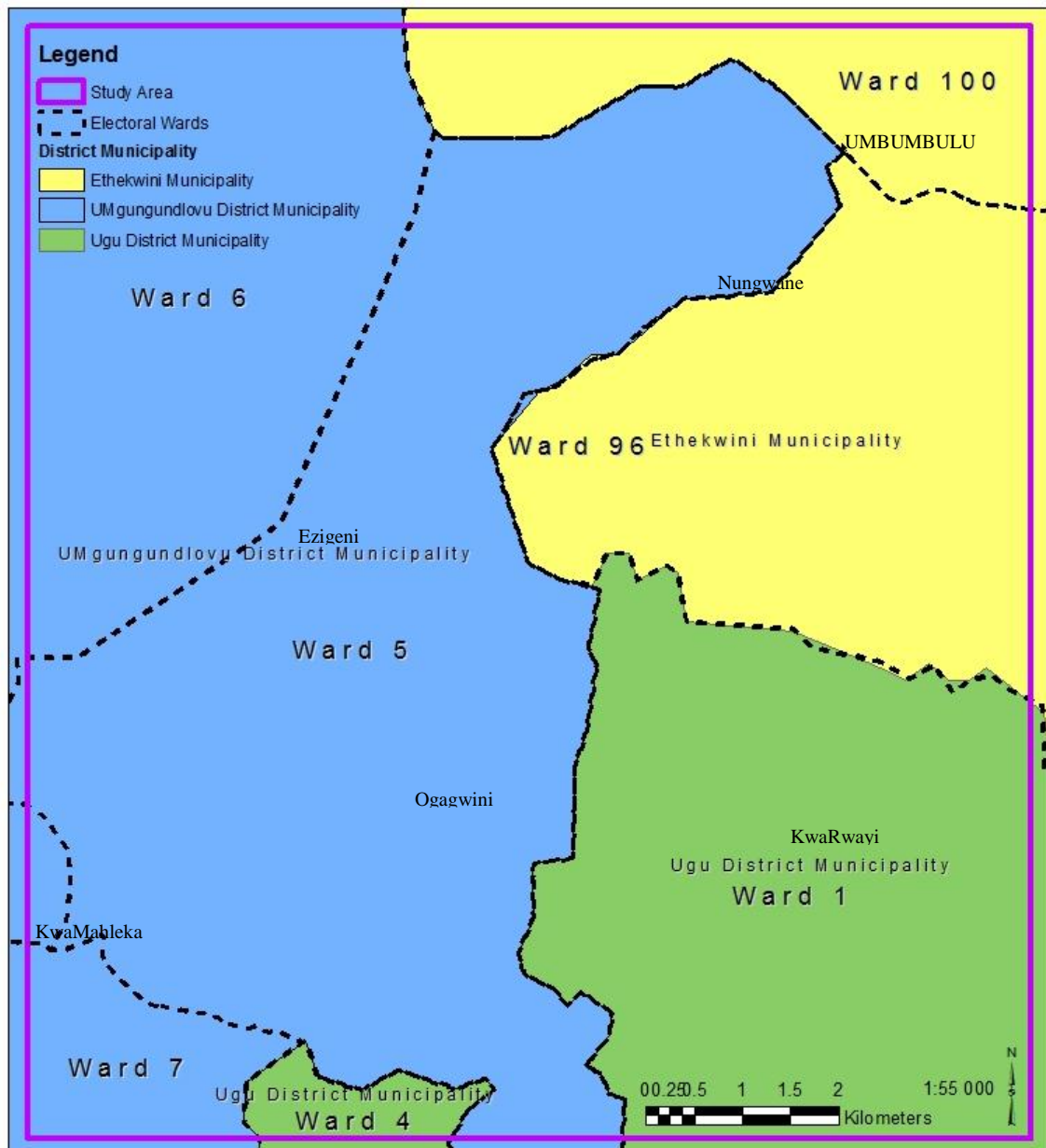


Figure 2.3 Showing political demarcations (wards) in the study area (Source Caister 2011)

2.3 Geographical characteristics

On first impression, Umbumbulu has visual boundaries on the rural landscape. One sees large-scale commercial agriculture (mostly vast, rolling fields of sugar cane) clearly separated from subsistence farming areas, where the of smaller contoured fields surrounding groups of circular shaped traditional Zulu homesteads forms a patchwork effect (Figure 2.4 Map representation of land use in study area and Figure 2.5 aerial photograph, Department of Transport data base).

Chapter 2. Characteristics of the research area

As in many rural areas of South Africa, one notes that housing, a mixture of traditional and modern block or brick, clusters along the main access roads in an attempt to secure access to infrastructure and services. The study area, however, is mainly agrarian and traditional homesteads with their associated cultivations, fallow fields and grazing lands remain dispersed over the rolling hills (Figure 2.6).

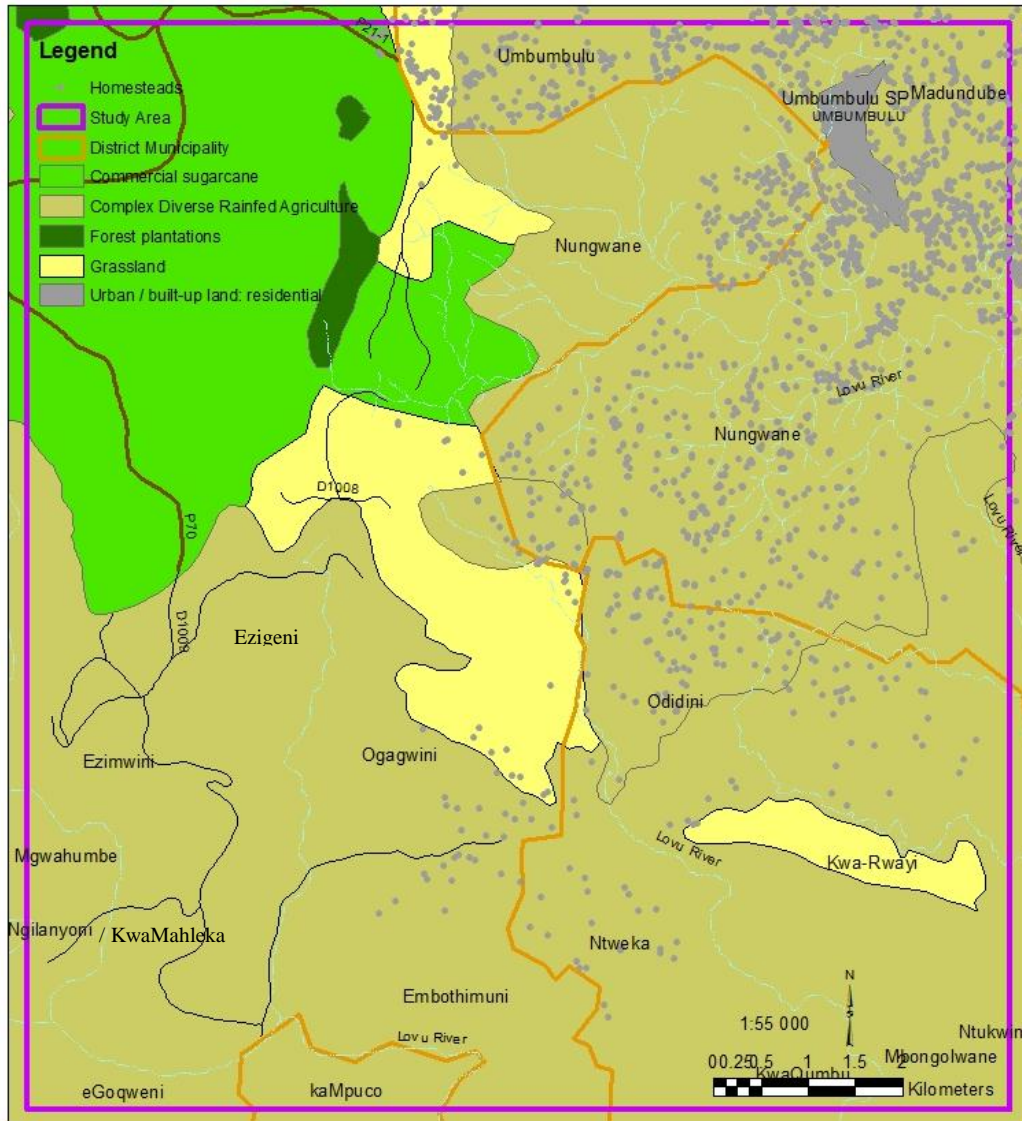


Figure 2.4 Map showing land cover in study area (Source Caister 2011)

Map Comment: In previous classification criteria, this region was known as Ngongoni⁴ bushveld, but the new classification refers to the area as Savanna Biome, characterised by bush clamp grassland with wooded areas (Strydom & King 2009; Camp 1999).

⁴ ngoni means 'stem' in isiZulu, ngongoni is the isiZulu name for bush clamp grass.



Figure 2.5 Example of commercial agriculture contrasted with CDR (aerial photograph, Department of Transport data base)

Chapter 2. Characteristics of the research area

For millennia, the topography has been carved by glacial activity, water on granite and wind on sandstone (Embo Rural Development Framework 1998, pp12-17). These forces have left the region with a rugged topography of deeply incised rivers, eroded granite hills and some relatively flat-topped hills that are remainders of sand-stone formations (Figure 2.7). In this region, human beings have altered the landscape through agricultural activities. To the eye, the landscape in the study area has a distinctly cultivated and natural grazing pattern to it with clumps of indigenous wooded areas mainly along water courses.



Figure 2.6 Umbumbulu, traditional farming homestead (Photo: Caister, 12 December 2007)

Sheltered from frost, the average seasonal temperature is 18.0-25.2°C. A mean rainfall of 956mm provides a climate that is moist, warm and largely conducive for growing rain-fed crops. Actual rainfall and temperature data in this region is unreliable and inconsistent (Massey 2008). Rain generally falls between October and March, with recorded annual rainfalls of 700-1000 mm. This is a higher rainfall than most of KwaZulu-Natal and the rest of South Africa, with means of 845mm and 597mm, respectively (Strydom & King 2009).

A characteristic of rainfall in South Africa is that it is highly variable (Klopper 1999). Historically, summer rainfall areas of South Africa have an 18-year cycle of nine dry and nine wet years (Strydom & King 2009). A major drought was experienced in Umbumbulu in the mid-1960s followed by above average rainfall in the mid-1970s and below-average

Chapter 2. Characteristics of the research area

rain-fall in the mid-1980s (Dyer & Gosnell 1978, p206). Between 1987 and 1996 KwaZulu-Natal experienced a gradual decline and then rise in rainfall (Dube & Jury 2003, p201).



Figure 2.7 Flat-topped hill with deeply incised valleys and wooded water courses (photo: Caister, 12 December 2007)

All three Global Circulation Models for climate change (HadAM3, ECHAM4.5 and CSIRO Mk2), predict that the entire east coast region of South Africa is expected to become wetter and warmer in the next 25 years (DEAT 2007, p.219). Mr Miya, a key farmer informant in this research, observes that, in his experience, there is more rain falling in shorter periods of time, with longer stretches in between; and temperatures are warmer (FN190909).

2.4 Governance structures

Because of the historical perspective, the area is also sometimes referred to by outsiders as Embo, reflecting the dominant lineage of the traditional authority structure in the region. The Mkhize-Embo clan is an offshoot of the Embo, a large group of clans that occupied Zululand in the pre-Shakan era (Embo Rural Development Framework 1998). Members of this clan were core founders of the EFO and reside as a cluster of homesteads in the

Chapter 2. Characteristics of the research area

lowlands of Ezigeni, below the D1008 known locally as Bhoyiza Road⁵ (FN08092008). In reality, the farming members of the EFO live at the geographical convergence of three tribal authority regions (Toyana, Embo-Timuni, Makhanya-Sobonakhona) subjecting members to three different personalities interpreting traditional authority roles, responsibilities and process to occupy land (Figure 2.2).

2.4.1 Structures

The area falls within urban-rural linkages for municipal structures. The Municipal Structures Act (1998) required all land areas in South Africa to be included in municipal boundaries for demarcating political constituencies envisioned as assisting participatory democracy. Municipalities are split into political subdivisions called wards (Figure 2.3). Wards have councillors appointed by the party that has won the most recent regional election. This political structure was intended as a channel of communication to link communities to structures and processes for the use of public and political resources supporting development within their ward (Agergaard & Birch-Thompson 2007). It can be seen from the maps that the district municipalities, the tribal authorities and wards now share the same district boundaries.

This inclusion of rural areas places the responsibility for the supply of infrastructure, such as schools, roads, markets, reticulation, electricity, communications and municipal services for health and safety on municipal capabilities. Three local municipalities, with differing district capacities for infrastructure and service delivery, converge in the study area: Ethekewini City Metropole (combining the district and local municipality), uMgungundlovu District Municipality through the Mkhambathini local municipality and the Ugu District Municipality through the Vulamehlo local municipality (Figures 2.1 and 2.2). The result is an unequal distribution of access to municipal services and development delivery for EFO farmers, depending on where they fall in the municipality and ward authority structures.

2.4.2 Service delivery

From data supplied by Statistics SA, this region is considered seriously deprived, in terms of the KwaZulu-Natal Multiple Index of Deprivation (Chief Directorate of Surveys &

⁵ Bhoyiza Road (Figure 2.3 and 2.5) is named after one of the 'generational' grandfathers. Bhoyiza is the direct descendant of the Mkhize-Embo chief, father of Ti (Tilongo) Mkhize, who is the father of Joe Mkhize (EFO Farmer) (FN 120908 Group Interview with the Mkhize family wives of Ezigeni. For picture of some of the Mkhize wives see Figure 2.19).

Mapping 2005). In general, reticulation, electricity and refuse disposal are still hoped for but not realized. Water is delivered once a week by tractor-hauled tanker and pumped into fixed community jojo tanks (5000 litres each) and homestead barrels (200 litres each) that people put out along the roadside (Figure 2.8). Providing containers is the responsibility of homesteads. A common place of purchase is the Durban Market. In 2008, the most commonly seen blue barrels sold for about R100 as used containers from chemical companies.

None of the homesteads we visited had on-site municipal water. Homesteads along the R603, just before the town of Umbumbulu, had access to stand pipes at regular intervals on the highway siding. For most inland people, water for drinking, washing and agriculture came from the delivered water and from perennial water supplies hidden away in springs and ravines that wound around the bases of the hillsides.



Figure 2.8 (L) fixed jojo tank; (R) blue water barrels (photo: Caister 2006)

In 2007, Mr Maphumulo was the first farmer to get Eskom electricity in his area. By 2008, ventilated pit latrines were being installed on the farms. The strategy was for local municipalities to supply homesteads with R2 800 worth of bricks, cement, roofing and a toilet seat. Each homestead was expected to dig the hole and the municipal contractor would then construct the toilet (FN12092008).

2.5 Land tenure and governance in Ingonyama Trust Lands

In 1913, the South African Party of the newly established Union of South Africa passed the 1913 Native Land Act. Its aim was to destroy independent African existence, in the interest of white settlers. Effectively, the Act set aside about 7% of South Africa as land reserves, envisioned as settlement areas for black people to live while providing pools for migrant labour supplying white-owned farms, mines and urban industry. The 1936 Native

Trust and Land Act, effectively formalised the separation of black and white land, causing decades of marginalisation and hardship for rural black people (Figure 2.9).

<ul style="list-style-type: none">• The Act integrated land identified by the 1913 act into African reserves, and thereby formalised the separation of White and Black rural areas;• The Act established a South African Native Trust (SANT), which purchased all reserve land not yet owned by the state, and had responsibility for administering African reserve areas. The SANT imposed systems of control over livestock, introduced the division of arable and grazing land, and enforced residential planning and villagisation (called ‘betterment’) under the guise of modernising African agricultural systems;	<ul style="list-style-type: none">• An elaborate system for registering and controlling the distribution of labour tenants and squatters was introduced under the Act. With these provisions, any African unlawfully resident on White-owned land could be evicted; and• areas in White South Africa where Black people owned land were declared “Black spots”, enabling the state to implement measures to remove the owners of this land to the reserves.
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Figure 2.9 Key restrictions of the 1936 Native Trust and Land Act (South African History Online 2011)

Fearful that the post-1994 ANC government would declare former reserves as state owned land, the Inkatha Freedom Party (IFP), used its political links to ensure that all communal land in KwaZulu-Natal (formerly Natal) be given to the Zulu King to hold in trust for the Zulu Nation (Reynolds 1999). The IFP ploy worked and, while all other reserves reverted to state owned land, the Ingonyama Trust, ensuring communal land tenure within KZN, was established following the 1994 elections.

Through the Natal Ingonyama Trust Act (Act 3 of 1994), approximately 2.7 million hectares of land spread throughout KwaZulu-Natal was allocated to be held in trust as land owned by the Zulu Clans. According to the definitions of the current Communal Land Rights Act 11 of 2004, this means that the land belongs to the ‘community’ and is subject to current land acts. The land owner, in terms of the law, is the King of the Zulu Nation and, in practice, is administered through the Ingonyama Trust Board, a product of the

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KwaZulu-Natal Ingonyama Trust Amendment Act (National Act 9 of 1997). The Trust Board answers to the law of the land through the executive authority of the Minister of Agriculture and Land Affairs on the nature of administration, development and security of tenure, according to customary and statutory law and subject to the 1996 South African Constitution. As trustee of the Trust, the Ingonyama chairs the Board and he/she negotiates with the Minister and the provincial Premier for the other eight members of the Board. The provincial Ingonyama is currently the Zulu King, King Goodwill Zwelithini ka Bhekuzulu. The Trust Board is accountable to the Zulu Nation through the *ubukhosi*⁶, personified as the *Nkosi*⁷ of a particular region (based originally on geographic aggregations of clan members), within the Ingonyama Trust Land areas (extracted from Ingonyama Board Annual Reports to the Minister, April 2005-March 2006, April 2007-March 2008).

Traditionally, the institution of *ubukhosi* allocates and negotiates the use of land belonging to a clan or group of clans. Other roles involve the promotion of material benefits and social wellbeing of the inhabitants. A post-apartheid role of the *ubukhosi* requires the *amakhosi* to provide guidance and support for the use of Trust lands and negotiate leases for external parties who wish to develop or use Trust lands. Trust land may be leased by consensus, but is not usually considered saleable. Because land ownership in the Ingonyama Trust agreement is secure, tenants have tenure, but not individual legal ownership in the form of an exchangeable title deed.

The perceived value of the *ubukhosi* is that it arises from indigenous roots. Roots rich in customary practice makes it a familiar structure, perceived as having had a stabilizing social influence throughout the apartheid era and into the contemporary period (Agergaard & Birch-Thomsen 2006). Other perceptions are that tribal authority structures undermine the progress towards democratic consolidation in South Africa (Agergaard & Birch-Thomsen 2006). From a development perspective, housing development for government-constructed housing is frustrated because it is linked to ownership and control. Services are 'paid' for by billing specific land inventory systems such as erfs and farm units. Planning requires demarcations for public and residential purposes. One of the other

⁶ The Zulu chieftains are referred to individually as *Nkosi*. The *ubukhosi* is the institution of the Zulu traditional authority structure, of which the King is the highest authority.

⁷ Zulu word for chief

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tensions is that, historically, permission to occupy land has been granted on the basis of integration into the local community, through extended family relationships or marriage. As tribal land has been crowded with squatters (nearer to towns), but is also on the fringes of the peri-urban areas, complete strangers are being incorporated into the once kinship-based accountability for land use (Fourie & Hillerman 1998).

For hinterland farmers, farming land is not an issue.

Land is not an issue; we have plenty of land (FN260407). It is 'hands' that we are short of (FN120908, FN 250607), confirmed farmers in Ezigeni and kwaMahleka (Figure 2.4), in two different conversations.

For EFO farmers close to peri-urban boundary areas, such as kwaWhyai (kwa-Ryai) (Figure 2.4), land pressure is becoming a constraining issue. This is further complicated by their reliance on the Nkosi for arbitration on land availability. Amakosi are perceived as being very reluctant to generate letters as verification of permission to occupy land for bank loan procedures. Farmers who wish to secure bank loans are further frustrated because they have no equity for collateral (Fourie & Hillerman 1999).

The current identification system for South African bank processes requires not only official identification documentation, but a municipal document (or letter from the Nkosi) addressed to you at your place of abode. Imagine the following scenario: you do not speak, read or write English, do not pay an electricity or water bill (because you have neither of these services) and you do not even have a road that identifies your 'place of abode'. You travel by taxi for at least 50 km (one way) and try to establish a business relationship with a bank through an urban dwelling teller who does not speak your language and does not have the authority to adjust the process to accommodate the missing 'required information' you could not bring with you.

2.6 Commercial agricultural potential

The Department of Agriculture's data base on KZN (Camp 1999) suggests that, as a benchmark, the commercial crops suitable for the precipitation and temperature range in this area are tomatoes, cabbages, sugarcane, maize and dry beans. Buthelezi's (2010) study of soil fertility in the Ezigeni and oGagweni areas of Umbumbulu identified a close similarity in farmers' local identification of soils to published scientific classifications. She also found that there are distinctively different localised qualities of soil; some more suitable for low-input agriculture than others. Klopper's research into climatic conditions in SA (1999)

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draws the conclusion that, through understanding local conditions and patterns, the potential use of a region may be more effectively taken advantage of. His recommendation is that, in addition to local knowledge, achieving reliable and dependable forecasts with the capacity for flexible crop production would assist the agricultural sector for effective use of the precipitation and temperature variations (Klopper 1999).

Ezemvelo Farmers define the productivity of their soils in terms of crop yield, crop appearance, natural vegetation, soil texture, soil colour and the presence of mesofauna⁸ (Buthelezi 2010). The EFO farmers will tell you that there is a wide variety of bioclimatic zones, soil fertilities and hillside positions that affect productivity, even within the EFO farming areas. What works for one farmer may not work for his neighbour. Evidence in the form of soil fertility tests and consistently higher yields of maize, *amadumbe* and dry beans appear to be the result of EFO Farmers who are meticulous in crop rotations and other land management rhythms; and who add organic matter in the form of natural manures for fertilizer (Buthelezi 2010, p.43). When the farmers say that their soils are or are not fertile, we can assume that this is an estimate of current production potential in terms of the inherent knowledge and skill that farmers have accumulated.

2.7 Farming system

Farms in the communal land area of Umbumbulu are similar in size with cultivated areas ranging from 0,5 hectare to 5 hectares (Maragelo 2008), and 0,6 to 4 ha (Buthelezi 2010). Fields are rain-fed and unfenced. There is a trend to fence the homestead and kitchen garden (rather than the fields) as fencing becomes accessible. Although opportunistic use of tractor power for ploughing flat areas is a priority, cultivation typically follows contoured planting across slopes using traditional hand (or draught-operated) equipment (Maragelo 2008). Commercial production relies on a re-allocation of subsistence resources rather than inputs, for example, livestock manures and a land race variety of *amadumbe* for planting material.

⁸ Also identified in the SANPAD Research Agenda Workshop, 25 March 2005, (Caister 2006, Appendix 1-1). Earthworms were associated with soil productivity and millipedes (*amashongololo*), cutworms (*umswenya*), big ants (*omakoti*), maize stalk borer (*isihlava* comes up out of the soil), small red soil organism “like a red termite” (*isibomvu/ezibovu*) (FN 190909) were associated with decreased yields because of damage to seeds and planting materials.

2.7.1 Homestead level system

Within the EFO farming community, we see a set of coherent strategic notions about the way in which farming should be practised. At household level there are clear roles and responsibilities for various farming activities. In general, men take responsibility for ploughing and building structures for storing harvests; women for planting, weeding and harvesting (Figure 2.10). Traditional roles are changing, because of not only the way households are made up, but also because of the added responsibilities on remaining household members, as some migrate to urban areas, and the increased production that access to markets encourages. When necessary, entire households participate in the preparation, planting, management and harvesting of food crops and future planting materials based on availability and ability, rather than gendered roles. For example, relatives are expected to assist when visiting. Sisters and friends may share intensive work periods and husbands and wives are often observed sharing the load of planting, weeding and harvesting. Ploughing is the only exception (Figure 2.11). Women in Umbumbulu still do not handle cattle.

The flexibility with which homesteads can arrange roles and responsibilities is also seen in farm management decisions. In the fields, there are deliberate decisions that form differentiated patterns of practice. Although this study did not measure whether or not there was a differentiation based on gender, the knowledge that each farmer commands of soils and plant requirements allows them to choose from a variety of known alternatives to suit the environmental or socio-economic situation they find themselves in. Planting dates and crop rotations change to suit precipitation and slope layers are chosen for crop suitability (Buthelezi 2010, Maragelo 2009). Soil colour, structure and workability are considered when allocating resources (such as labour and manure) and choosing crop sequences. Besides crop suitability and soil fertility considerations, land and labour availability as well as the anticipated rate of emergence of plants, may impact whether fields are intercropped, monocropped or left fallow (Buthelezi 2010, Maragelo 2009).



Figure 2.10 Mother and daughter working in winter vegetable garden, Ezigeni (photo: Caister, 2 August 2007)



Figure 2.11 Ploughing with oxen or donkeys remains a gendered role (photo: Caister, 28 November 2006)

2.7.2 Subsistence farming

Ezemvelo Farmers rely on indigenous systems such as crop rotation, crop residues and animal manure for soil fertility management (Buthelezi 2010, p24). Farmers grow what they know that they will eat, will be able to sell and what is needed for planting in the next season (Maragelo 2008, pp 98-206). Subsistence crops commonly cultivated are taro (*amadumbe*), maize, sweet potato (three month and six month varieties), banana, Zulu potato, Irish potato, pumpkin, indigenous melons, dry beans and legumes. A wide variety of other vegetables and fruit are also grown. Avocado, guava, bananas, oranges, peaches, lemons, mango and tree tomato can be found at various homesteads. A wide variety of other foods referred to as *amavegie* are also grown: green pepper, green beans, aubergine/brinjal, chillies, various gourds and squashes, cabbages, Swiss chard, carrots, onions and beetroot. Along with pumpkin leaves, *amavegie* may be grown for homestead use or to sell to markets. One homestead even grows cassava (obtained from relatives in Zimbabwe) for household use; another has pineapple. Many households gather mushrooms and a variety of wild edible leaves commonly known as *imifino* during the rainy season, as these are valued for dietary diversity and nutritional value. Many farmers are also interested in trying new crops. For example, Mrs Mkhize would like to grow lentils; Mr Miya would like to grow garlic commercially, because his experiments show that indigenous garlic grows well. Other farmers seek yellow maize varieties, because of the perception that when grown without irrigation, they are sweeter for eating than white maize. Many have expressed an interest in growing citrus, in particular oranges (FN20052009).

In the southern hemisphere, the daylight hours are maximised from 20-23 September to 20-23 March, with the longest exposure to sunlight being about 21 December (Swinburne University of Technology 2011). The importance of this for crop production is to maximise rainfall and daylight hours for broadest leaf spread to available light throughout December. In Table 2.1, a summary of information extracted from field notes, observations and conversations is used to show how farmers utilise the available light and rainfall throughout the growing season. These dates and rhythms were confirmed by checking their accuracy with four key informants. The farmers say that the environment is changing. Whereas traditionally they would all plant in June and July, many farmers now only plant *amadumbe* in August, because they do not get rain as early as before. Others plant anyway, leaving the rhizomes ready in the soil to take advantage of the first rain.

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Maize and potatoes are planted as close to the first day it has rained as circumstances allow.

Table 2.1 Typical planting rhythms for field crops, described by EFO farmers⁹

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Traditional Rhythms			Pb	Pb		Pm/ Pm Pmz/Pmz	Pm/ Pm Pmz/Pmz	Pm Pmz	Pm Pmz Pb Psp	Pmz Pb Psp	*Pm *Pmz Pb	Pm Pb
<i>Amadumbe</i> available		X	X	Xt	Xt	Xt	Xt	Xt	X	X		

Pm = plant *amadumbe* (harvest 8 months later)
~~Pm~~ = not planting anymore: depends on rain patterns and micro-climate (some farmers do/others do not)
 Pmz=plant maize, Pmz not planting because of weather changes.
 Psp= plant sweet potato (from 3-6 months to harvest, depending on variety)
 Pb = plant beans & potatoes (Jan, Feb, + Oct -ready in Jan and used for seed in Jan/Feb)
 Xt = traditional availability of *amadumbe* (maturation takes 8 months)
 X=extended availability through on-farm experimentation (Mare 2009)
 *By November, must be finished planting *amadumbe* and maize

2.7.3 Beyond subsistence

Commercial production of taro (*amadumbe*) has a high water demand (1 750mm) under dry land cropping and tolerates a maximum temperature of 27°C. Despite being outside the official recommendation for precipitation, the farmers are currently successfully mono-cropping *amadumbe* for commercial purposes. One of their strategies for this success is to use soils at the base of slopes and also clayey soils that retain more moisture – indeed, soils that would be considered too wet (water logged) for other crops (Buthelezi 2010). My own probing echoed Buthelezi’s findings (from FN100108).

Where do you grow the amadumbe?

They (farmers) replied – in wet soil.

What colour is the wet soil? Any colour, but we get better yields from red soil than black soil - farmers seem unable to explain why.

How do you grow the crops in wet soil? In the areas of wetness, amadumbe are immediately rotated with maize. The exception is

⁹ Table compiled by Charity Maphumulo and Karen Caister from field notes and verified with Tholi Mkhize, Mrs Mbili, Baba Miya, Phumzile Mbeje, 12 November 2010.

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when the soil is dry enough, you can rotate amadumbe with beans, but there must be no signs of wetness. If you rotate amadumbe with maize you get no problems with the soil. You must never rotate amadumbe with amadumbe or potato – the plants die or are very small.

Two farmers made it very clear that there is a distinction between “field farmers” and “vegetable growers”. Vegetable growers produce *amavegie* for markets, in addition to, or instead of, subsistence crops. These plots are intensive, require permanent on-site water supplies and are smaller in area. Field farmers grow food crops for subsistence on a larger scale. Male farmers own and use their own draught power and seldom engage in *amavegie* production (conversations with Mr Z Mkhize and Mr Mbili). The female farmers hire draught power or tractors. Opportunities for saving effort or increasing scale of production are considered through the use of tractor or draught power and the hiring of labour for weeding. Female farmers struggle to plough because traditionally, the knowledge for working with cattle and handling the plough is not passed on to them. The ability to make an exchange for ploughing (usually cash) is particularly important for female farmers in their capability for production beyond subsistence. For male and elderly farmers, help with weeding and planting also becomes a significant factor of productive farming (conversations with farmers 2005-2009 Miya, Ndlovu, Wanda, Bhengu, Ntombela, Mkhize Z, Mkhize F, Mbili, Mabida, Tholi, and Maphumulo).

We found that land management strategies for increasing production of *amadumbe* beyond subsistence¹⁰ depended on reallocating current field space, adding to field size through unused land they already owned or acquiring the use of additional land through negotiation (Figure 2.12). Where land is not an issue, the limiting factors for expansion are the accessibility of manure, planting material and labour (Caister 2006).

¹⁰ I have deliberately not used the terminology subsistence level to refer to subsistence. I feel that this is an inappropriate classification in that the explanation is about being in command of resources, not pointing out the lack of them. This is a difference in attitude which impacts the way we think about resource management and policy. It focuses discourse and Discourse on what we have rather than what is missing.

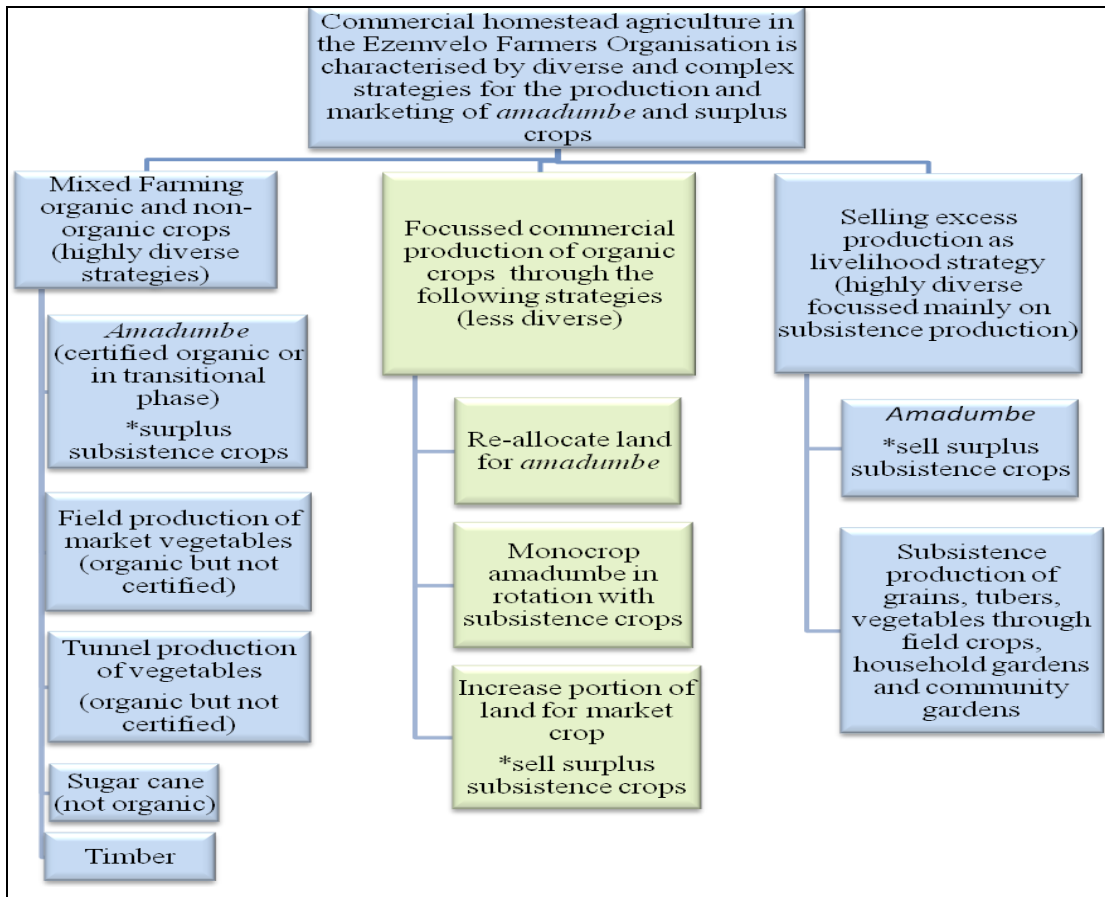


Figure 2.12 Chart of system adaptations for commercial production (compiled from field notes and observations 2005-2009)

2.7.4 Characteristics of farmers

Although this study is not about generalising or even comparing one group against another, understanding the diversity and similarities in nature and structure of the households is important for understanding typical homesteads and cohesive behaviour in traditional homesteading landscapes. Each homestead in rural South Africa has a unique composition in the complexity of social and economic forces acting on it. Farming homesteads of EFO members depict a range of these complex arrangements, including kinship ties. Common characteristics, drawn from discussion or observation and linked to literature, where possible, are that EFO homesteads:

- may potentially be linked to urban areas by family members who live elsewhere and who may send home remittances and children (FN19102007),
- may be linked to welfare structures such as disability, old age pensions and child grants (Machete 2004, p4);

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- and all rural homesteads are linked to the socio-cultural linkages of religion and social credit through the ‘*ubuntu*’ of neighbourly and kinship relationships (Rukuni 2007).

In general, individual research projects within the SANPAD Participatory Project (Buthelezi 2010; Mare 2009; Maragelo 2008) have identified the majority of EFO farmers as being between the ages of 36 and 75 years. Membership is dominated by females. One reason for which is that women tend to be responsible for cultivation and management of the home, while husbands seek work in nearby towns and economic hubs (Buthelezi 2010; Maragelo 2008; Denison & Manona 2007). There is a contingent young farmers in the EFO who are educated, but unemployed (Denison & Manona 2007). Their continued involvement in the Organisation, and in farming in general, is of concern for their parents. Their involvement is being encouraged through the training of willing individuals as internal inspectors (for organic certification standards), a ‘youth’ category for the year end farmer-of-the-year awards; and at this point an exclusive option for young females: ANTS mini-tunnel vegetable production.

In the following series of cameos, specific EFO farmers, some of whom were key informants for this study, are described because they represent a cross-section of arrangements that farmers have with their households, in terms of their subsistence and commercial farming activities.

Cameos of farming homesteads

*Gogo*¹¹ *Ntombela* (Figure 2.13) is an elderly farmer and widow who grows a wide variety of foods. Her adult children live in nearby cities and come ‘home’ on occasion to see her, bringing material resources, attending to traditions and enjoying home grown produce. Occasionally a grandchild or younger relative lives with her to help around the homestead, but otherwise she lives alone. She is a highly knowledgeable and skilled farmer and continues working her land because she has always done so. After joining the EFO, she has transferred her skill and knowledge into a business venture that benefits herself and her family. Gogo intercroops beans and maize and rotates mono crops like *amadumbe*, peanuts,

¹¹ Gogo is ‘grandmother’ in Zulu. She is referred to as Gogo Ntombela (and Gogo for short) by the community.

potatoes and sweet potatoes. Pumpkins are always slotted into spaces that are available and have rich soil around the homestead or maize fields (FN17012006).



Figure 2.13 Gogo Ntombela's farm and with grandson (photo: Caister 2006)

Mr Mbili and his two wives maGasa (from Ezigeni) and maShange (from kwaMsholoji) are highly successful subsistence farmers who have been able to produce steadily beyond subsistence for the market (Figure 2.14). Their homestead supports sixteen people. Between them they have three sons, three living daughters and seven grandchildren who include two sets of twins. Mr Mbili came from “across the hills” [“past Maphumulos before eze-Phambathini”] where the soil was so rocky that they could not farm. They requested land from the Nkosi and were taken into the local structures and granted enough land to produce food for their family. Mr Mbili’s first wife, maGasa, no longer works in the fields, but oversees household chores and minds the infant children and grandchildren. Mr Mbili and his second wife share the burden of producing food for their family and the excess for market. The Mbili children either are at school or find work off the farm. The sons assist with livestock care and ploughing and the daughters with planting and weeding and harvesting. Mr Mbili monocrops and is very strict about using crop rotations that include fallow times to ensure soil fertility and recovery. Mr Mbili has his own cattle for ploughing and manure production (FN200607).



Figure 2.14 MaShange (and chicken!) preparing to plant potatoes, Mr Mbili (husband) in insert (photo: Caister 2007)

^{*12}Mr Z Mkhize and his wife, maMshezi (from kwaMahleka) and four school-age children are highly successful subsistence farmers who have been able to consistently produce beyond subsistence for the market (Figure 2.15). MaShezi's eyes sparkle as she rolls them sideways at her husband when telling us that she has never 'worked so hard in her life' as she does now, 'every day', on their farm. The farm is her life and their youngest child, Msizi, a seven-year-old son, lives for the day that he will take over the farming. Mr Mkhize proudly suggests that maybe Msizi works the hardest on their farm. The two daughters hate farming, but work diligently and faithfully season after season. Xolani, the eldest son, and Mr Mkhize share the management of the family's cattle. Mr Mkhize is meticulous and strict about carrying out crop rotation and intercropping, which he uses as and when appropriate.

¹² * represents a key informant for this study



Figure 2.15 The Mkhize family sitting with Charity Maphumulo¹³-Xolani was with the cattle (photo: Caister, 20 June 2007)

Mr Mkhize keeps farm records and has dreams (the actual design is in his head) of an irrigation system from a perennial spring at the bottom of one of his slopes. Mr Mkhize's family are among the original families in the area and his wife is from kwaMahleka. Although many Mkhize men will not eat cow peas, maShozi has brought these with her and she grows them and this family eats them as well as soya beans obtained from previous transfer of technology engagements (FN200607_ZMkhize).

**Mr Maphumulo*, his wife and son have a diversity of farming and livelihood strategies (Figure 2.16). All three are EFO members and each farms individually, making their own decisions about their commercial farming activities. As a homestead they grow field crops such as those described in Table 2.1, for food security. The Maphumulos also have extended family around them and other business ventures, from which they can negotiate exchanges for extra manure, planting materials and labour.

¹³ Front row, middle. Charity is a project participant (soil scientist conducting participatory field trials for companion planting with indigenous crops) and usually operated as the translator for this study. We were laughing at the family dog who was being harassed by an indignant hen (with chicks).

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Mrs Maphumulo has her own *amadumbe* fields (and her own profits), as does Mr Maphumulo. Mr Maphumulo is an innovative experimenter, embedding new ideas and technologies within his practice of traditional knowledge and skills. He also market gardens *amavegie* and is actively involved in the organising and motivating of a local community vegetable garden during the winter months. While other children have left home and entered urban working lifestyles, Norman, a son, still lives in the family homestead. In addition to assisting with the household production, he has a banana plantation from which he sells (for personal income) at various local markets (compiled from a series of visits with Mr Maphumulo 2006-2009).



Figure 2.16 Mr Maphumulo's water harvesting tank and market garden (L); Normans bananas (R) (photo: Caister 2006)

Mrs Mbili has been farming since the EFO began. She has kept the fields productive and has run the farm as a business, while her husband worked at King Edward Hospital. Now that he has retired, he plans to take over the farm. Mrs Mbili is now free to devote her time and energy towards the crèche which she has established (Figure 2.17) (FN130309).



Figure 2.17 The children attending Mrs Mbili's creche (Photo: Caister, 20 August 2009)

**Lelephi Bhengu* was a traditional housewife whose day-to-day farming activity was a 'way of life'; something she did while her husband and sons worked in Isipingo (Figure 2.18). Since she has turned her farming knowledge and skill towards production beyond subsistence she has added sugar cane and produces *amadumbe* for the EFO. Her land is not 'happy' growing *amadumbe*, so she plants her commercial crop next door on Spongile Wanda's land. As she has become more knowledgeable and her contribution to the household through her farming activities has increased, her husband has noticed. Although he still works full time, he now contributes financial support to commercial production activities. Particularly useful for her is his payment for ploughing. As a woman, she does not have the knowledge of livestock handling skills and is completely dependent on a neighbour's availability for ploughing, or the random passing by of a tractor travelling to or from some other ploughing job.



Figure 2.18 Lelephi¹⁴ and Spongile (photo: Caister 2009)

**Spongile Wanda* is Lelephi's sister and her homestead is less than 1km from Lelephi's. Her husband has established a new family in town, leaving five children behind to be fed and educated. Her land is her only means of consistent support and subsistence farming is essential for their survival. For her, production beyond subsistence is dependent on the opportunity for labour saving or support, planting material and good rains. Weeding, mounding soil on *amadumbe* and harvesting can only be done with a hoe and sheer determination. But, if she has the cash, she will not hesitate to pay for ploughing to save effort. Over the period of the study (2006-to date) Mrs Wanda, has for spiritual reasons, entered into the training and qualification process of becoming a sangoma. This has required her to transfer subsistence-related resources (including money and time) to this process rather than her production beyond subsistence. When the process is finished, she will again be able to devote her time, energy and resources to commercial activities.

¹⁴ The author apologises for the worried look on Lelephi's face. She was concentrating on following the question being asked (in English), not being terrorised by the owner of the pointing finger!

The **wives of the Mkhize-Embo descendants* who are members of the EFO live in Ezigeni. They are referred to collectively in this cameo as the ‘Mkhize wives’ (Figure 2.19). Their husbands are employed off the homestead and their connection to the Embo-Mkhize lineage and the traditional way of life is still very strong. They farm in very close proximity to each other, actively engage in traditional sharing of labour and other resources, are called upon collectively to allocate time and resources for traditional cultural responsibilities. They are the only farmers left in the region who still practice the ceremony to the rain queen (Appendix 2-1). They are very active in the EFO, but their production beyond subsistence is more opportunistic than planned as they are not the sole decision-makers for their own activities.



Figure 2.19 Some of the Mkhize wives in traditional clothing (photo: Caister 2007)

Mrs Fielde Mkhize (a Wanda from kwaMsholozzi) is a widow farming the land she inherited from her late husband on the ridge in Ezigeni (Figure 2.20). Her household is basically a female household. She and her husband have adult children; five daughters and two sons. One son lives and works in Illovo, the other in Empangeni. One daughter lives and works in Durban. They all come home to help on weekends when they can. Four daughters remain in Ezigeni, one of whom works off-farm in Folweni. Only one of the daughters (*Zanele*) has a desire to remain on the land and be a farmer. Among them, the sons and daughters have produced seven grandchildren. All of these children live with Mrs Mkhize. In addition, two adult women, one a friend of the family and one a relative of

the family, have joined the household. In all, the homestead is home for 17 people. On this farm, everyone helps with farming activities. If there is no money to hire a plough, whoever is available (males and females) prepare fields, plant, weed and harvest. Even the grandchildren assist with breaking up clods and picking up debris in the fields (FN200607).



Figure 2.20 Mrs Mkhize in the middle surrounded by household members. Zanele is on far right (photo: Caister 2006)

*Roots of farming knowledge*¹⁵

The bulk of farming knowledge and understanding of the environment is absorbed as children (such as Zanele) work alongside parents in the fields. Generational transfer of seeds, attitudes, and expertise contribute towards farming as an informed way of life. Relatives may influence farming in the form of diverse planting materials and extension practitioners, or other interactions with external farming experiences, add to the local potential for adaptation and innovation. For example, the Vukani Community Garden Group said that before ‘Duncan’¹⁶, people purchased, but no one grew *amavegie* in Umbumbulu EFO (Ndlovu 2007). Land and labour pressure, availability of planting material, animal manure and rainfall patterns determine the final decisions about farming

¹⁵ Summarised by researcher from field notes of farm visits 2006-2009 and previous studies of the area.

¹⁶ The much-valued and previous Agriculture Extension Officer who passed away in 2004. Duncan actively canvassed community members, convincing them to organise and establish community gardens – for example, Vukani (which means ‘wake up’) in Ogagwini in 1993 (Ndlovu 2007).

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practice. Members of the EFO classify themselves as traditional farmers because they have practised farming since they were young, use kraal manure, plant by hand, weed with hoes, plough with draught animals (oxen or donkey) and rely on locally based resources (Maragelo 2009). Organic certification and the use of tractors is still considered a modernisation of traditional farming.

There is almost no real technological engagement with government departmental support for agriculture. Household cash scarcity ensures that very few inputs in the way of seeds, fertilizers, or poisons are accessed. When the farmers were finally allocated an Extension Officer from the public structure DAFF in 2004, after 'Duncan' passed away, they were so dismayed by the lack of capacity for supporting organic farming that they even suggested to Government that EFO farmers train the Extension Officers to assist organic farmers (Denison & Manona 2007).

2.8 Marketing system

2.8.1 SANPAD Participatory Project within the history of the EFO

The current SANPAD Participatory Project is the result of a long-term building of relationships between researchers at the UKZN and farmers who are members of the EFO (Figure 2.21). The first intervention in Umbumbulu focussed on transfer of technology¹⁷ and was initiated by Professor Rijkenberg and Professor Modi, both of UKZN. The second phase in the relationship initiated a farmer-researcher approach to investigate the organic production of traditional crops. This was funded by SANPAD.

The third phase of this relationship, the SANPAD Participatory Project 05/32 (2006-2008), initiated a farmer-researcher partnership for research to support the growing involvement in commercial farming. The aim was to address commercialising challenges and understand the impact of how market relations changed the way farmers grow their crops and whether this transformation affected social relationships between and within homesteads and villages that constitute the EFO (Table 2.2). This phase was also funded by the SANPAD and viewed the transformation of homestead agriculture to commercial agriculture through a social paradigm.

¹⁷ It was part of the Public Understanding of Science and Technology (PUSET Project) strategy to engage with society to create an increasing awareness of the importance of science and technology in the environments in which we live.

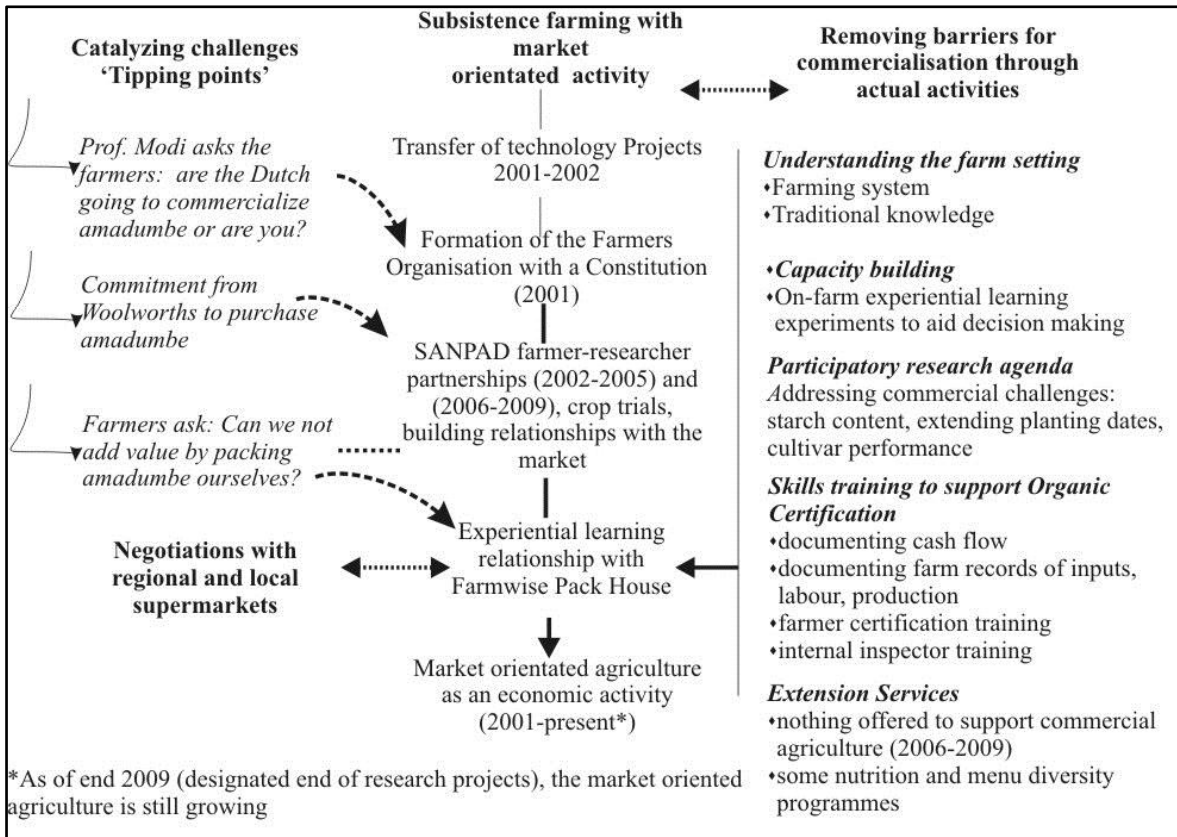


Figure 2.21 Evolution of commercial agriculture within the EFO

The ethos of the current SANPAD Participatory Project itself is expressed as an engaged form of scientific inquiry, whereby the relationship of the researcher with the community and other stakeholders involves negotiation and collaboration to produce knowledge surrounding the transformation of homestead agriculture to small-scale commercial agriculture (Modi 2005). The main question of the SANPAD Participatory Project was, could homestead agriculture be used as a model for rural economic development in South Africa? What sociological and agronomic lessons could be learned from the transformation of homestead agriculture by the production of organic, traditional and indigenous vegetables by the EFO in KZN, South Africa?

Table 2.2 Summary of outcomes of relationship between UKZN and the EFO

Phase of Relationship	Outcomes
PUSET – intervention project leader A T Modi 2001-2002	Establishment of the EFO, February 2001, 31 farmers Constitution established for the EFO Supplied PnP (2001-2002) with traditional crops (sweet potato, landrace baby potatoes, <i>amadumbe</i>)
First SANPAD funded project farmer-researcher relationship 2003-2005	By 2003, EFO membership increase to 54 farmers Organic certification of EFO subsistence farmers Woolworths’ Food Market gains its first supply of organically certified traditional vegetables Identification of some vegetables suitable for cultivation and marketing (wild mustard, <i>amadumbe</i> , landrace potatoes) Increasingly respectful relationship between Modi and the EFO. Modi elected as gate-keeper
Second SANPAD funded project participatory action research 2006-2009 (Appendix 2-2 outlines student research projects arising within the farmers’ agenda)	In progress with three years of funding Researchers are interested in both action and research. Researchers and community members participate in the change process and research takes place when the researchers reflect on the change process that occurs. The change process itself is important to generating the new knowledge and places the research within a specific living context.

2.8.2 Role of the EFO

The EFO provides a virtual connection point for external and internal linkages with the EFO farmers and their formal market. The executive committee of six core members (Appendix 1-2) represents the farmers for negotiations and communications with external players such as the Farmwise Pack House, Woolworths, academic institutions, government departments and NGOs. The appointment of Professor Modi from the UKZN as a ‘gate-keeper’ for the EFO and ‘mentor’ for the executive committee has been an internal decision taken by the farmers to protect themselves from exploitation. Awareness

Chapter 2. Characteristics of the research area

empowerment, negative experiences and demands on farmer forum space led the EFO executive to implement this gate keeping role (Stakeholder Meeting 21 October 2005; Denison & Manona 2007). Within the organisation, the executive committee seeks consensus on decisions that need to be made, accounts for finances and other organisation-owned resources, such as the tractor and truck management, and initiatives research.

2.8.3 Potential access to markets

With gravelled district roads linked to major tarred highways, the area has potential access to large urban food chains in Durban, Pietermaritzburg and South Coast towns (Figure 2.1). The Durban and Pietermaritzburg municipal markets offer an even greater range of market access to consumers and small, individual retailers. Sweet potatoes, maize, pumpkin leaves, spinach, potatoes and even *amadumbe* are highly sought after items. As informal marketing strategies, farmers are able to sell this farm produce through hawkers in economic centres (mainly Durban and Isipingo) and through other relationships formed between neighbours, relatives and places of employment.

2.8.4 Formal market relationship

The one formal market that the EFO farmers have is Woolworths. The market niche being occupied is for organically certified traditional vegetables. Woolworths has marketed this concept to consumers, partly in response to consumer demand, but also as an economically sensible response to corporate social responsibility. By attracting and supporting local small-scale agriculture, they are nurturing committed suppliers and contributing to local economic development (Personal Communication with Johan Ferreira, Woolworths' representative at Msunduzi Innovation and Development Institute, Mini Summit 13 October 2009).

Amadumbe reach the shelves of Woolworths stores through the packhouse 'Farmwise', located about 30km away in Pinetown. The production and cleaning (removing of dirt and 'rootlet hairs') of *amadumbe* occurs at homestead level, but the supply to the market is a continuously negotiated, systematic sequence of weekly collections distributed for ease of farmer access across the EFO farming area. Each collection point is a designated homestead representing an EFO ward (designated area of geographical convenience), where an EFO member is assigned the responsibility of supervising the correct bagging, identification, record-keeping and quality of produce. This homestead is referred to as the ward collection point (Figure 2.22). The EFO is responsible for transporting the harvest to

the Farmwise packhouse and each ward pays for its own transport. From the collection point, the *amadumbe* are taken to Farmwise, who sort, wash and record final group and individual farmer contributions. Substandard produce that does not meet Woolworth's criteria, is returned to the ward collection point and from there to the individual farmer. Each farmer has a code to identify his sales and a combined payment is deposited into the EFO bank account. Disbursement to individual farmers is managed by the EFO Executive and carried out by a designated person.

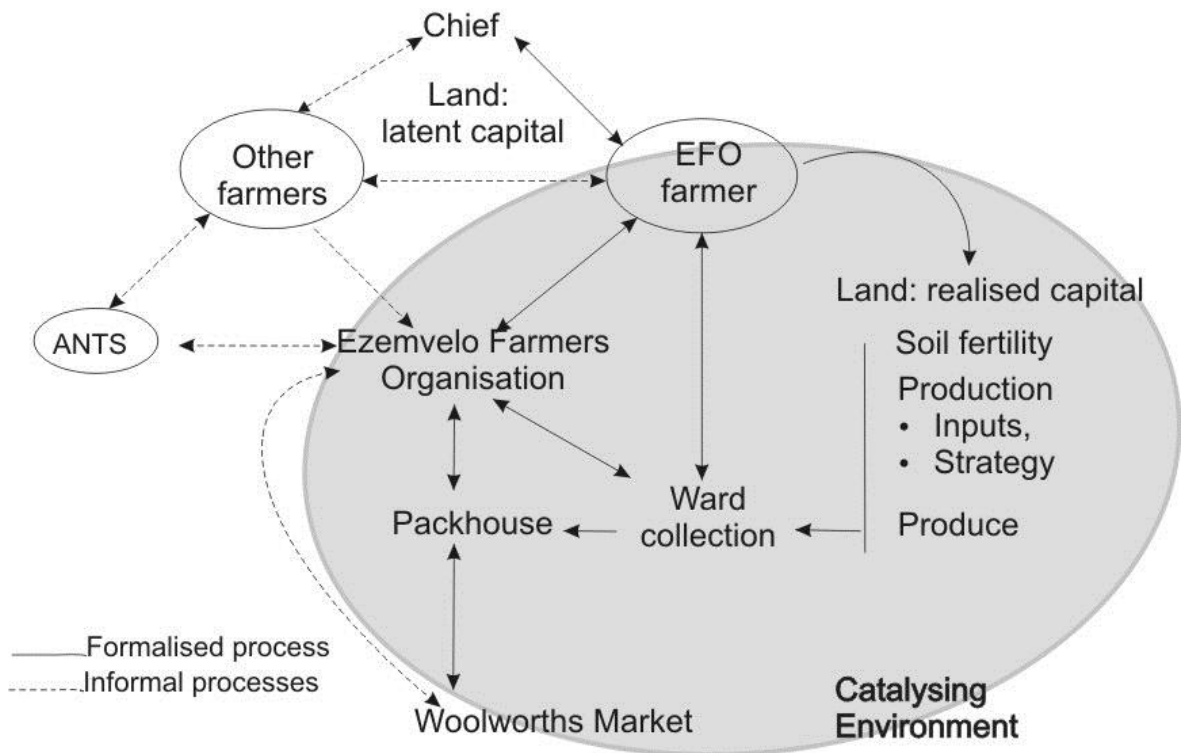


Figure 2.22 Diagram of stakeholder linkages providing access to a formal market for EFO farmers

At community level there is the formal organisation (EFO) to which all farmers submit their produce. The EFO allows for a co-ordinated supply of *amadumbe* to the packhouse (Figure 2.22). The process is structured with individual farmers collecting at EFO ward level, each of which takes its turn to supply the packhouse. Farmers know that each of them is being given an equal chance of supplying *amadumbe*. While some are concerned with supplying their quota of 'bavhs' (approximately 14kg of *amadumbe* and the equivalent of a large plastic or enamel basin), others are wondering how they can find new markets for reject material and material that exceeds their individual quota.

2.9 Summary

The livelihoods lens looks for the availability and access that human beings have to social, physical, economic and environmental resources for decision-making in connection with their livelihoods. In this chapter we have looked at the physical and social characteristics of a complex web of traditions and values in transition. It is impossible for an outsider to fully grasp the multi-layered perspectives and relationships that impact on farming decisions that would result in an 'objective' perspective. Therefore, the description is deliberately established within the context of learning about the context from the convergence of participants in the project: concurrent research projects within the SANPAD Participatory Project, the farmers own voices, and helpful perspectives from prior research that sought to understand the context rather than test prior constructs against findings.

The chapter has deliberately avoided generalised statistical data beyond a minimum for understanding the context. Instead, the chapter has introduced the political constructs of municipal roles and responsibilities that influence the study area, either by their presence or by their absence. Embedded in this statutory structure is the role of the Nkosi in processes and structures that determine access to land, agricultural inputs and resource management. A cross-section of the farmers who manipulate the environment to produce food for consumption and organically certified *amadumbe* have been introduced, as has the system which links local production to the external market. In this system, we noted the evidence of the ability for the farmers to self-organise through the structure of the EFO¹⁸. We see the behaviour of co-operation that allows for equitable ward level collection of market tonnage. And we see the capability for adaptation that allows for complex decision-making with regard to seasonal environmental trends, social forces that influence labour and use of knowledge and the recognition of opportunity in farming system responses to market availability. We also see the role of flexibility in attitudes and knowledge for decisions about resource use and in the community level collection system,

¹⁸ In as much as Modi operates as a catalyst for innovation and direction, the EFO itself has a synergy and self-directed organizational capacity in terms of the members in their roles, responsibilities, problem solving and innovations. The ownership of the future as the synergy created by membership in the EFO includes the commitment and influences of the SANPAD project participants, Farmwise and Woolworths alongside of the production itself.

Chapter 2. Characteristics of the research area

through which the farmers link the internal production of *amadumbe* to the external market.

Finally, what has been described is a productive region with shallow but fertile soils, a range of temperatures and precipitation that is uncertain, but generally conducive to rain-fed agriculture. It is a region that is feeling the tentacles of external pressure strangling traditional ways of living while, at the same time, offering opportunities for values and beliefs to be modified as new livelihood strategies are being explored.

3 METHODOLOGY AS THE THEORETICAL FRAMEWORK

The field within which this research has been conducted is in agriculture. Typically, scientific knowledge in this discipline has been authenticated by methods that measure actual sense experience and what others tell us about what is right or wrong. The constructivist view is that while reality may be independent of human thought, meaning or knowledge is always a human construction (Crotty 1998). In other words, scientific knowledge can also be mental constructs proposed by the researcher to explain what has been experienced. A practical problem for positivist sciences in acknowledging this type of research in practice arises in the differing supporting methodology. Where positivistic reporting documents meticulously what has been discovered, constructivism relies on seemingly abstract reasoning. In this chapter a theoretical underpinning from literature is provided as methodology. In the next chapter, the handling of the research data is described as a method.

3.1 A biased and situated context

This research is about interpreting radical democracy; a useful meaning in the re-negotiation of power relationships between producers and their market. It conceptualises the process of individuals who have determined, and continue to define, their future. The study aim was to find the best fit for ‘successful’ commercialisation, where ‘successful’ was defined by the stakeholders themselves and included the strengths and weaknesses of ‘matching’ homestead farming and commercialisation.

The events observed over the three years of the SANPAD Participatory Project were either formal activities (e.g. EFO farmer forum meetings) or associated activities arising from the SANPAD Participatory Project. The stakeholders were academic scientists committed to rural economic development and individual research agendas, farmers who consciously chose to re-allocate scarce resources towards the growing of commercial crops and a market that was sympathetic to small-scale commercial farmers. The opportunity being offered allowed the possibility of generating an emergent solution to institutionalising commercialisation as, season by season, decisions were made at the individual homestead level, collectively at community level and between internal and external decision-makers.

Chapter 3. Methodology as the Theoretical Framework

To be able to reflect on this emergent practice and make theoretical statements would require a systematic data collection and reflection process as agile as the context was complex. A constructivist approach for both research design and analysis would be sensitive to the complexity of small-scale agriculture and allow for the identification of meanings of concepts, nature of relationships and values important to the research participants (Soullier *et al.*, 2001). The urgent task was to identify and implement a systematic way of dealing with the data that could be defined, documented and would eventually result in abstract concepts (sufficiently abstracted from people, time and place). It would also need to represent the wisdom of the voices contributing to the dynamics of commercialisation thereby accounting for an understanding of the research situation. In order to complement or embrace the challenge of complexity and change, the methodology would have to respond to the context as well as be theoretically sound. However, as Glaser and Holton (2004, p9) asserted:

“the context must emerge as a relevant category or as a theoretical code like all other categories in a GT. It cannot be assumed as relevant in advance”.

According to Glaser and Holton (2004, p7) the method of GT is not concerned with professional strictures and professional expectations of a dominant paradigm, because *“the generated theory will be relevant”*. In spite of this, when writing about applied research, all of us in the agricultural sciences, whether looking at it from the positivist or constructivist paradigm demand that the context of the field be described beforehand. To this end, the category of context is described as a retrospective reflection on what emerged as the context through the spending of time (2006-2009) as a participant of the SANPAD Participatory Project and listening to what was going on around the researcher in the field. A narrative of the context, as observed by the researcher, has already been described in Chapter 2. The scope of the study is defined by the sensitising concepts described in Chapter 5. Acting as guidelines for the scope of the study, these concepts operate as starting points for defining emergent themes. Identifying an emergent focus helped the researcher to suspend her own definitions and sense what was important as strategy and outcomes of the commercialisation process.

3.2 A context that demands methodological flexibility

Commercialising activities required that farmers include external players in the way in which they had previously arranged the social and, to some extent, the hard, utilitarian

Chapter 3. Methodology as the Theoretical Framework

and functional side of their agrarian culture. The methodology used should interpret these new social relationships and interactions and give them meaning in terms of ‘successful’ commercialisation. If the definition of successful was not coming from a prior construct, it needed to be defined from within the context itself. Therefore, how homestead farming could be a successful model for rural development would only emerge as the farmers and market re-negotiated reality.

3.2.1 Building concepts around an emergent agenda

The research agenda of the SANPAD Participatory Project and its subsequent crop trials for improved soil, adaptive production technology and improved *amadumbe* cultivars, provided a focus for interaction around which decisions are made and the tolerance for, and inclusion offered to, Prof. Modi’s students (such as myself) to enter, observe, explore and work alongside the farmers. Researchers were not only committed to being facilitators, but also to being learners on an equal footing with farmers through shared experiences. In dealing with the complexity of learning about commercialisation in this context:

The methodology needed to be able to traverse the terrain between the scientific world (research process) and the social world (Mouton 1996, p26).

The participatory action learning of the SANPAD Participatory Project had been a useful strategy for developing management independence and addressing technical and organisational problems in the transformation of homestead farming to small-scale commercial agriculture (described in Chapter 2, section 2.8.1). Participation was a fundamental ethos of the relationship among stakeholders. Being ‘participatory’ meant that stakeholders had a voice in the process. Some of these voices came from within the community, both at an individual and collective level; some of these voices were external. The agenda that informed the learning between farmers, markets and researchers then, was both participatory and catalysed by specific personalities. The emergence of conceptual inductions about the learning would need to weave around the dynamic and iterative processes of participatory action research and learning taking place.

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3.2.2 Drawing concepts from emic issues

The focus in this study of issues relevant to the study population (emic issues) is a characteristic of ethnographic intentions to explore the world views and values of the community under observation (LeCompte & Goetz 1982). In ethnographic work, the researcher generally attempts to avoid impacting the context. In contrast, the situation under investigation was about a deliberate intention to change, whereby each researcher was invited and expected to be a part of that change process for the duration of their field work. The situation required the researcher to be able to keep an open mind as participants solved problems and innovated in response to markets and increasing demands on local resources. It required that the researcher be active in sharing ideals and values of other participants in the tensions exposed between change and re-establishing order. It required focussing on the actors as agents of change, enabled or constrained by forces impacting on the production of commercial crops. In order to encompass these realistic, yet methodologically contradictory, expectations the methodology needed to allow the researcher to see and hear the insider views in order to interpret what was seen and heard as a participant observer in the production of useful knowledge.

Typically, in agricultural science, we formulate a research hypothesis on theoretical grounds and test it through research activity. Scientists are searching for an objective truth. In the process of commercialisation, however, this research was conceptualising a solution that was being defined by an on-going transformation within the context. The knowledge of how to be commercial was being defined by social processes and constructed through facilitated experiences. A method was needed which would match the study purpose: to observe the impacts of activities within the project and define relationships and processes as concepts, explore possible evidence of a new way of thinking and provide the flexibility to interpret the process of transformation as theoretical concepts representing the located reality. Already, with the move from positivistic objectivity to naturalistic inquiry, the potential for incorporating 'process as the enquiry' allows for knowledge to be constructed and sustained by social processes (Charmaz 2005, p508).

3.3 Responding to the context through Constructivist GT Ethnography

A GT supporting a constructivist approach for both research design and analysis would be sensitive to the complexity of small-scale agriculture and allow for the identification

Chapter 3. Methodology as the Theoretical Framework

of meanings behind concepts, nature of relationships and values important to the research participants (Soullier *et al.*, 2001). Grounded theory is particularly suitable for research that allows for thinking and creating knowledge while following emergent practice through open-ended action (Kristinsdóttir 2001).

Although there is a great internal debate surrounding the relationship of data and theory, GT has survived conflict to emerge as a classic methodology for systematically generating substantive theory grounded in empirical data (Prissle 2006, p686). A challenge with GT from the positivist perspective is that in its abstraction from the data, it is 'not concerned with understanding the world of the research participants as they construct it' (Glaser 2002, p3). But from an ethnographic perspective we most definitely are. Over the decades since Glaser and Strauss's classic positivist approach, GT has evolved through the work of Kathy Charmaz (2006) into a constructivist paradigm. The approach from a constructivist tradition assumes that human beings act as agents for change in social processes that are open-ended, emergent and situated in real-life problems (Charmaz 2006). Because meanings are subjective and change as an individual's experience or number of interrelationships changes, knowing how people define their situations and the significance that is attached to them gives the researcher an understanding of the participant's worldview (Stevens & Treurnicht 2001). These meanings influence the way patterns are identified. Abstracting concepts with the aid of GT as method balanced the perspective of insider views and concerns with concepts that are comprehensible to individuals outside the local situation.

The value of this knowledge lies in the researcher being able to identify actual or potential conflict, where action and meanings within that worldview would contradict social, economic or political interests. Awareness of these contradictions may lead to more effective engagement between farmers and the market. Generating a theoretical model from data surrounding decision-making would also pose a shift in the focus on agricultural development, from technology and environment to the elements of belief systems and values that support long-term viability of both culture and agricultural practice. The theory itself should expose tensions between change and re-establishing order, with a focus on the actors whose agency is enabled, or constrained by forces affecting the marketing of CDR agricultural produce.

One of the criticisms of situated research is that it cannot be generalised. Jules Pretty (1995, p11) points out that what has been identified as sustainable in a particular

situation, where individuals have agreed to what indicates sustainability, may not be meaningful when used as measurements for sustainability at regional, district or national levels. When generating a GT, the data is used to identify indicators for concepts, therefore grounding theoretical concepts in observations. However, it is the concepts (not the data) which form the increasingly abstract theory (Draucker *et al.*, 2007). Because of analytical conceptualizing, GT transcends objectivity through linking meanings behind the data to the emerging analysis (Glaser 2002b). In addition, because of the eventual theorizing of the data, GT allows for a broadening of the scope of enquiry (Charmaz 2005).

3.4 Constructing a theory

If we simply look at the definitions in the Oxford dictionary for phenomenology and philosophy, we see that developing philosophy in the research process demands a set of beliefs developed through a deepening consciousness of the values and reality about something occurring in a particular sphere. As the theoretical roots for 'construction' as research terminology, being conscious in a socially constructed action is not something that stands alone or above the experience (Holstein & Gubrium 2005, p484). Therefore, when we look at the sociological model as the nature of scientific research in this study, the whole that we are looking for is how problem-solving occurs as a social activity (Mouton 1996, p17). From the very beginning, consciousness exists as part of what it is becoming conscious of (Holstein & Gubrium 2005, p485). From this, one must assume, that in grounding theory, the concepts and relationships developed will be in some way a reflection of the process of an increasing consciousness about the whole.

In any context, there are multiple worlds of knowledge, values and beliefs that co-exist. In the present research, there was the variety of perspectives among the farmers themselves. There was also the distinctive knowledge frameworks that each of the participants held (for example economics, resource management, rural development, soil science, crop production, marketing). With the many alternatives for interpreting the nature of what is happening, it is the researcher's own choice of alternatives relative to the nature of her own experiences which are included in the categorisation of data that enriches and then delimits the experience towards a focussed theory.

The post-positivist tradition of mixing methodologies and perspectives in knowledge production employs the disciplined use of mixed voices to reflect on the subjective nature of a situated context. Reflexivity therefore as a researcher's tool relies on critical

Chapter 3. Methodology as the Theoretical Framework

subjectivity and self-awareness in moving between the context and the abstracted conceptualisations of what is being observed and understood (Guba & Lincoln 2005, pp191-215). Treating the research objective as a phenomenon relies on the subjective experiences of the researcher and therefore, reflexivity requires that the researcher not only be conscious of the self¹ that is brought into the research field, but also the self that is emerging because of engaging in the research setting (Alcoff & Potter 1993). To re-iterate, inductive theory-building in the social sciences is the result of interpreting the perceived empirical reality and reducing the information to a system of abstract concepts representing the fundamental *hows* and *whats* of the phenomenon (Richards 2005, pp128-133; Glaser & Strauss 1999; Mouton 1996).

To avoid the trap of developing concepts that are nothing more than definitions said Weick (1989, p517), any theory-building process “must be designed to highlight relationships, connections, and interdependencies in the phenomenon of interest”. The often loose connections between abstract concepts and empirical data require a theory-building process that weaves back and forth between intuition and data-based theorizing and between induction and deduction (Bourgeois 1979; Weick 1989). In her defence of constructivist GT, Charmaz (2006, p20) points out that any theoretical dimension of the studied world is constructed through our engagement both past and present with people, perspectives and research practices because we are part of the world we study. This brings in an ethnographic dimension to enquiry, because we see then that making sense of what is experienced is the ultimate goal of constructing theory. Practically, making sense means that the researcher must focus on the ways in which the actors within the context understand, organise and convey reality in their daily lives. In this study, the nature of the democratic generation of social order from the ordinary activities of conscious decision-making within circumstances is key to understanding how commercialisation assists the EFO farmers to sustain a self-determining future.

The activity for the researcher, who intends to achieve a GT of a particular phenomenon, is clearly faced with three processes. To begin with, there is the selection and processing of the values and actions observed in the context through the researcher’s mental model. Then there is the abstracting of concepts from this

¹ The self that historically, socially and personally creates our standpoints with which we enter the field (Lincoln & Guba (2005, p210) describing Alcoff and Potter (1993).

interpretation and developing a system for these as a theory underlying the sphere of activity. Finally, the construction of theory itself places these concepts in relation to each other as a system providing guidance for addressing the fundamental concerns and contested ideas that arise from a practical situation as part of an academic exploration. Classic GT, asserted Glaser (Glaser & Horton 2004, p3), is:

“simply a set of integrated conceptual hypotheses systematically generated to produce an inductive theory about a substantive area. Classic GT is a highly structured but eminently flexible methodology. Its data collection and analysis procedures are explicit and the pacing of these procedures is, at one, simultaneous, sequential, subsequent, scheduled and serendipitous, forming an integrated methodological “whole” that enables the emergence of conceptual theory as distinct from the thematic analysis characteristic of QDA² research”

3.5 Grounded Theory as analysis for constructing a theory

How one actually ‘does’ GT is much more difficult to establish. The concepts and procedures of GT defined by Glaser, Strauss and Corbin are not a set of precise methodological rules, but they provide the researcher with essential elements for the recording and analysis of data and terminology that is useful for communicating the systematic nature of developing theory (Table 3.1).

Conceptually, the process of inducing a GT is a complementing, iterative system of purposeful data collection that combines with reflective interpretation, working its way systematically through three levels of abstraction: description, analysis and interpretation. As a strategy, the process documents the generation of a theory identifying critical concepts that are sensitive to the context and allows continued dialogue confirming the relevance of these concepts and how they will be transferable into other contexts. Drawing a diagram of this process helps to see the inductive nature of the strategy (Figure 3.1).

² QDA is an acronym for qualitative data analysis

Table 3.1 Essential elements of GT methodology (adopted from Glaser & Holton 2004, pp11-24)

Element	Characteristics
Theoretical sensitivity	Hypotheses and concepts come from the data and are systematically worked out in relation to the data during the course of the research.
Get started	The best way to do GT is to just begin. Flow with the main concern and prime mover within the context. Be open and listen to what is actually happening.
All is data	GT can use any data – the researcher must figure out what type of data it is.
Use of literature as data	GT treats literature as another source of data to be integrated into the constant comparative analysis process once the core category, its properties and related categories have emerged and the basic conceptual development is well underway.
Open coding	<p>This is the line-by-line identification of substantive codes as they emerge within the data: These questions are constantly asked:</p> <ul style="list-style-type: none"> • What is this data a study of? • What category does this incident indicate” • What is actually happening in the data? • What is the main concern being faced by the participants? • What accounts for the continual resolving of this concern? <p>As new incidents are encountered, new categories emerge and new incidents fit into existing categories, helping to see the direction in which to take the study by theoretical sampling towards relevant concepts that fit and work with the particular problem.</p>
Theoretical coding	Empirical indicators for concepts are selected from within the data. These selections move from the empirical level to an abstract level by re-grouping them as condensed abstract indicators of codes which relate to the scope of the data. These theoretical codes conceptualise the underlying patterns.
Theoretical sampling	The simultaneous process of collecting, coding, analysing and choosing where to find more data to compare with what one has in order to develop theoretical concepts. Collection cannot be planned in advance; the direction is dictated by the development of the theoretical concept in light of the chosen theoretical purpose and relevance.
Constant comparative method	Involves comparing incidents to incidents to establish underlying uniformity and its varying conditions. Concepts are compared to more incidents to identify new theoretical properties of the concept and more hypotheses. Concepts are compared to establish which concepts best fit together as characteristics of the same set of indicators and which are integrated as hypotheses between the concepts.

Table 3.2 Essential elements of GT methodology (adopted from Glaser & Holton 2004, pp11-24)

Table 3.3 continued.

Element	Characteristic
A core variable	A core category that eventually emerges from incidents and category building. The core variable will account for most of the variation around the concern or problem as the focus of the study. Data collection and coding efforts are focused to explain how the main concern is continually resolved. Its primary function is to integrate the theory and render it dense and saturated. The criteria for establishing the core variable is that it is central, relating to as many other categories and their properties as possible and accounting for a large portion of the variation in a pattern of behaviour.
Selective coding	Selective or delimiting coding to only those variables that relate to the core variable in order to focus the theory development.
Delimiting	Selective data collection and analysis relevant to the emergent conceptual framework that focuses categories and theory. Integrating the theory around the core variable through delimitation allows reduction of the whole into a reformulation of the theory with a smaller set of higher-level concepts
Pacing	Little increments of coding, analysing and collecting data cook and mature and then blossom later into theoretical memos. Significant theoretical realizations come with growth and maturity in the data and much of this is outside of the analyst's awareness until preconscious processing becomes conscious. The analyst must be patient, surviving the apparent confusion and taking whatever amount of quality time is required to do the discovery process.
Memoing	A continual process of writing and conceptual rendering that raises the data to a conceptual level and develops the properties of each category that begin to define them operationally. Memos present hypotheses about connections between categories and/or their properties and begin to integrate these connections. Memos also begin to locate the emerging theory with other theories with potentially more or less relevance. Memos help to direct theoretical sampling as they point out gaps and connections in existing analyses.
Sorting and writing up	Once the researcher has defined the categories, the numerous memos are sorted and integrated in relation to the core category, its properties and related categories. This sorting provides a theoretical outline or conceptual framework for the articulation of the GT through an integrated set of hypotheses. Sorting can start anywhere. By doing it, the researcher is establishing an idea in one place that is carried forward until, at the cutting off of the study, the fewest possible concepts with the greatest possible scope explain sufficiently how people continually resolve their main concern with concepts that fit, work, have relevance and are saturated.

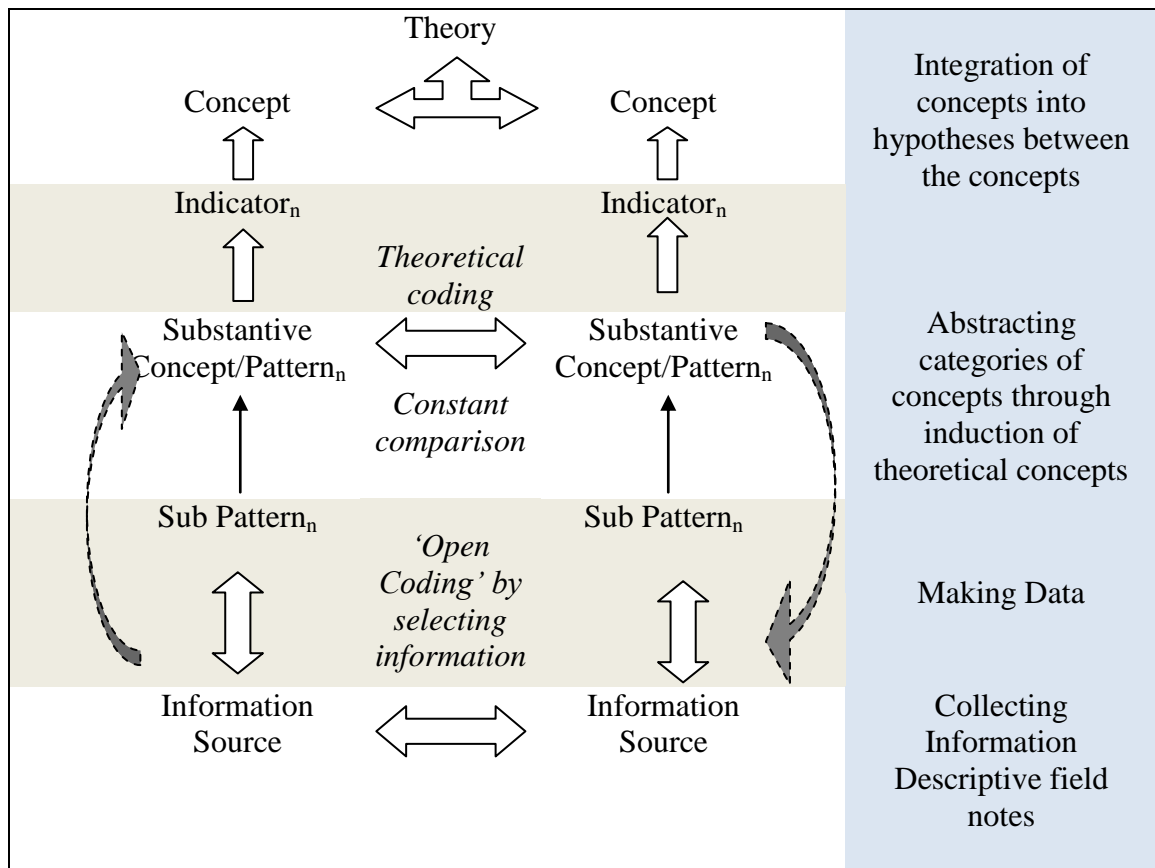


Figure 3.1 Inductive process of producing GT

Grounded theory as an inductive process uses constant comparison as its core analysis strategy (Kelle 2005). In constant comparison, one interview or set of information is compared to another in order to begin to develop a feeling about what is happening (Dick 2005). Comments or direct extracts from the information (e.g. field notes), such as a quote or a quote within a paragraph (the context), are 'noted' to identify this growing understanding. This is referred to as coding and the selected information now becomes coded data used to develop concepts (Richards 2005). In the present study, relating data was collected into sets of nodes. As the researcher 'codes', thoughts in the form of 'memos' may be generated as records of observations and understandings of linkages between information within a category, or between other coded sets. Examples of reflective memos are used as supporting evidence in Chapter 5 (e.g. Figure 5.1). Sometimes these reflections require further illumination (Richards 2005). There are two ways to respond to this. The researcher may refer back to an informant in the field to probe the point of interest (theoretical sampling to saturate your concept formation) and/or you can engage with literature which brings together the worlds of the participants and the researchers for reflection (reflective essays) (Charmaz 2006;

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Richards 2005; Glaser & Strauss 1967, Pandit 1996). As you continuously collect more data it is compared to the 'notes' already made and further relationships are added or combined with existing categories.

Coded information is eventually grouped by 'themes or categories' as an understanding of the situation begins to reveal patterns and relationships. Within the categories/themes, memoing, drawing diagrams and models of the coded data based on the patterns help identify characteristics or indicators of the concepts. The concepts, and the relationships hypothesised between them, become the propositions eventually presented as the substantive theory.

Summary

It has already been reasoned that GT is particularly suitable for research that allows for thinking and creating knowledge while following emergent practice through open-ended action (Kristinsdóttir 2001; Charmaz 2005). The focus in this study of issues relevant to the study population is a characteristic of ethnographic intentions to explore the worldviews and values of the community under observation. In ethnographic work, the researcher generally attempts to avoid impacting the context. In contrast, the situation under investigation was about a deliberate intention to change, whereby each researcher was invited and expected to be a part of that change process. The research product generated resulted in a theoretical model for the emergent solutions. By combining ethnography with the abstractive interpretation of GT, the methodological approach allowed for a balance between emic and etic concerns. The complexity of social agronomy was accounted for while revealing the core variable as systemic integrity. This was identified through i) the rational responses made by farmers in dealing with uncertainties precipitated by change, ii) the open-ended process of emerging ideas and practice, iii) the co-construction of knowledge and meaning through facilitated learning experiences and iv) the relationships and tensions between values and beliefs in the social agronomy for commercial production. The next chapter describes how the elements of GT were used as the process for defining the core variable and its related concepts.

4. GT AS THE PROCESS OF THE RESEARCH

Each researcher has a unique approach to the process of theory building when using GT. In this research, there were three layers involved in handling the construction of knowledge. Firstly, there was the exploration by the researcher or conversation with the situation. This required experiencing the context through SANPAD Participatory Project activities, listening to the farmers and recording observations pertinent for the study while in the field. Then there was a conversation within the realm of the scientific community. In between lay the reflexive accounts by the researcher as increasingly abstract renderings of the everyday experiences in the relationship between the farmers, the market and the market-orientated activities of farmers.

Rigour in GT requires establishing an explicit pattern to relate the intuitive sensing of the researcher with the data-based theorising that is core to the GT process (Glaser & Strauss 1997). In the flexibility of the constructivist approach, it is even more important for the researcher to communicate the journey from empirical data through the emergent and iterative process of constructing theory (Charmaz 2006, pp8-10). This is because of the inherent uniqueness of the methodology that is compiled, and because of the influence of the researcher in interpreting the empirical context.

No research in naturalistic settings, when repeated, will ever produce exactly the same results. However, generation, refinement and validation can be repeated if the techniques are clearly communicated. To this end, Chapter 4 has two parts. In the first section, how data was collected and handled¹ for data-based theorising is described. Here, the data collection and analysis procedures are described as parts of a whole, from the continuous cycle of collecting and analysing research material. The second section describes the method of learning on the part of the researcher as the underlying nature and process of how sense was made of the information. This learning and sense-making defines the researcher as the 'instrument' of the research. It makes explicit the inclusion of the subjective experience of the investigator into the research framework, thereby assisting in replicability of the analysis strategy and how the researcher sought agreement from the academic conversation on the description and conceptualisation of events. Reflections by the researcher on these processes may be of interest to future

¹ A term used by qualitative researchers for the collection and treatment of data.

students and are presented from a first person perspective, before writing up the research in Appendix 4-1, and a final reflection in the form of a publishable article Appendix 4-1a.

4.1 Handling data: techniques for coding, comparing and sorting

We saw in Chapter 2 that the researcher, who intends to achieve a GT of a particular phenomenon, is clearly faced with three analytical processes. To begin with, there is the selection and grouping of the values and actions observed in the context through the researcher's mental model. Then there is the abstracting of concepts by developing a system to crystallize the observations into clear patterns of concepts. Placing these concepts in relation to the core variable² shapes the theory for addressing the fundamental concerns and contested ideas that arise from within a problem-solving context.

4.1.1 Acquiring data

The first question a positivist paradigm is going to ask of a qualitative study is what is your sample? What limits your sources and ensures that it is relevant to the context? The sample cannot be predetermined in an emergent process. However, one can describe it retrospectively. In addition to the people involved as sources of data (informants), we can say that the phenomenon of commercialising traditional agriculture was the core focus, while the sensitising concepts determine the scope of the study. The unit of study in this research was the formal community structure known as the Ezemvelo Farmers Organisation. Because of its collective nature, it is in fact made up of people skilled in traditional agricultural knowledge and subsistence practices and who share the common goal and set of values fundamental to the EFO. As individuals they are themselves members of a variety of households, extended families and tribal authority structures which determine the social institutions and cultural milieu within which the EFO operates. Individual farmers were used as key informants³ because of their commitment and interest in the SANPAD Participatory Project activities, their accessibility to the researcher and/or because they represented a cross-section of homesteads interested in commercial agriculture or included in other studies being carried out by other research in the Project. All information, both written and verbal,

² Defined in Chapter 3, Table 3.1

³ The reader may remember that the farmer cameos of key informants were marked in Chapter 2 with an asterisk (*).

was opportunistic or selected because it contributed to theoretical saturation. The extended nature of engagement by the analyst in the field provided opportunities for confirming accuracy or testing understanding and also for recording the anticipated expectation of a particular decision with the actual unfolding and subsequent understanding of events in the commercialising process as they occurred.

The presence of the researcher in the field allows for the collection of information. The researcher is trying to understand the ‘wholeness’ of the phenomenon and so everything becomes potential data. What one sees, feels, smells, becomes conscious of and hears all add to the volume of information one is bombarded with and tempted to record. The researcher has to learn quickly how to focus information-gathering without ignoring or shutting out relevant data. The selection process of what becomes data begins in the field. What is recorded? The use of GT or any method of making data requires the focussed selection of ‘pieces’ of that information in order to generate data. Therefore the writing up (digitising) of field notes and records and cataloguing of photos and diagrams became the first stage in theoretical sensitivity.

Collecting information

Characteristics of the GT process are the continuous cycle of collecting and analysing data. In what may also be termed an ‘emerging’ grounded methodology, the participatory nature of the project itself determined a sequence of activities that unfolded as regular opportunities to enter the field for observation, participation and probing through the use of interviewing skills (Figure 4.1).

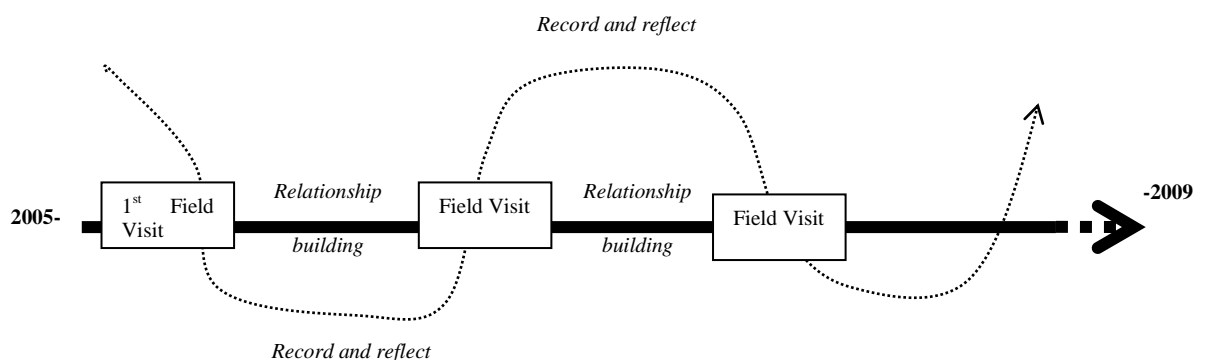


Figure 4.1 Iterative engagement with the SANPAD Participatory Project between 2005 and 2009, providing opportunities for data collection

A variety of ways of collecting information was utilised. Primary data arose from field notes of participant observations, individual and group interviews, casual conversations

and interactions and survey questionnaires which were used as tools to collect information. It was the systematic unfolding of events which gave the data a dimension in terms of time, slowing down the research which helped develop theoretical themes or categories arising from relationships and decision-making patterns⁴. The individual activities of collecting data and making choices about the combination of method and instruments to use were unique to each engagement within the research field (Table 4.1). A data log of digitised field notes is supplied in Appendix 4-2, which provides an account of the events referred to in Table 4.1.

For example, homestead visits entailed observation of trial sites and/or probing discussions with farmers about questions arising from previous visits or sparked by an immediate observation. These questions would invariably revolve around farmer world views, practice and learning from the agricultural activities relating to the commercial aspects of farming. Attending monthly EFO forum meetings produced data through the minutes which documented collective decision-making. Participant observation at these meetings generated information (field notes) about the airing of emotions and how information was collectively gathered and shared. Group interviews and workshops provided opportunities for the farmers themselves to discuss specific issues prompted by the researcher and a platform to express their concerns, views and knowledge in language that they were comfortable with.

Factual data was obtained through previously published research focussed on the farmers of the EFO, from minutes of farmer forum meetings, the EFO constitution, individual research team member data and workshop reports. Secondary empirical data was accessed for the inductive process through the research results of other project team members. Two doctoral, three masters and two honours research projects contributed research data that was treated as owned by the project and accessible to the student researchers. This enabled specific reflections between primary data and the work of colleagues when appropriate.

All field notes were typed as word documents and imported into NVIVO as a log of information from the field (Appendix 4-2). NVIVO also allowed the digital management of open coding with the large quantity of data. An example of this process is given in Appendix 4-3, 'Open coding of digitised field notes'.

⁴ Contributed to "pacing", as referred to in Chapter 3, Table 3.1.

Open coding and theoretical sensitivity

The next phase of theoretical sensitivity is the grouping of the information into manageable and representative collections of related pieces of evidence. In essence, the core process used for collecting data can be described as an iterative cycle that revolved around entering the field, logging formal field notes and information records in the NVIVO data base and pursuing pieces of the information that showed promise for theory development (Table 4.2). Open coding captured comments and decisions that showed values, beliefs, patterns and assumptions. Once the open coding had been completed (Appendix 4.4), the researcher took forward only the coded concepts themselves and used a visceral paper-based process to begin the analytical grouping and comparing of concepts. This process was the core process for analysis of data and is described in section 4.1.2.

Table 4.1 Iterative cycle of data collection and handling

Place	Methodological Activity	Data Handling
In the field	Participate (experience), listen, observe and record while in the field.	Selective collection of complex, context specific information records.
Upon return from the field	Re-write raw data into NVIVO documents to form a log of field notes.	Formal logging of information records using *.
Between visits to field	Ponder the significance of information by looking for patterns of values, beliefs, capabilities (skills, theory, attitudes and behaviour) and relationships. Selecting and deselecting coded information as patterns and relationships were being recognised.	Generating data (selecting and comparing from information sources); generating memos, annotations, background material and reflections – adding these to the data base.
	Concept modelling, including comments and insights from colleagues. Memoing (Table 3.1) through graphics and writing. Reflective writing.	*Selection of information from records to use as evidence of analysis.
	Exploring literature for existing theory, conceptualisations and similar research experiences.	
	Re-formulating focus of probing to take advantage of next visit to field.	Shaping of concept development through theoretical sampling.
Return to field	Participate (experience), listen, observe and record while in the field.	Add to existing field log and data.

4.1.2 Building concepts through constant comparison

As soon as any information was collected, analysis would begin through the use of memo writing, reflective essays and selecting words, phrases and paragraphs (information plus its context) as data for concept development. Quotes and observations which sparked a theoretical response or showed promise for further analysis were marked and ‘named’ (coded), in order to identify categories of codes. Concepts were built through grouping codes to identify characteristics, patterns and tensions that served as indicators of the abstract concepts themselves (Figure 4.2). Tapping into the comfort zone of visual communication⁵, a white board was used to post coded information using paper slips on which the patterns and concepts were written so that they could be seen, pondered over, added to and removed. They also provided a visual point of discussion, adding a wider perspective and chance to test and expand interpretations and ways of seeing the phenomenon with fellow academics, students and visitors who entered the researcher’s office.

The purpose of the analytical process was to manipulate data in order to generate a theory from empirical categories about what had happened within, and between, the interactions of commercialisation activities between Oct 2005 and Dec 2009. Analysing the information collected required several levels of activities. Invariably these activities were neither discrete nor sequential, as shown in Table 4.2.

Another technique involved building on a pattern identified originally through the grouping of open codes. A statement or observation in the field would be written down on a blank flip chart sheet. Relevant insights and voices would be added as part of an expanding diagram. Meaning was constructed around the grounded data by filling in information (i.e. looking up theoretical concepts, background information and current research) other content from field notes and conversations with academics in the discipline. In the following example (Figure 4.3), the concept of learning for sustainability (identified as one of the yellow patterns in Figure 4.2) is being developed.

⁵ The researcher’s completely paperless children refer to her as the “digital immigrant”

Table 4.2 Researcher-farmer interactions of the SANPAD Participatory Project providing raw data for selection in this study (detail of field notes supplied in Appendix 4-2, NVIVO Data Log

Category of interactions in the setting	Type of interaction	Tool for data collection	Data arising from interaction
Monthly meetings (first monday of every month)	Group decision-making and reporting	Participant observation minutes	Field notes Records of decisions
Farm visits	Household interviews (2006)	Semi-structured interviews with family groups of household systems	Flip chart summaries of household information Field notes
Data collection questionnaires	Field trial visits (2006-2009)	Probing conversations	Field notes
	Community garden interviews (2007)	Semi-structured group interviews Probing conversations	Time lines Field notes: *
	Farming Systems interviews (2008)	Questionnaire	Field notes:**
	Soil names and indigenous knowledge group interview (2009)	Questionnaire Probing conversations	Qualitative data Field notes***
	Farming technology questionnaires (2009)	Questionnaire Probing conversations	Qualitative data Field notes
EFO member workshops	Marketing workshop (18 April 2008)	Breakaway group discussions Group feedback	Flip chart summaries (translated later into English)
	Reflection workshop (27 Nov 2008)	Breakaway group discussions Group feedback	Flip chart summaries of breakaway group discussions Field note summaries of consensus discussion
* Researcher assisted with data collection for masters research: Towards an understanding of the relationships between homestead farming and community gardens at the rural areas of Umbumbulu, KwaZulu-Natal (Ndlovu 2007). This provided access to questionnaires on household information about interviewees' farming systems and data for triangulation.			
** Researcher assisted with data collection for masters research: Traditional agriculture and its meaning in the lives of a farming community: the case of Embo (Maragelo 2008). This provided access to questionnaires on household information about interviewees' farming systems and data for triangulation			
*** Researcher assisted with the data collection for masters research: The use of scientific and indigenous knowledge in agricultural land evaluation and soil fertility studies of Ezigeni and Ogagwini villages in KwaZulu-Natal, South Africa (Buthelezi 2010). This provided access to questionnaires on household information about interviewees' farming systems and data for triangulation.			



Figure 4.2 Grouping codes for types of activities (white slips) around patterns (yellow slips) linked to emerging theoretical categories (orange)

As an example of the process, Figure 4.3 documents the development of the increasingly crystallised theoretical category of Learning for Livelihood Sustainability (detailed in Chapter 6, Table 6.3). Experience in the field revealed that farmers would push the boundaries of their system, for example by extending a field for commercial production as the opportunity arose. They would not go into cash debt, however, through a loan to plough and plant all of their available land. While pondering the meaning behind this behaviour, an article about human security added a dimension to the concept; that the human condition or capability is at the intersection between security and development (UNDP 2009). One could document how the farmers would push a boundary (for example plant a larger proportion of land for commercial production), allow the system to re-stabilise (match labour and other resources available) and then push the boundary again through the next opportunity (such as the increase of available resources). This led to asking the question: what incentives would motivate the farmers to push their boundaries and what role does science play in the process? This particular beginning led to the consciousness of ‘tapping into the factors

of social cohesion and factors that stimulate agricultural activity discussed in Chapter 7 of this thesis. This comparison process, amongst others, eventually contributed to the proposition of interdependence between producers and markets as a motivation for development

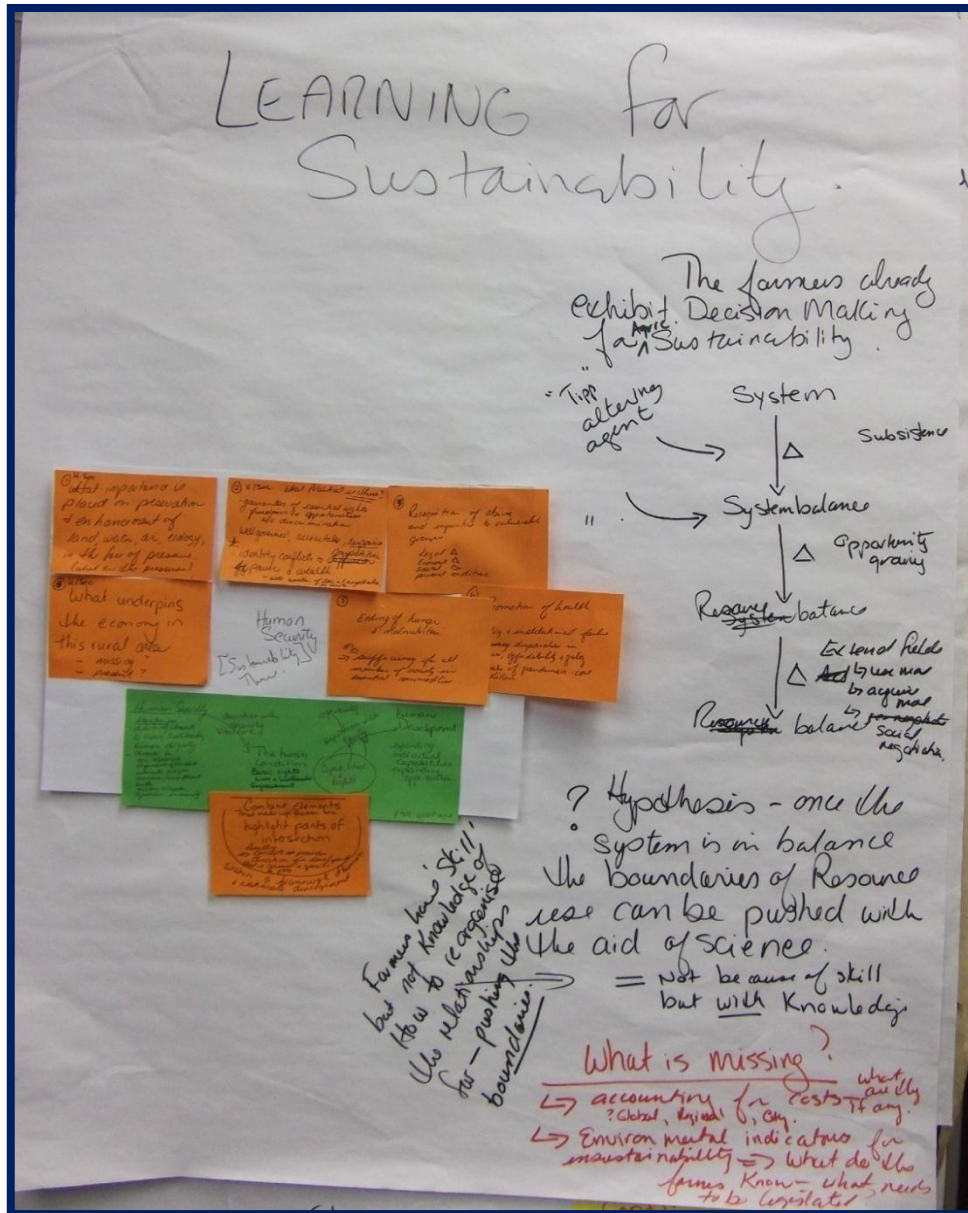


Figure 4.3 Developing theoretical concepts

In summary, once the patterns, decisions and relationships had all been open-coded in the raw data, the codes themselves were taken forward as development of concepts through grouping and diagramming in ways that reconnected data in order to make sense of it and generate conclusions, insights, meanings, patterns, themes or categories, connections, conceptual frameworks and eventually theories. This was a third phase of theoretical sensitivity. Although a digital example of the process is given in Figure 4.4,

emergent theoretical ideas and relationships are presented as the results of the study in Chapter 6, and discussed there in detail.

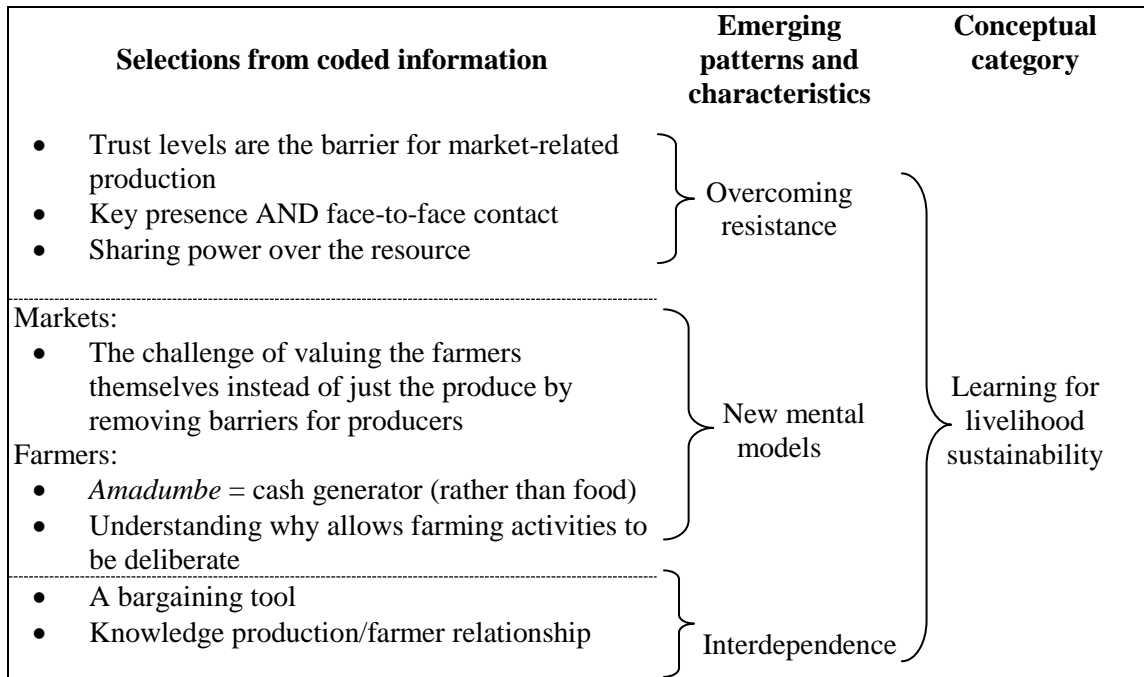


Figure 4.4 Example of the components for the theoretical concept of 'learning for livelihood sustainability'

In building categories, what started out as experience from events is converted into an abstract idea. This occurs through the exploration of meanings between elements identified, while layer by layer the experience is taken into a more abstract conceptualisation of the event. Three posters were devised to represent the theoretical concepts emerging in relationship to significant progress throughout the SANPAD Participatory Project. In retrospect, they linked theory development to three phases of the SANPAD Participatory Project research experience. These posters were used over and over again by the researcher to muse over, challenge assumptions and compare new information with. The first poster communicated the participatory foundations of the SANPAD Participatory Project (Appendix 4-5, 2006) covering the first six months and the emergence of the study question. The second was what researchers were learning in conversation about the values and beliefs forming the culture of market-orientated farming throughout the following 30 months of interacting as participant observers (Appendix 4-6, 2008). The third poster represented the processes that were emerging as contributions to successful commercialisation (Appendix 4-7, 2009). Communicating through a poster forced the identification of core concepts that symbolized and represented the surfacing of important ideas, processes and relationships. The use of

photos helped communicate to others that, although the words may be abstract or representative, the accounts represent real people, real lives, real environments. Photographs put a 'face' to the relationships inherent for ethical participatory research, thereby contributing knowledge generation within a context that can be recognised and therefore useful to society. The posters also served another purpose in rendering theoretical concepts. Once the concepts were displayed, these acted as a springboard to move beyond the identification of categories and semi-related constructs.

Including ethnographic and participatory interests in GT coding

The ethnographic interests identifying the farmers' reality is incorporated in the writing up of the research through the selective use of direct translations of farmers' comments. These add an evocative account of farmers' values and beliefs and help the reader to identify and connect to the context from which the theory emerges. In addition, they provide statements of power and ownership such as those used in the section on ethical considerations of the study in Chapter 1. In the coding process, the participatory and self-determining nature of the commercialisation process shows how decisions are made at individual and collective levels, both by internal and external players.

The reflective process itself is subject to the skill and consciousness of the researcher. The ability for the researcher to build on his or her strengths in the conceptualization and practical aspects of making meaning determines the effectiveness of research. Despite the consciousness that the researcher may have had prior to entrance to the field, learning experiences contributed towards a movement towards each other of understanding and sharing of values and beliefs. Using a constructive approach to the analysis of processes allowed for the understanding of transformation to be connected to knowledge-building through the reflexive engagement of the researcher with local and specific realities, including agency, in the process of change.

A constraint for the researcher was that she did not speak the local language and therefore all dialogue needed to be translated. Originally a weakness, this was converted into an opportunity to confirm the understanding of data before leaving the field. All probing questions and dialogue were translated by a fellow researcher present at the encounter and who was also involved in the SANPAD Participatory Project. Often this turned into a discussion between the informant, the translator and the researcher, paving the way for deeper probing, checking understanding and learning by participants. The translator was always a trained Zulu-speaking scientist and therefore

instinctively communicated what farmers said using terms familiar to their own knowledge field. For example, if the farmer described the soil as ‘too wet’, the translator would instinctively use the term ‘water-logged’. In the beginning, the researcher probed for exact words used by the farmer in an attempt to be more accurate, but because of the translation process this was very time-consuming and potentially diverted the real objective, which was to ‘understand’ what the farmer was describing. As concepts began to emerge, this turned out to be an advantage, in that it forced the focus of note-taking to turn quickly towards notes that would be useful for developing theory.

From a practical perspective, the time taken for translation allowed the researcher to observe body language, take notes and reflect on the next question designed to explore a line of thought more thoroughly. The respondent also had extra time to think through answers, as well as make connections themselves with previous conversations. The mutual question and answer process contributed to a trans-disciplinary consciousness between researchers in the project, as they began to understand the nature of the probing of social and cultural patterns.

As a participant in the commercialisation activities of the SANPAD Participatory Project, an empathy and knowledge of farming challenges, and a sense of shared excitement of ‘successes’ enriched the ability to see issues from an insider’s perspective. The literature identifies this process as an immersion in the data so that they (*the researcher*) become part of the process (Luca 2009). The knowledge is not independent of the researcher’s involvement and seeks shared meanings and new understandings. This embodied⁶ learning helped to organise the information into coherent, reflexively processed conceptualisations of the commercialisation process.

4.2 Researcher learning as the underlying theme of theoretical sensitivity

Throughout the reflective stages of the field work, the researcher shared with any interested colleague the diagrams of how sense was being made of what she had seen, heard and felt in the field. A willing ‘victim’ of these explorative processes introduced the researcher to Otto Sharmer’s Theory U in diagram form. He said that the research

⁶ Embodied knowledge links know-how and sensory or empirical knowledge derived from action and experience, plus problem-solving based on tacit knowledge, with the importance of context. It is therefore, focused on the individual, within a context, and the individual derives power from this (Adolph 2005, p.3).

process was instinctively using the capacity development for increasing consciousness described in the U movement.

In Theory U, there is a basic U-shaped movement of the learning process moving from Sensing (observing) to Presencing (retreat and reflect) to Realizing (acting with a natural flow) (Figure 4.5). Deeper learning occurs as successive layers of sensing increases awareness of the whole of what was happening. Understanding the heart of what is happening through the presencing stage allows a greater ability to act in a manner that reflects the intrinsic nature of participants in more systemic responses to the vision. This is what the SANPAD Participatory Project set out to do through the process of commercialisation and this is what GT allowed this research to see.

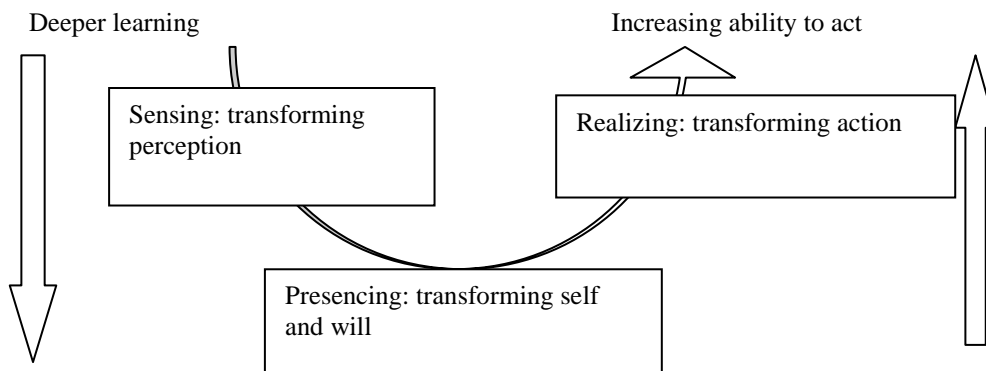


Figure 4.5 The sensing cycle of Theory U learning movement (Senge *et al.*, 2005, p.88)

At the cutting edge of discussion about change, Theory U presents a radical way of increasing human capacity for becoming change agents of the future (Senge *et al.*, 2005, pp83-92). The learning proposed in Theory U is a shift from learning from the past (experience) to the future as the reference point for learning. Through envisioning a future, and slowing down enough to see what is really needed, we are able to discover our own part (as participants or facilitators) in bringing that future to pass (Senge *et al.*, 2005, p86). The challenge, according to Adam Kahane, is to move beyond reacting to a set of circumstances and to adopt a very different process in facing very difficult issues, when “very different people align in very complex settings” and “when the future might really be very different from the past” (Senge *et al.*, 2005, p.87). This movement requires transformative behaviour. Wolinski (2010) defines four primary behaviours of leadership that is transformative (Table 4.3). A corresponding appropriate response by those being lead would logically encourage transformation.

Table 4.3 Leadership behaviours for transformation (adapted from Wolinski 2010).

Wolinski’s Transformational Leadership
Acting consistently with stated beliefs, goals and values, following through on commitments and treating people in a consistent and fair manner
Clear communication of visions that link individuals to the vision
An environment where participants feel safe to think creatively, challenge the status quo and come up with innovative ideas, and
Facilitation of personal development goals and customized strategies for improving these goals.

In essence, during change as a process of determining a future, learners are challenged to move beyond the learning that they are familiar with whether from memorisation or assimilating information. The learning moves even beyond Kolb’s experiential learning that has been so useful in participatory development where learning from the past through a cycle of action and reflection modifies learner consciousness and increases the ability to make effective decisions (Smith 2001). Most important is to not impose the old frameworks on new realities (Senge *et al.*, 2005, p84). In the context of the present study, this means that the most obvious old frameworks for commercialisation suggested by large-scale agricultural economists or political systems of agricultural services and support would need to be set aside or even challenged.

As a researcher using the sensing cycle as a framework for learning, the transforming of perception was continually influenced by face-to-face encounters with the farmers and with the various researchers, throughout the project. Each new encounter was compared with the learning achieved from the last. In between encounters, presencing required a wide range of reading, from philosophy, anthropology, scientific methodology to technical information on crop production, in order to respond to the field-based information. Again, the researcher’s selection of literature was crucial in determining the type of consciousness that was developing. It would have been impossible to master so many fields of knowledge and practices in one research project and therefore we see again the subjective selection of the researcher in grappling with the epistemological challenges of identifying and categorizing the heart of what was being observed. The realizing stage was a process of making explicit the understanding through the use of reflective essays, conceptual diagrams, compilations of developing concepts into posters, presentations to the academic community and attempts at writing

publishable journal articles. Each of these actions helped to focus the development of concepts and allowed the researcher to select the concepts or perceptions that influenced crystallisation of the core concepts and relationships.

4.3 Benchmarking the process of deeper learning

There were in fact, two simultaneous learning processes occurring throughout the research. The first was the deepening consciousness and use of GT itself as theory and method. The second thread of learning was the deepening understanding by the researcher of how the farmers of the EFO were carrying out their intentions of becoming commercial farmers in submission to transformative leadership.

4.3.1 Learning process 1: Understanding GT as process

The deepening consciousness of GT itself, as theory and method process, was benchmarked by resolving the questions of what methodology to use (Figure 4.6) and how one deals with the epistemological challenges of loosely connected learning (Figure 4.7).

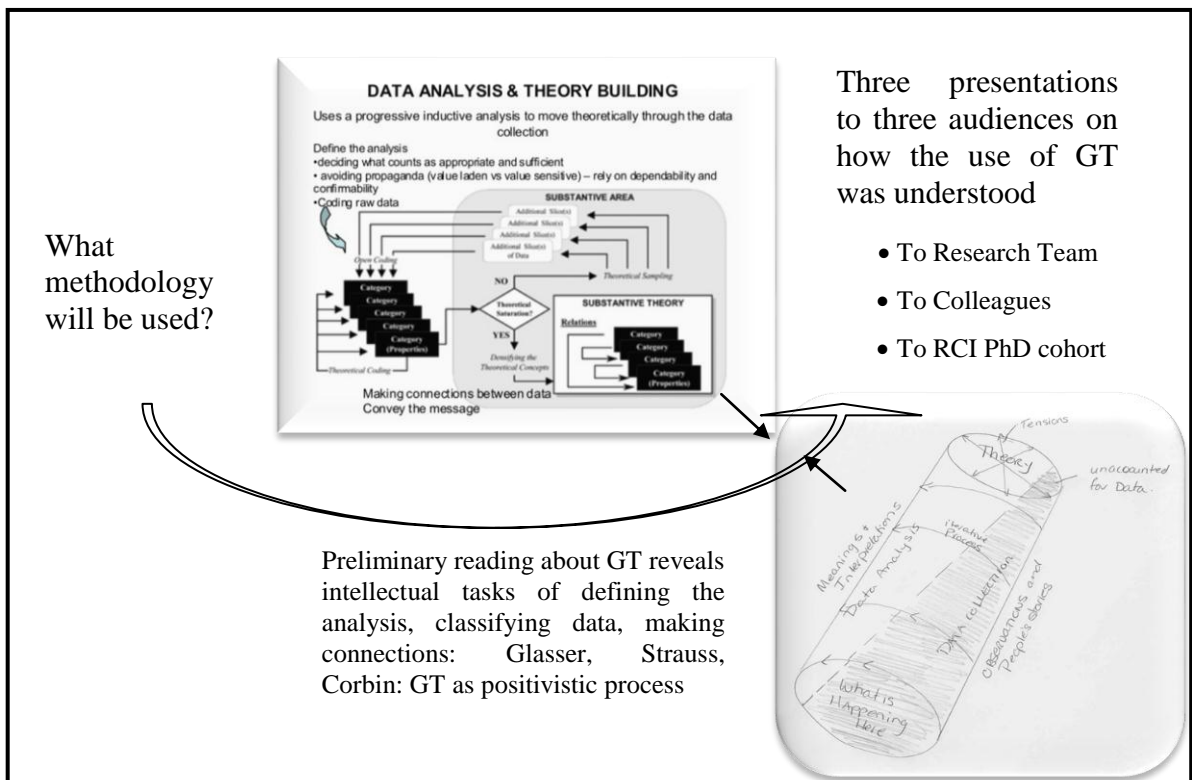


Figure 4.6 Benchmark 1 in the process of understanding GT in this study

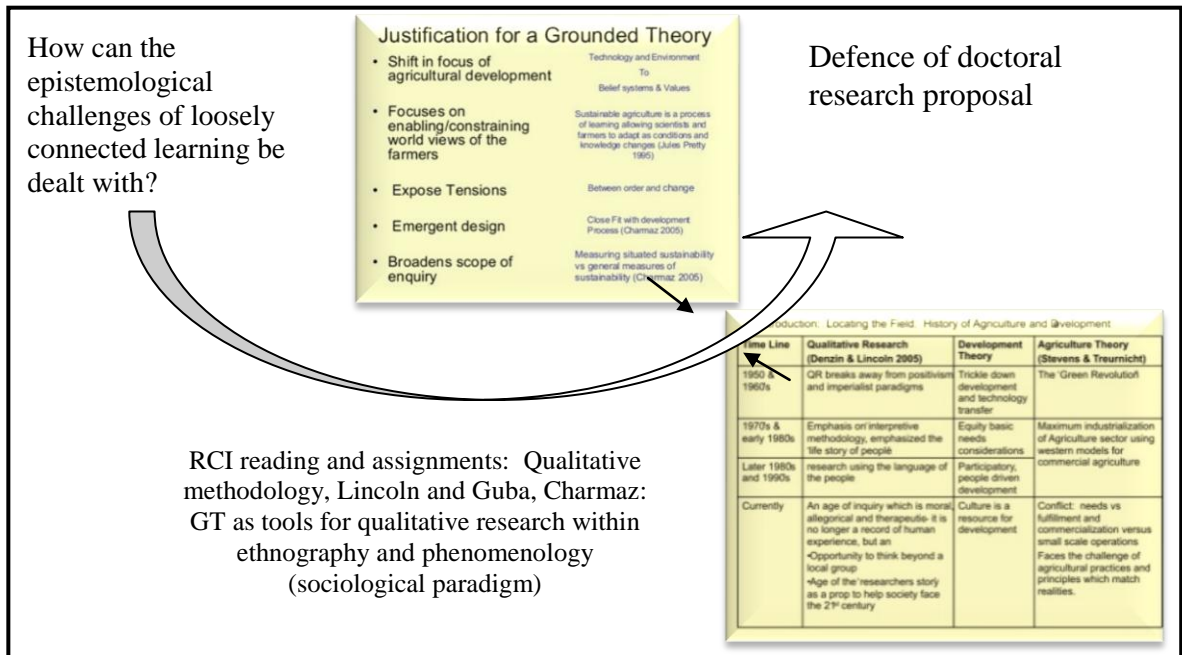


Figure 4.7 Benchmark 2 in the process of understanding GT in this study

4.3.2 Learning process 2: Understanding the context

The second thread of researcher learning was the deepening understanding of how the farmers of the EFO were carrying out their intentions of becoming commercial farmers in submission to transformative leadership (Figure 4.8 and Figure 4.9). In each of the learning curves, crystallisation revolved around a prototype of the learning in the form of a document, a drawing, a poster compilation, or an oral presentation so that it could be presented (realised) to the academic community for interaction. What these figures show is not a prescription for how GT was applied, but documents what the researcher actually did in establishing the core variable and allowing significant theoretical realisations to grow and mature.

In Figure 4.8, the theoretical experience is unfolding. All research begins with some kind of review of published knowledge. For this study, the notion of using GT had come quite early ensuring that an extensive review of literature in a specialist field such as commercial agriculture was put on hold. Instead, the initial review and use of literature focussed on the handling of qualitative data and GT as method and product of the research. This was presented in Chapter 3. The use of the method and analysis for this research presents an original contribution to building theory from participatory action

learning and research through an article currently accepted for publication in the proceedings of the ALARA⁷ World Congress 2009 and attached as Appendix 4-1a.

Making sense of data:

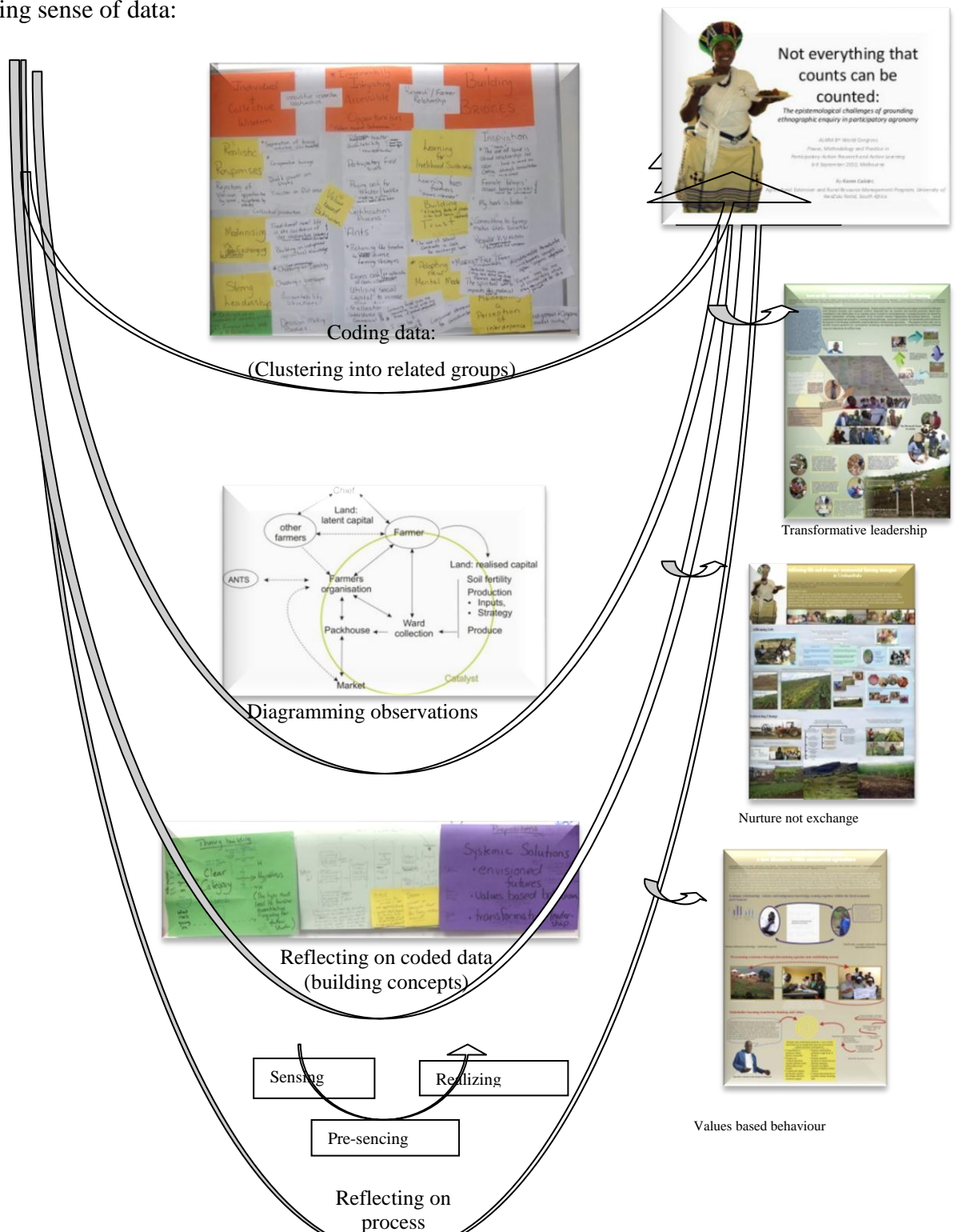


Figure 4.8. Productive results of handling qualitative data

⁷ ALARA is the acronym for the international Action Learning and Action Research Association

The researcher entered the field with an admonition from the GT literature to suspend *a priori* constructs, which would have included theories of commercial crop production, agricultural extension practice or successful economic models. Some lens must be used and subjectivity needs to be recognised. Reflective accounts in data handling drew on intuition and insights derived from the researchers own lived experience of deep rural Zimbabwe. In livelihoods theory, the researcher has found a theoretical framework for continued understanding of communally owned agricultural landscapes and a means for linking globalisation priorities and policy to homesteader opportunities for sustainable futures.

The mandate for this research was extracted from the farmers' research agenda workshop and discussion with the research team. It was to look at how commercial production of *amadumbe* was impacting households, the EFO and the market. Within this was the implication that commercial production of traditional crops would be a successful model for developing rural economies. The initial constructs on relationship of the researcher and direction of the study were thus emerging from the field itself (Figure 4.9).

4.4 Summary

This chapter described the process the researcher went through to use GT as a bridge between what the project participants were experiencing as the phenomenon of commercialisation and a theory that could communicate the knowledge that was being produced. There were two levels of systematic induction. The first level dealt with the data itself as evidence for groups of information that became increasingly organised and interpreted to express essential concepts. The other layer was the learning process that the researcher went through. This process moved the researcher from an informed world view at the beginning of the research experience towards the theoretical sensitivity needed to identify core meanings underlying the process of commercialisation.

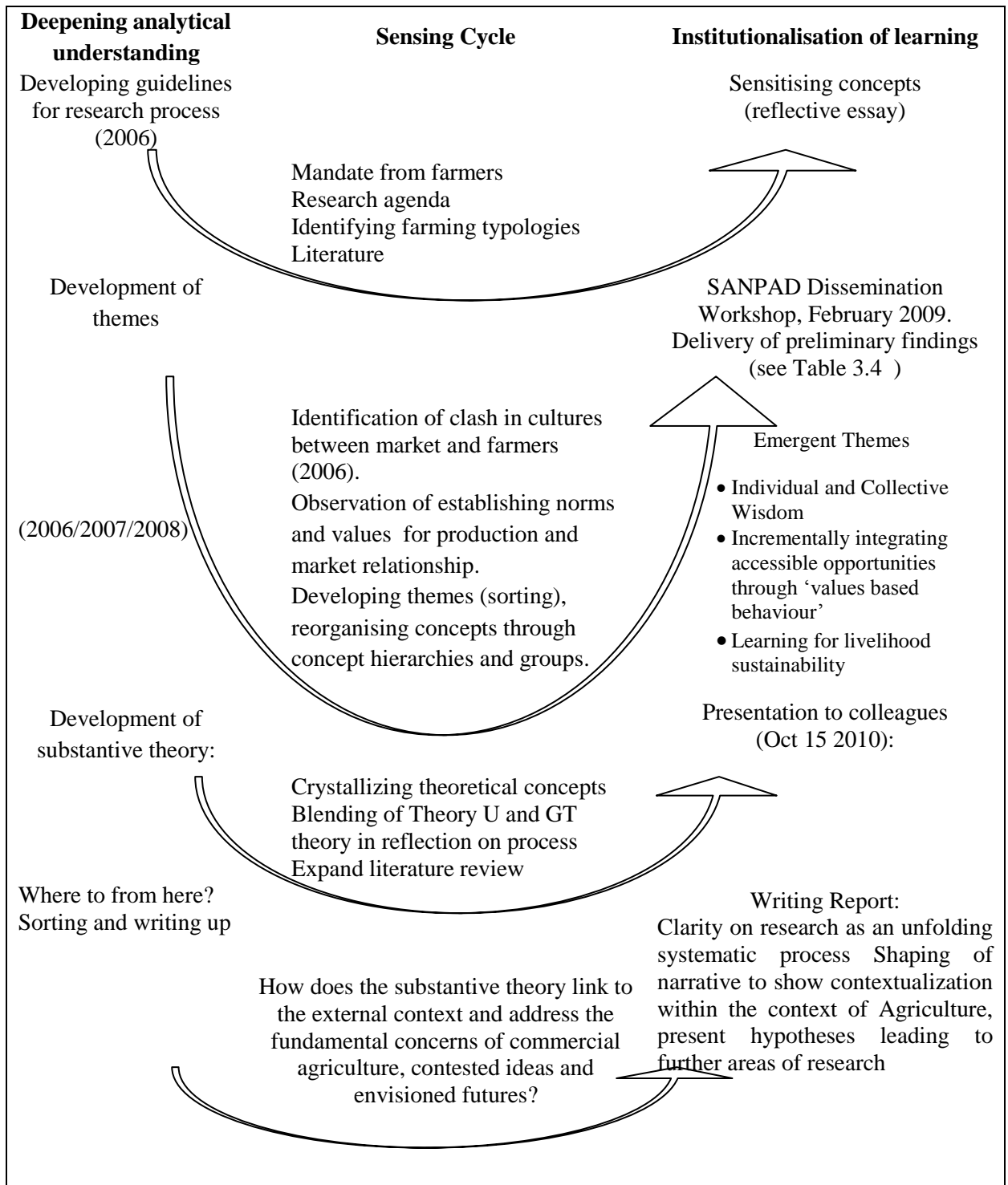


Figure 4.9 Benchmarks for deepening understanding of analysis and reflection and synthesis in theory building

5. EMERGENCE OF SENSITISING CONCEPTS

5.1 Sensitizing in order to ‘suspend’ preconceived ideas

This chapter begins the theoretical analysis of the present research. In the first chapter, we told the story of why there was a problem, explained the need for theory and described a local context within which that problem could be investigated. Chapter 2 looked at the context through a rich picture of descriptive findings and information sources. The local context was described using a livelihoods’ perspective to highlight the resources, structures and processes as a backdrop for the bounded rationality¹ of the farmers in adopting ‘beyond subsistence production’ as a commercialising strategy. Cameos of different farmers provided windows on the diverse yet normative households that people involved in the commercial production of *amadumbe* come from. Chapter 3 explained how GT as a systematic abstraction of concepts complemented an iterative process of suspending preconceived ideas to reconstruct the researcher’s subjectivity with locally specific priorities and perspectives. In Chapter 4, GT was described as a way to handle the information arising from the context and gradually extract theoretical constructs for the relationships between emergent variables. GT was detailed as both design and method for analysing information and identifying variables and relationships.

Grounded Theory always has a definite starting point, but the scope is deliberately undefined. What this means to the researcher is that there are no definitive prescriptions on what to look for, no definite cause and effect to establish. As an interpretive device, sensitising concepts begin the process of delimiting this scope, while (GT’s) inductive analysis further refines and defines the definition of variables and relationships emerging from the empirical instances. Sensitising concepts suggest directions along which to guide the choice of information selected as data and the identification of emergent patterns,

¹ Bounded rationality: the objectivity of the scientific method seeks a perfect rationality that deals methodically with every contingency. In complex situations, this conceptual process is constrained by information that may be limited and unreliable for decision-making about alternatives and consequences. The human mind itself has limits in its knowledge of, and ability to, evaluate and process the information that is available. Often decisions must be made in a limited amount of time and the decision is to ensure meeting a minimum or adequate result, rather than the most optimising or maximising choice. In complex situations the concept of bounded rationality means that these limits or boundaries result in humans relying on “rule of thumb” decision-making on a day-to-day basis. (Businessdictionary.com. Copyright©2007-2010 Vijay Luthra and BusinessDictionary.com. ALL RIGHTS RESERVED <http://www.businessdictionary.com/definition/bounded-rationality.html#ixzz14rqtXkak>).

themes and categories. Chapter 5 describes sensitising concepts that emerged from the context as a way to suspend preconceived ideas by the researcher and other actors and to direct the ideas and questions of the investigation towards a focus on observed practice within the intent and purpose of the EFO. The rationale behind this bias was that, by focussing on the activities presented by actors within the context, the researcher would be able to interpret the activities carried out as systemic and emerging solutions identifying various aspects of the phenomenon, their relationship and potential (Figure 5.1).

Researcher's Memo

Shortly after entering the field, I read the constitution of the Ezemvelo Farmers Organisation. From my understanding of livelihoods theory, I recognised the objectives outlined in this document (see Table 5.1) as being the core guiding conceptualisation of the development goals for this particular group of people. These objectives led to the description of cultural integrity, sustainability and development as themes encapsulating the shared values and beliefs made explicit in the constitution. This document so strongly impacted my lens for approaching the EFO that it became the hooks on which I hung my first observations, participation and reflection. Indeed, the objectives of the constitution led to sensitising concepts which would provide some guidance to exploring the complexities of the commercialisation process without limiting the structure of the investigation by determining the variables or research question in advance (extract from 'Assets & the Zulu world view' a reflective essay Caister, Dec 2009).

Figure 5.1 Reflexive memo from analysis process: recognising the EFO constitution as an expression of intent

The defining of the concepts as the intent and purpose of the commercialisation process guided the search and identification of common threads throughout the data collection and analysis process. Reflection on these threads (as described in Chapter 6 and presented in Chapter 7, Figure 7.5), would eventually help identify the core variable as 'systemic integrity', and recognise the emergent concepts of 'perceived interdependence' brought about through *values-based behaviour* and 'success', characterised by *wisdom* (transformative and legitimate leadership), *self-determination* and *incremental integration* in a relationship characterised by *learning for livelihood sustainability*.

The use of concepts that lack definitive attributes or benchmarks provides sensitivity to potential meaning in the empirical arena, as opposed to a direct comparison of data with benchmarks (Bowen 2006, p2). The term 'sensitizing concepts' was first communicated by Blumer (1954) and many social researchers, including Glaser (1978), Patton (1980), Mouton (1996) and Charmaz (2006), have adopted the use of sensitising concepts as a means for highlighting the ideas conveyed by social interaction. Since GT deliberately begins without a theoretical model drawn from literature to guide the analysis, a framework needed to come from, or 'emerge', from the context itself.

We all know that research is subjective to some degree and qualitative research explicitly so. From the researchers' perspective, the main assumption underlying the background for the SANPAD Participatory Project² research component was that through science, farmers would be able to optimise and eventually maximise production of *amadumbe* within context constraints. The partnership between researchers and farmers allowed for participants to take command of, or rather direct how the process would unfold, and which benefits they sought out of the arrangement. For example, students gained experience and built research competencies while farmers were able to reflect on learning designed around their own agenda.

Within the participatory paradigm, the intention is to recognise the subjectivity of participants and to use that knowledge in synthesising innovative and appropriate ways of dealing with uncertainty (Bammer 2005). Recognising these emergent solutions for commercialisation was the focus of this analysis. Throughout the collection of information from the field and selections from that as data, the sensitising concepts would act as indicators for what was included for data selection. This ultimately shaped the theory as one which emerged as an interpretation of what was intended against concrete expressions of this in the field.

Participation and observation within the SANPAD Participatory Project activities allowed the collection of evidence to shape around the themes of cultural integrity, sustainability and development. There were three layers of participant activities that the researcher relied on. These project activities were the community level decision-making in response to farmer interactions with the market, the experiential on-farm crop trials which ran for three

² Each individual research project within the SANPAD Participatory Project would have disciplinary biases and perspectives that determined the research outcomes.

years and then there was the researcher's contact with individuals resulting in field notes as a product of participating in this (experiential crop trial learning) and other research activities. As described in Chapter 2, Section 2.8.1, the SANPAD Participatory Project was designed to facilitate the farmers' focus on a 'way of life' that channelled economic benefits back into the community for doing what farmers already knew how to do well. The focus for the researchers was to support that process while obtaining higher degrees.

5.2 Development

Development was included in the sensitising concepts because the farmers' aim was at economic development (Table 5.1). The intention to deliberately co-operate with institutions that would support an environmentally sound and socially ethical cultivation of agri-products was expressed in the objectives of the EFO Constitution: "*To co-operate with the South African Department of Agriculture, at all levels, and any other institution or persons in sustainable, productive, stable and equitable agriculture.*" The implication is that farmers are willing to form partnerships "*to deliberately co-operate with institutions or persons...*" and that they are willing to learn through collective action and institutional change "*to commercialise our produce...without compromising our cultural integrity*" and to integrate technology "*Whenever possible, external resources are replaced by internal (solar or wind energy, biological disease and pest control, biologically fixed nitrogen and other nutrients released from organic matter or soil)*". These statements of intent are deliberate statements of social and technological change. In other words, the farmers are intentionally setting out to add new dynamics to their systems of interaction and production. The other implication is a subtle declaration of power interpreted by the researcher as '*We have made a decision, and we willingly co-operate with others in the attainment of our objectives*'. The ownership of the goal belongs to the community hence they insinuate a willingness to adjust, but the assumption implies that institutions and persons will also adjust to farmer values of "*sustainable, productive and equitable agriculture*" (EFO Constitution, Appendix 1-2). The farmers are not waiting for someone to carry out 'development', but are sending out a clear invitation for others to join with them in a negotiated pathway. In constructing a theory from empirical data, the analysis therefore takes a systematic look at the process that the community has gone through in re-orientating their agricultural strategies. This process was characterised by decision-making that assigned roles and responsibilities for power relationships and the nature and type of relationships that linked internal actors and external actors in market-oriented agriculture.

What was looked for in the data was evidence of such relationships, how they were defined, their nature, purpose and roles.

Table 5.1 Development, sustainability and cultural integrity as sensitising concepts arising from the EFO constitution (Appendix 1-2, Constitution of the EFO)

Sensitizing concept	Objectives of the EFO	Implications for information-gathering from the field
Development	<p>Objective A.1. “To co-operate with the South African Department of Agriculture, at all levels, and any other institution or persons in sustainable, productive, stable and equitable agriculture.”</p>	<ul style="list-style-type: none"> • This meant looking for events, patterns and scales of co-operation that impact on the productivity, stability and equitability of the agriculture being practised. • This meant looking at power in relationships, who is making the decisions and who is being empowered and how. • How did people work together, what group dynamics were there and what aptitude was there for individual and collective decision-making? • What is the impact of local governing systems and authorities?
Sustainability	<p>Objective A.2. “To practise organic farming, as understood to be: a production system that sustains agricultural production by avoiding or largely excluding synthetic fertilizers and pesticides. Whenever possible, external resources are replaced by internal (solar or wind energy, biological disease and pest control, biologically fixed nitrogen and other nutrients released from organic matter or soil) resources found on or near the farm.”</p>	<ul style="list-style-type: none"> • This meant looking at the characteristics of the farming systems being used • What knowledge do people have, what do they need, what do they want, what can be built upon?
Cultural integrity”	<p>Objective A. 3. “To commercialise our produce in a manner that improves our economic development without compromising our cultural integrity.”</p>	<ul style="list-style-type: none"> • What ideas and patterns are ingrained? • What lives do people value? • How have people collectively and individually improved their lives? • What is the nature of collaboration and partnerships? • What knowledge could be built on? • Where are the gaps in knowledge? • What do people know that they cannot use? • What was the nature of the knowledge: how is it organized, stored, acquired and passed on? • What new information resulted from participant interactions that was different and ‘made a difference’?

5.3 Sustainability

Sustainability was included in the sensitising concepts because the farmer's objective is to use a production system that sustains agriculture and whenever possible replace external resources with internal resources found on or near the farm (Table 5.1). Suggested in this EFO constitutional objective was the use of alternative sources of energy '*solar or wind energy*', methods of disease and pest control that would include technology transfers arising from ecology sensitive agricultural research '*biological disease and pest control*' and to avoid synthetic chemicals by building soil fertility through organic cultivation of soil and crops '*biologically fixed nitrogen and other nutrients released from organic matter or soil*'. These visions communicate a consciousness of balancing the resources located within the system '*resources found on or near the farm*' particularly for crop production. There is an efficiency implied in the farmer's objectives – we have basic needs, we wish to increase our economic standing but in a way that maintains a specifically located viable ecological and social environment. This research proposes that this is a crucial difference between a large-scale organic production of commodities, and an organic way of developing agriculture as a means of increasing, sustaining and being in command of an individual or community's resources. The assumption of the community taking command of the risks rather than relying on external ways to eliminate risk, suggests to the researcher that these farmers' perspective does not look for constraints. The focus envisions a better future through self-determining patterns, forms and characteristics, rather than through a lens of limiting circumstances.

Two more dimensions of sustainability are hinted at in the EFO objectives; "*we wish to commercialise without compromising our cultural integrity*". These ideas would suggest a conceptualisation of sustainability that includes economic as well as social aspects. It raises the questions (over and above subsistence production) of how to shift the notion of the consumer of Agri-produce, from household to market. The value of the produce also shifts, from a source of (food) nutrition and raw materials for social relationships, to a source of cash. Accomplishing this requires bridging the resistance between homestead farming knowledge, practice and attitudes, and contemporary market knowledge and practice. In the farmers' words:

(Sufficient production for food) *if my family will not eat it, I do not grow it. My family has knowledge of cowpea, but my husband does not eat them, therefore I do not consider its potential as a crop.* (FN120908).

(Increased production for exchange) *Amadumbe are a lot of hard work – and we are tired of eating them too. I can grow them because I have the knowledge, but I don't have to eat them now because I can sell them to the market...And get cash for the other things that are needed* (FN260407).

A process of engagement with contemporary economic practices, where the end-product is knowledgeable persons or actors, not slaves to economic ideology (or another framework) could perhaps be labelled as modernising. These bridges are formed by the exploration, application and deepening of knowledge between contemporary economic practices and groups who have different patterns of formal interaction (Detail is shown in Chapter 6, Figure 6.2). This communication is essentially between two different cultures where developing a new 'normality' leads to an acceptance of other perspectives and practice and contributes to social and cultural sustainability (Ries 2001). In other words, development is about knowing how to make informed choices for increased human security³ because the systems have learned to communicate with each other. 'Afrikan'⁴ wisdom would call this modernising without westernizing if the shift is accomplished without loss of other values such as the nutritional needs and the local political-social meanings for the households involved (Rukuni 2004).

From the social perspective the cultural integrity of the relationship depends on how farmers deal with expectations and effects of their Livelihood activities, how they account for conflict and inconsistencies and still remain in command of the resources, attitudes and behaviour required to preserve the health and integrity of self-organizing systems operating within biological limitations (Voinov & Farley 2006).

Jules Pretty (1995) presented the idea that sustainable agriculture can be measured meaningfully at the local or community level, but because sustainability is time and place

³ See definition of human security in definitions page (UNDP 2009)

⁴ Although Dr Rakuni never explains his use of Afrikan vs African, his book is written in the context of an Afrikan Renaissance (within the African diaspora) that includes the Sankofa Movement – described in the book, *The Sankofa Movement: ReAfrikanization and the Reality of War* by K. Agyei and Akua Nson Akoto <http://www.thesankofa.org/index.php?ts=symbols>. [accessed 31 Dec 2010]

specific it is difficult, indeed destructive to try and establish a concrete set of technologies, practices or policies at the higher levels of districts, regions and countries. He defines sustainability in agriculture as a process for learning, learning which allows scientists and farmers alike to adapt as conditions and knowledge change (Pretty 1995). In this milieu markets might also adapt and learn. Martin Whiteside (1998) would agree. He advocates the empowering of small holders in South Africa to take more effective roles in sustainable natural resource management by seeking new partnerships with government, the private sector and non-governmental organizations. He suggested that national policy must be influenced by community level thinking and meanings about the shape and scale of sustainable agriculture. Robert Chambers in his book “Ideas for Development” confesses that even though the big issues of poverty and inequality must be formally addressed, real solutions will come from personal and collective agency where the action individuals take acts on that which we all have in common, our global habitat (Chambers 2005) (Figure 5.2).

Reflective memo

The unit of resistance then, is the ability for the farmer and the market to communicate effectively with each other. Variables are the communication skills and attitudes of the individuals assigned to the task while the attitudes and response of the recipients to communication, specify normal patterns of behaviour. Who precipitates the relationship; who bears the responsibility for the communication? A seed company would send out a sales person – someone specifically trained to inform the potential buyer of the value of the product and persuade them to buy it. Our research has shown that this must be a mutual sharing of responsibility. In the beginning, Woolworths has shouldered the social impetus of opening up communication that has enabled the farmers to realise the power of the relationship. The catalyst (in the form of volunteer service to the EFO by Modi) has acted as an interface leading to an awareness of the possibilities between the farmers and their market. For the market, possibilities were costs, realisation of environmental issues, and the need to expand and secure a reliable supplier base. For the farmers, it was the realisation of the need for withdrawal by the catalyst from the role of interface. How does one plan for the withdrawal of the catalyst? .What is the tipping point for moving to the next level of development?).

Figure 5.2 Researcher reflection: the core issue of resistance between farmer and market

The definition of sustainability most relevant then is in fact not a definition, but a search for the conditions which allow feedback and the capabilities to direct (be in command of) the nature of the relationship (accountability) between the economic, social and physical environment of the EFO members (Figure 5.2). It is in this search through roles, leadership and practice where we look for ‘differences that make a difference’. Therefore for the purpose of concept development, we can define sustainability as a process limited by biology and characterised by reasoning systems that open up and explore options and their consequences. What was looked for in the data was evidence of such reasoning systems, cultural integrity and adoption, or not.

In the beginning of the research process, the idea of sustainability was originally perceived by the researcher as ‘permanence’-a romanticised version of the ‘African-ness’ of traditional rural homesteading. Guided by the sensitizing framework it emerged that the farmers wished for ‘traditional’ to be modernised not to remain as it was and that ‘tradition’ has less to do with material things and more to do with values and ethics.” Influencing the development of this understanding for the researcher was a United Nations Development report reporting that a major obstacle to development is the lack of human security. The report described human security as ‘the kind of material and moral foundation that secures lives, livelihoods and an acceptable quality of life for the majority’ (UNDP 2009, p19). Science looks at cause and effect, but morality looks at the consequences of cause and effect and has to make a judgement call which requires a moral stand as a foundation for an envisioned future. In all interactions, but especially where the resources are limited, where the environment is being irreparably damaged, where there is loss of human dignity⁵ accompanied by powerlessness; the capability for moral decision making that includes others and the environment is required.

5.4 Cultural Integrity

Integrity as a characteristic arises from the theme of culture and is included in the sensitising concepts because it has been defined as a collective goal within the EFO constitution. “...we wish to commercialize our produce in a manner that improves our economic development without compromising our cultural integrity...” (Table 5.1). Within

⁵ The researchers opinion is that we will never be rid of material poverty – however, being ‘poor’ does not limit moral integrity, or human dignity unless the poverty is the deliberate exclusion of a group from resources in favour of another group (a question of power).

the participatory paradigm of people centred development, we need to be capable of defining culture in terms that avoid the historic pitfalls of ‘superiority’ (Freilich 1989, p3) or immobilization of adaptivity because these terms are ‘overflowing with meaning’(Freilich 1989, p1). Our language and practice, must allow individuals to progress or acquire information. German philosophers associated culture with the cultivation of a complex inner life. For them, a cultured person represented ‘education-transmitted knowledge- and profound mental and spiritual capacities’ (Freilich 1989, p3). Masango (2006) suggests that the capacity for the practice of *ubuntu* lies in spirituality where ‘who we are is what we do’ and that relationship is part of developing that spiritual foundation.

In his recent book “I am Afrikan”, Dr Mandi Rukuni suggests that retaining the integrity of African culture means acknowledging our connection to nature, owning the biological and social connectivity of extended family structures, and being connected to God even though this means believing in things you cannot prove. He uses a term ‘strengthening the family’ to portray the need for a renaissance in African culture where the following principles are preconditions for an African cultural integrity that modernises rather than westernizes (Rukuni 2007). :

- Rebuilding self-belief and self-confidence in religion, language, education, music and art.
- Restoring the historical value of African knowledge and wisdom and most importantly,
- placing greater value on new knowledge created through social interaction and exchange, by shifting the responsibility for education and learning processes, back to family and community

From a western thought process, the instinctive language for describing such thoughts would be to talk about these ideas using logical or rational categories. For instance, spiritual versus physical categories, religious versus secular and so on. Wiredu (1998), postulates that the African way of thinking does not have categories. This leads to difficulties in trying to understand or write about it through western thinking. The anthropological nature of this research however, allows me to use the language of the farmers themselves – giving ‘voice’ to interpretations that assist in focussing on an insider view. For example, in this research, using a western understanding, the researcher could describe an observation that what farmers’ believe is that the social and spiritual

relationships of individuals can influence the physical world. Through the narrative expressed by a struggling female farmer, the notions of reality that surface through her choice of words and emphasis, is much more emotive and excludes the cause and effect logic of positivist science that the researcher might have used.

‘Strengthening the household’ was the translation of an idea communicated to me by a farmer in an unsolicited narrative of her need for stability in her family relationships and farming endeavours. Her story described the ‘killing of her fields’ (commercial crop) through the ‘use of umuthi’⁶. This farmer believed that a ‘breakdown in roles and responsibilities of adult family members’ allowed ‘evil to penetrate the protective barrier normally present in a strong household structure’ (FN260407).

If we relate integrity (culture) to the social, economic, and environmental dimensions of sustainability, we are reminded that the limits of effective utilization of knowledge for social and economic development will ultimately be imposed by biology (Voinov & Farley 2007). This addition of natural limitations shifts our understanding of people centred development as proposed by Scoones & Thomson (1994, 1989) and Burkey (1993) and to include ‘culture’ centred development within the limitations of the natural environment. Therefore, the cognitive definition of Culture, most relevant to this study has been extracted from ethno-ecology. This view point defines culture as ‘what the individual needs to know in order to act effectively in one’s environment where the environment includes both the social and natural components’ (Freilich 1989, p 145). The flexibility of this definition allows for the dynamic nature of development, which in moving to processes that are more equitable, involves individuals in determining their own future. This is consistent with being ‘in command of ones resources’ embodied in livelihoods theory and the empowerment of the participatory research paradigm. The definition implies that culture serves as a system of information determining a way of life that is formally appropriate (thereby including a relationship to other human beings) and is judged by how well it sustains and promotes that way of life (Freilich 1989, p145). This is also consistent with the dimensions of sustainability where the social, economic and natural

⁶ A general isiZulu term, meaning medicine that can heal or destroy the physical body and has been associated with power struggles from rivals and kin (Flint & Parle, pp314-315 in Zulu Identities; Carton, Laband & Sithole 2008 pp312-321).

elements must interact in such a way that they utilise, replenish and renew from one generation to the next.

Having a culture is a prerequisite for a social context, but when two cultures clash it is because they have no handles for understanding each other. The higher the level of misunderstanding, the greater the difference in culture; and communication entails not only language, but agreement over traditions, customs, beliefs and values (Bate 2002, p5). In this research, 'overcoming resistance' is the label representing the theory of how farmers and the markets resolved their differences. It represents a concept which seems to be full of common sense, but because of cultural differences, requires as we shall see later in the responses of Woolworths and the farmers, an uncommon wisdom to resolve. To support Dr Rukuni's claim of modernising without leaving our cultural integrity behind we find that individuals may interact with a variety of other cultures and adapt different values, patterns and practices used for success within those particular relationships while at the same time maintaining other relationships as separate belief and value systems (Bate 2002, p5). In identifying aspects of successful commercialisation then, the agri-culture could be identified as what the individual needs to know in order to nurture the natural resources for production, produce agri-related products, engage with markets and determine a future through conscious reasoning systems which open up and explore options within their social and natural consequences. How uncertainty is dealt with in this context would be reflected in the decisions made, reflecting solutions for the impact of market related demands on farmers. How conflict is resolved identifies the values and beliefs underlying the formation of a new 'normality.

This chapter has identified an emergent framework for focussing the investigation while accommodating the multiple dimensions of participation from a variety of social spaces. The themes of development, sustainability and cultural integrity identified, span the diverse needs and desires of the farmers. They help to identify important insights within a defined landscape for the re-shaping of traditional agriculture.

6. RESULTS OF INQUIRY: SEEING PATTERNS, SYNTHESIZING CONCEPTS, SENSING RELATIONSHIPS

This chapter presents a systematic compilation of the analyses¹ which have already occurred in previous phases of the research. To understand the delimited and abstracted nature of the reporting of results in this chapter, it is helpful to begin with a crystallization of the research results as a process of the construction, thereby providing a framework for the presentation of the increasingly abstracted groupings. This progressive abstraction is depicted in Figure 6.1 as a linear data handling process². The initial relationship building and participation in project activities, allowed for an exploration of the context and the identification of the constitution as a starting point for selecting relevant information. The sensitizing concepts defined in Chapter 5 served as a framework for collecting this information. The information from the field was coded. Through constant comparison between coded data and between sensitizing concepts, and discussion with a range of individuals about what these patterns meant, a deepening understanding of the patterns emerged. Coding followed by thematic grouping allowed for the emergent patterns of systemic integrity, sustainability and the capacity for development to be identified. Systemic integrity was identified as the core concept because the capacity for development and sustainability were interpreted as being dependant on the integrity of the learning and change process.

The relationship between these patterns was characterised as an emergent interdependence. The nature of ‘successful’ in terms of the EFO activities was a recognition of the relationship between social cohesion and the incentive for agricultural activity that was identified and explored in the learning space provided by the SANPAD Project. The implications of this systemic integrity in terms of the emic interpretation of ‘success’ were identified as social cohesion and agricultural activity.

¹ Mapping tools: examples are Figures 2.21, 2.22, 6.1, 6.2, 6.3.

Development of concepts: examples are Figures 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, and the five diagrams from Chapter 7.

² The reality of course was iterative and messy, but the overall pattern was in fact a sequential process of increasing crystallization in discovery and interpretation.

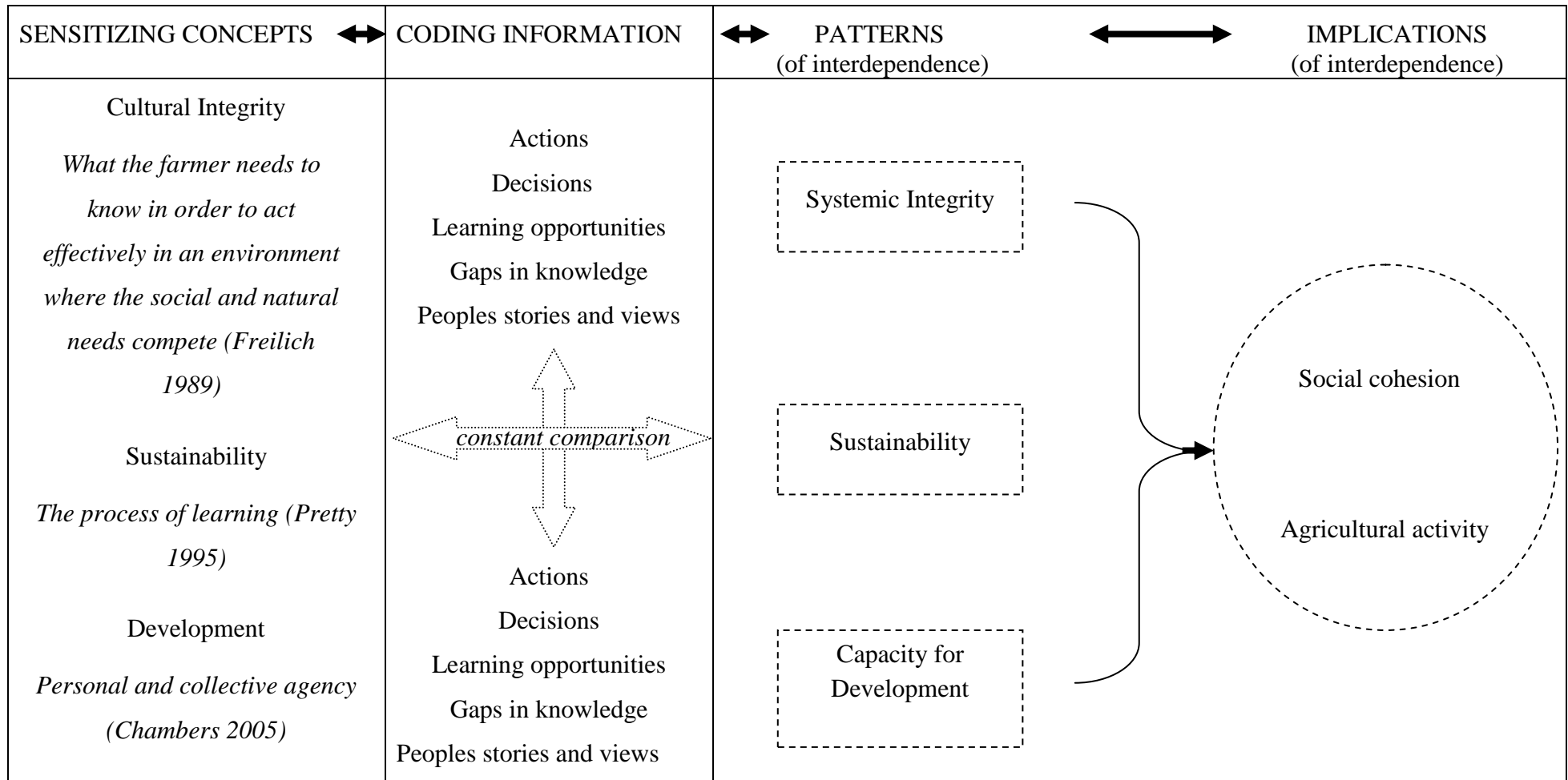


Figure 6.1 Summary of the Linear logic representing the process of abstracting notions from the field

The set of related concepts presented in this reporting of results are dimensions rather than a reduced or deduced category of the research process. Writing about them required imagination, representation and selection as part of the process (Weick 1989). An eclectic selection of literature has been used to develop concepts and position the researcher's interpretations with other published voices. To discipline the process of theorizing, the consistent application of selection criteria (dimensions, groupings, patterns, relationships) helped to order the information that was selected from field observations.

The problem expressed by farmers of the EFO was how to encourage farming as a continued way of life. The question which framed the research was to interpret how the farmers of the EFO were able to move towards market-orientated agriculture from within a traditional farming agricultural practice. This research assumed that the definition of success could be and should be determined from within the context. What was identified was that 'successful'³ commercial homestead agriculture was the result of leveraging existing local agricultural knowledge and skills with an incentive to produce beyond subsistence. By doing so, a preferred way of life, was accommodated within a growing capacity for sustainable market oriented agronomy (Figure 6.2).

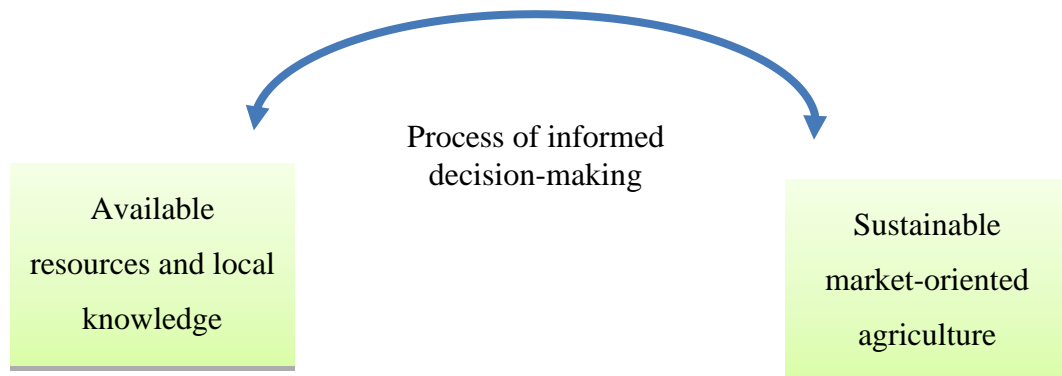


Figure 6.2 Leveraging for successful commercial CDR agriculture

Influencing the change was the impact of informed decision-making which brought the stakeholders together through the sharing of values and beliefs. The linkages which nurtured this relationship were the role of the project manager in acting as an interpreter of meaning and intention between the internal and external context, and the weekly ward level and monthly EFO membership meetings acting as a forum for collective decision making processes. This incentive for economic activity resulted in the market-

³Defined in Chapter 5, Section 5.4.

orientated production of *amadumbe* that tapped into the factors that sustained and created social cohesion, as well as those that stimulated agricultural activity. This systemic process encouraged a sustainable development of social and economic capacity within the farming community.

The task of reporting results has used the support of multi-faceted theoretical input and a selection of examples from field experiences to illustrate links in the coded data (identified and described in Chapter 4) as characteristics of constructed conceptual categories. This process begins the interpretation of the commercialisation of homestead agriculture within the EFO, in terms of patterns and relationships initially integrated around the process of informed decision-making. The patterns were also constantly compared to the sensitising concepts which gave boundaries to the construction process.

Perhaps the features of the categories and patterns described will sound familiar to those with experience in sustainable livelihoods research and the participatory paradigm of stakeholder relationship-building, action research and development. At first introduction, these features can be described for what they are, stakeholders building relationships using the 'best' practices within individual and collective knowledge. However, hidden within these patterns and behind the obvious logic of a producer-market relationship, lies the significance of values-based patterns of behaviour and the new meanings for what it means to be commercial farmers; meanings that are the result of a deliberate commitment to learning on the part of all stakeholders. These emergent properties show patterns of reasoning which establish systems for opening up and exploring options and their consequences. In section 6.1 these patterns are identified as 'individual and collective wisdom', 'integrating accessible opportunities, through value's based behaviour', 'learning for livelihood sustainability', and 'differences that make a difference'.

In the second section (6.2), these patterns are defined, as well as the roles and relationships which brought about the informed decision-making contributing to social cohesion and factors that stimulate agricultural activity. This 'being together in the world' through social cohesion and improved productivity, represented the re-shaping of traditional agriculture and the ability for homesteads to produce beyond subsistence.

6.1 Envisioning a future; informed decision-making

6.1.1 Individual and collective wisdom

The building of this concept revolves around the observed behaviour patterns of strong leadership, realistic responses and modernising versus exchanging. They represent solutions to engaging with markets that arose from within the system and help to move the integrity of shared values into new attitudes and behaviour (Table 6.1).

Table 6.1 Emergent concept of individual and collective wisdom

Conceptual categories	Emerging patterns and characteristics	Selections from coded information
Individual and collective wisdom	Strong leadership	Articulating an identity Decision-making bodies Planning and visioning
	Realistic responses	Co-operative supply of market requirements for <i>amadumbe</i> Separation of commercial production from subsistence Environmentally respectful choices Reallocation of subsistence resources
	Modernising vs. exchanging	Manoeuvring within traditional social, political, economic and physical boundaries Land itself is used as capital through consultation, not exchange

Strong leadership

The first notion here is *strong leadership*; which, in this context, is indicated by the community choosing and articulating a particular identity through the Ezemvelo Farmers Organisation. Articulating their values of sustainable, equitable and productive agriculture, through the constitution, provided a way to engage politically and evaluate decision-making processes in terms of current and



future behaviour (Chapter 5, Table 5.1). It was in essence, a declaration of intent. In the context of Theory U, described in Chapter 4, it offers a vision of the future. The opportunity to market a traditional vegetable was created with the offer by Woolworths to sell *amadumbe* in their organically certified, traditional vegetable market niche. The adoption of organic certification as the EFO’s strategy towards a market niche used a particular blending of adapting a traditional food crop, which was familiar in terms of

food production and social structures, with the ‘new’ criteria required for a marketable product.

Although the formal gatherings of the farmers through the monthly forum acted as an interface between individual farmers and the market, choosing an individual as a ‘gate-keeper’ for the duration of the SANPAD Participatory Project added a layer of capacity and focus to the negotiations and activities between the organisation, individual farmers and external stakeholders (Figure 6.3). In his role as gate-keeper, Modi combined knowledge of economics and production science with legitimised⁴ authority for negotiating between the culture of the market and the culture and knowledge of local farming practice.

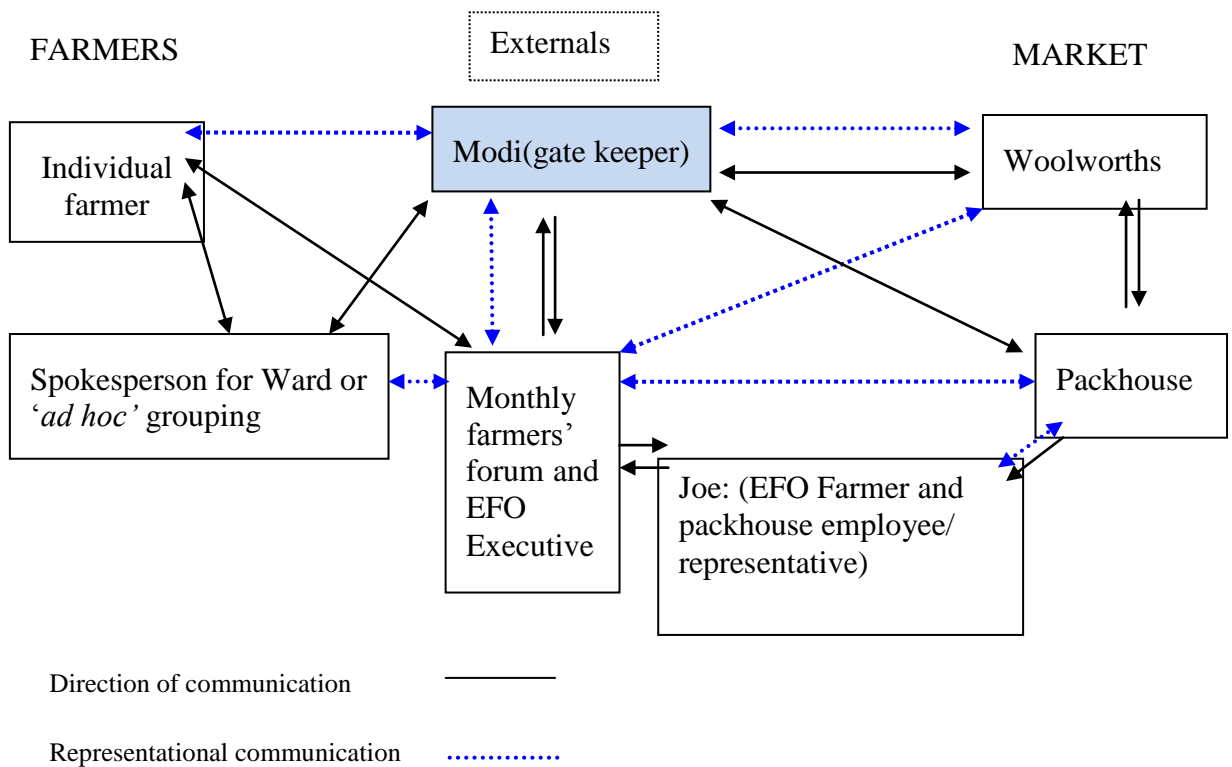


Figure 6.3 Channels of communication (extracted from field notes)

Establishing *decision-making groups* such as ward committees, monthly farmer forums, and the EFO executive (Appendix 1-2) provided multiple layers of decision-making all of which were accountable to each other (Figure 6.4). This is reflected in the dotted lines of Figure 6.3 and the more conceptually in Figure 6.4. In these levels of decision making, including the farmers forum; each farmer has an individual voice and the

⁴ The legitimising of the gate-keeper role is discussed later, in section 6.2.1.

political power of a consensual voice, but also the support of an executive committee, to facilitate decision-making. At ward level, farmers could deal with particular problems as neighbours who shared climactic and infrastructure issues, as well as a collection point for the *amadumbe* on their way to the packhouse. Structures such as the executive committee of the farmers’ forum and internal organic certification inspectors have specific roles. For example, executive committee members of the EFO gave regular treasurers’ reports, feedback to externally interested parties or decision makers and acted as a preliminary filter that contextualized the input of information and ideas for communication to their fellow members. They also worked with Modi to identify training needs such as keeping farm records (FN02082007), basic book keeping (FN20062009) and value adding⁵. They provided leadership for external role players by assisting researchers in arranging workshops for participatory problem solving and reflection on practice (FN27112008, FN18042008).

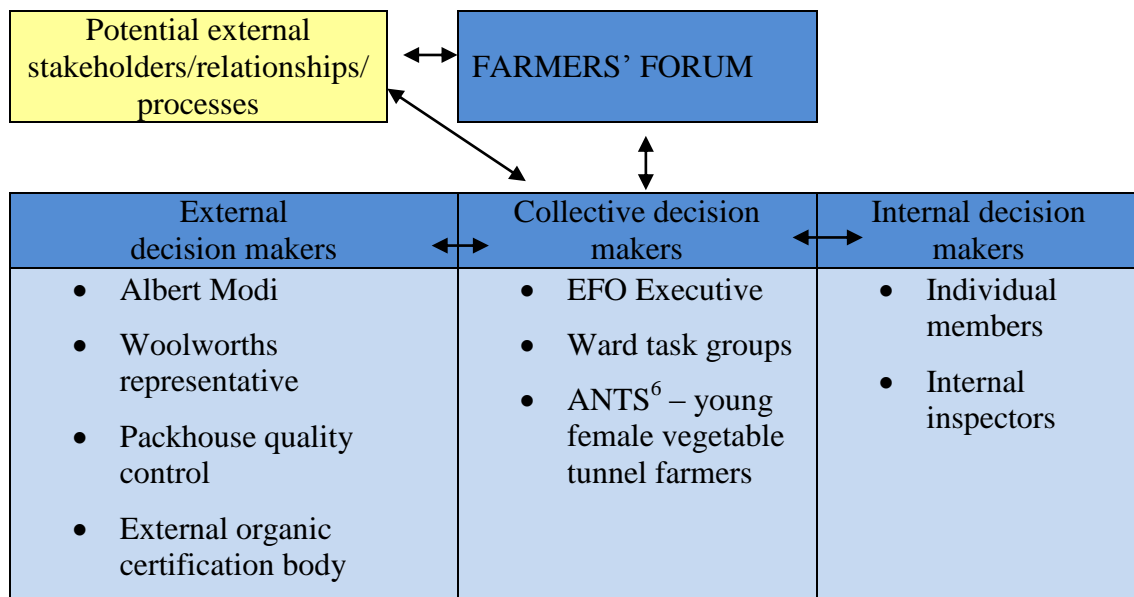


Figure 6.4 Layers of decision-making allowing accountability (extracted from field notes)

Monthly forum meetings provided a consistent space for members with respect to celebration, inter-stakeholder communication, community level decision-making and input from external sources. At these meetings, members of committees and bearers of

⁵ In our experience with the EFO, the Department of Agriculture was unable to mobilize or provide most forms of support required by the farmers. The Agricultural Extension Officer’s agenda was motivated by Departmental themes that had little relation to local priorities or processes.

⁶ ANTS is not an acronym. It was chosen as a name, because ants ‘work hard’ as do the female entrepreneurs!

roles and responsibilities were elected from time to time as determined by the constitution and in response to new challenges. The internal organic inspectors monitored individual field/homestead accountability in terms of the commitment to organic certification and helped the organisation prepare for external inspection by the external certification body (Figure 6.5⁷). The use of the term organisation here represents the structural interface between the farmers themselves and the external interest in their productivity. It is not a structure separate from the farmers, but is a rotating set of roles and responsibilities that are carried out by elected farmers themselves.

Over and above the participatory research agenda workshop that laid the foundation for all research projects during 2006-2009, we see evidence of *planning and vision* through the farmers actively seeking inspiration. An example of this was the mini-tunnel production project initiated by Business Management students at UKZN (SIFE-UKZN⁸). In 2008, the students approached the EFO forum with their idea of linking homesteads to intensive vegetable production tunnels. The Executive and EFO members felt that this supported a fundamental concern for motivating young farmers whose interests included entrepreneurship rather than labouring in fields. By the end of 2009, ANTS had formulated as a sub-grouping of young EFO female farmers, articulated norms and values through their own constitution and obtained development funding from Nedbank to fund a mini-tunnel for each member. Towards the end of August 2009, field visits reflected community satisfaction with seven fully functioning tunnels (Figure 6.6).

When we asked ANT farmers and housewives how the tunnels were working as businesses, the enthusiastic responses ranged from: ANT farmer's perspective; *I am able to sell my lettuces and cabbages to my neighbours – even my teachers⁹ give me*

⁷ In this picture on the right, we also see an example of the 'face' of Woolworths outside of forum meetings. The white man in the farthest right hand corner of the right photo has come with the SKAL representative (sitting at the end of the table on his right) to be available just to build relationship through answering questions and supporting the process.

⁸SIFE stands for Students in Free Enterprise. SIFE is a global non-profit organization developing business leaders that are using business to create a better, more sustainable world. SIFE-UKZN currently has 26 teams initiating projects under the guidance of a UKZN Faculty advisor. Their slogan is "your stepping stone to new horizons" (UKZN Website: www.ukzn.ac.za, 3 January 2011).

⁹Part of the ethos of ANTS is to provide incomes for young, single mothers who have children to support while still trying to complete high school.

orders. I have made 100 Rand since I began and I have used some of that money to buy onion seeds which I am growing in my tunnel to transplant into the fields (FN20082008); to a Housewife's perspective. We are very happy to have the vegetables being grown by these young girls. Even if we pay the same price as in town, we do not have to travel to buy them (FN20082008).



Figure 6.5 (L) Internal inspectors collating information and (R) meeting with SKAL¹⁰ and Woolworths representatives in preparation for an external audit (Caister, 28 February 2007)



Figure 6.6 The SIFE-UKZN students with the first (Minenthle's) tunnel 14 July 2008 and Nomusa's income earning business, 20 August 2009

Another explorative initiative arising directly from the farmers' research agenda originated from the workshop held in March of 2006. In this initiative, the researchers specifically acted as catalysts for an action learning process. This was the participatory soil fertility and companion planting of indigenous crops field trial.

¹⁰ SKAL is an international organization based in the Netherlands providing certification programmes for organic production. It is one of the bodies that Woolworths contracted to help with the certification processes.

On a recent Friday afternoon, when inspecting an on-farm crop trial, I asked a farmer why she was motivated to donate the energy and cost towards an experiment from which she could not eat or sell produce. She replied that when someone (referring to Modi) brings you something, you do not reject it. You match that person's effort with commitment. We also do this, she added, because we are always interested in learning and know that these experiments will benefit us in the future (Mrs. Mbila, 2007).

These trials were formally established in 2007 and 2008 as a joint learning experience between farmers and researchers¹¹. The design of the participatory process was built on recommendations from prior research with the EFO farmers on *amadumbe* production, and included addressing the newly identified problems of soil fertility, disease management and increased productivity required to increase yields over and above subsistence production. In 2009, farmers explored various options for incorporating what they had learned from the crop trials into their respective homestead farming systems. Field notes from farm visits during 2009, referred to in this research, were obtained while visiting homesteads which had participated in these trials. These visits offered researchers and farmers an opportunity to have unstructured conversations on the participatory experience.

Realistic responses

The second notion of individual and collective wisdom is *realistic responses*. From the researcher's perspective, realistic responses is the most striking emergent concept in this research and is chiefly responsible for the complexity, but also the ultimate ownership¹², of market-orientated agriculture. The first activity that the researcher became aware of was the co-operation involved in achieving the tonnage of *amadumbe* required by the market each week. Each ward had a systemised roster for contributing to the collective quantity for delivery. This schedule was worked out and agreed to through the farmers' forum. What this meant for the individual farmer was that he or she could produce

¹¹Charity Maphumulo (SANPAD Project participant, PhD candidate, UKZN, Department of Crop Science) documents and communicates this research from both an experimental methodology for measuring soil parameters and a social learning framework in her doctoral thesis, which is still in progress.

¹² What is meant by ownership is the capacity to choose a future in accordance with values and beliefs. Defining the meaning of ownership in this context is the purpose of this sub-section.

amadumbe for sale in proportion to the availability of resources (refer to Chapter 2, Figure 2.12) and still be given access to a market share. The result was equitable access to the market, even if the farmers were unable to contribute *amamdumbe* in equal amounts¹³.

The farmers have a distinctive interpretation of ‘commercial’ which does not fit with traditional high technology and large-scale agriculture (Figure 6.7). The separation of commercial production from subsistence was detailed in Figure 2.12, where supplying the market was achieved through opportunistic contributions to the market of subsistence crops (excess); increasing the amount of land utilised for *amadumbe* in crop rotations; and accessing additional land to increase the area of land used for *amadumbe* production.

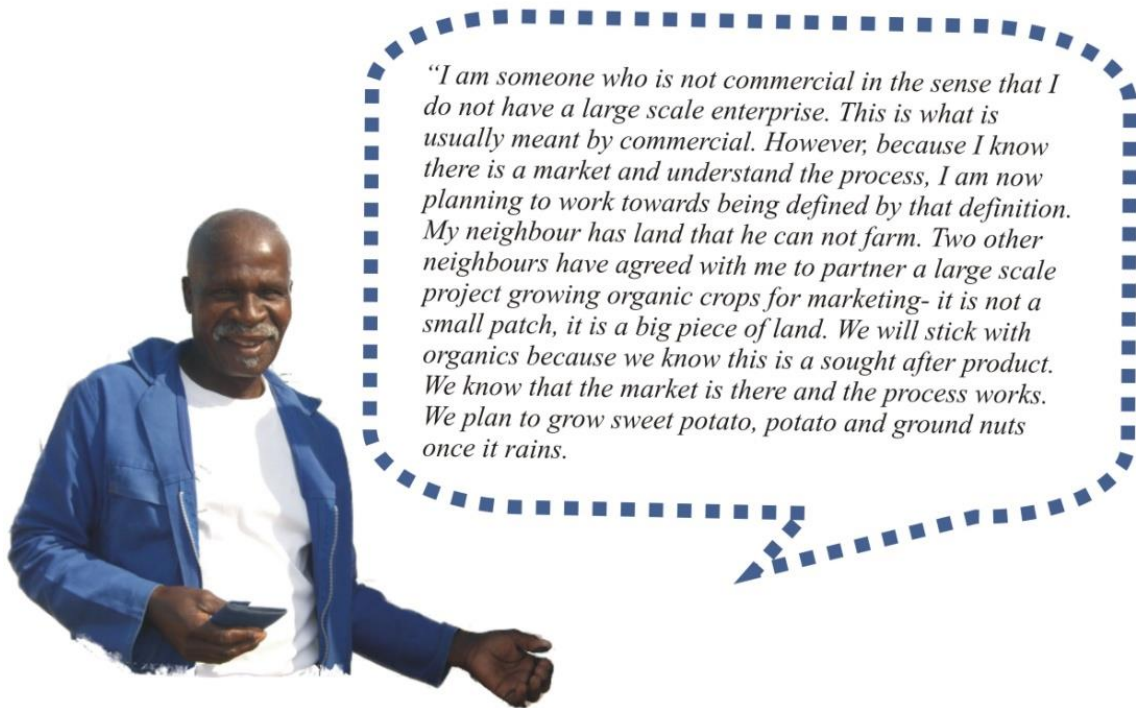


Figure 6.7 Baba Miya's reflection on the meaning of ‘commercial’ (19 October 2009)

As described in Chapter 3, critical resources at homestead level come and go depending on a shift in overriding priorities, coping mechanisms, or deliberate strategies. For some homesteads this included collective production in the form of community gardening during winter because labour was not needed for crop production (Ndlovu

¹³Contributing to the practice of ‘equitable agriculture’ identified in the constitution.

2008). Individual ownership of responses within the collective boundaries allowed some farmers to accept and others to reject opportunities offered. For example, while some homesteads rejected the offer of underground water harvesting tanks, because of social¹⁴ or physical reasons¹⁵ (FN06022006), a very few homesteads found advantage in this opportunity. One of these farmers, used his tank to manage water for his market garden (Figure 2.16). Where land is flat, farmers will use a tractor, if accessible, to relieve the labour of land preparation and planting. However, farmers explained that on steeper slopes, even when a tractor was available, they would still use draught power as it is less destructive to the slope structure (FN02082007).

These are choices, which portray that until they are sure of an acceptable alternative, these farmers are willing to operate within social, ecological and economically rational boundaries. As capacity is increased, the boundaries of what is perceived as possible shift or expand, depending on individual and collective priorities. This attitude and behaviour that accepts bounded realities is essential for creating sustainable futures. The present research views this behaviour as expressing a command of resources and behaviours as part of a holistic approach to maximising opportunity and with certainty of knowledge and practice. What is surfacing is recognition of the factors that stimulate agricultural activity – the enabling of a future arising from what the farmer already knows. The rationality being described focuses on distributing resources towards specific achievable goals designed to build assets and resources that include social institutions, food and secure living environments.

If the farmers were to spend available resources on maximising their individual contribution to the market, other priorities, such as subsistence production and social responsibilities could suffer. There is also the potential that gambling resources on meeting the market demand would result in loss of assets should the market not respond as expected (Morris *et al.*, 2001) and the value of home-grown staples in terms of nutrients, social order and planting material for next season would not be replaced by the cash exchanged. Current outsider terminology on such inconsistent behaviour might

¹⁴ “The space around our hillside homes is small. There is no room to bury our ancestors and build a tank.”

¹⁵ “Where would our children play safely?” “Who is going to dig these deep holes...we cannot do it ourselves”.

label this with judgemental terminology such as ‘free riding’ (Lyne *et al.*, 2008, p83) or simply label it as inefficient for the system because the effort required to keep track of it does not fit into the models used by economic analysis.

The attitude of patient and incremental increase of marketable produce is a behaviour that is rational if we are considering sustainability. The boundaries of what one can produce are expanded and when equilibrium is reached, the boundaries can be pushed again. This attitude is an entry point for intervention that seeks to build human and productive capacity and at the level of making resources available. For example, the small gain of selling excess *amadumbe* may remain forever an opportunistic exercise for some, in this context. Protecting this as opportunity is a collective choice, because there will always be people with more production capacity who will be frustrated by having reached the limit of their current market share. From a community perspective, however, this may be interpreted as a rational response to the inclusion of farmers with fewer resources or less capacity. This is a fundamental shift in thinking about formalising innovation. Who does the innovation benefit? Is it individuals in communities or formal systems trying to carry out research and development and what is the nature of that benefit? Cash is not always the only way to measure benefits. Is the R100 made over several months of labour in the ANT farmer’s mini-tunnel a waste of effort from the perspective of an economic model, or does this matter to the farmer herself or her customers?

A key informant in this study shared a Zulu proverb shedding light on a more ‘Afrikan’ view of worthwhile effort.

Lelephi told us that there is a Zulu proverb, ‘*Into enhleetandwaabantu*’, which translates roughly as, ‘something beautiful is something that is well appreciated by the people’. When I asked what this meant, she said *if you put effort into something and it is appreciated, then it is something worthwhile and you continue to do it because it is worthwhile* (FN19102007)

During a later visit to this same farmer (FN19082009), I asked Lelephi what the benefits of the project for her and her farming practice had been during the past three years. She said:

'I see it and it matters'. ...Farming is ...an effort worth doing, we just need the rain...Before the EFO, working in the fields was a way of life. We just did things for the sake of it being part of our lives. Women were expected to do something with their time and if they didn't work in the fields, what would they do all day? I didn't even notice what or why I did things or make observations about them. Regardless of how the harvest turned out, it was done as a 'way of life' and we didn't notice anything nor did we learn anything. However, I now have knowledge with which to think about what is happening with my farming. I can now 'plan' and 'see' the results of my efforts. At the end of the day, or while I am working, I can reflect on and learn from what I observe and do. I know how and why, and it is worth doing. I know how and why to rotate, my yields/crops are GOOD and I see it and it matters. I am aware of so much now and this encourages me to do it again''.

...The other thing is that now my husband has taken notice. Before, my farming was just something that he thought I did to spend time. Now however, he respects what I am doing and is willing to invest in my farming.

We can see that the attitude and behaviour of realistic responses allows for individuals and collectives to choose a future that reflects shared values¹⁶. This ownership of the process reflects conscious choices, in accordance with beliefs that include perceived and actual physical, environmental, social, economic and political boundaries. The present project suggests that research, which links into farmers' values and builds knowledge allows the beliefs and perceptions of those boundaries to expand with confidence as resources become available. The focus for development not only targets technology as a means of increasing well-being, but on attitudes and subsequent behaviour as a key leverage point for intervention¹⁷.

¹⁶It is this same capacity (attitude and ability to act within that belief) that makes the concept of interdependence work. You and I (market and producer) share values, therefore we can adopt behaviours that allow us to work together for mutual benefit.

¹⁷ Here again, we see support for tapping into the factors that stimulate social cohesion and agricultural activity.

Modernizing versus exchange

The third notion of individual and collective wisdom is *modernising*¹⁸ *versus exchange*. In his book, “Being African”, Mandivamba Rukuni challenges ‘Afrikans’ to retrieve their collective cultural memory and use this as a way forward to development and modernity. Roots for such a modernizing process are indicated in the Ezemvelo experience. The entire concept of the EFO commercialising project was to build on local agricultural knowledge and practice for production of *amadumbe*. But modernizing also includes the attitudes and behaviour, as described in realistic responses. What we observed were farmers using social contracts (in many instances), instead of cash, for accessing farming resources and inputs. Relatives were expected to help with planting and harvesting when they visited from urban areas (FN23102005). And, as a further example, in the following excerpt from field notes, sisters exchange labour for the use of a field and a neighbour pays back cow-related damages following harvest, by supplying manure at planting time (FN19082009):

Lelephi will plant a section of Spongile’s field if she can acquire enough planting material. The last time she had harvested, she left the planting material (amadumbe) to one side when she went to deliver her bhavs¹⁹ for transport. One of the neighbour’s cows demolished (ate) the pile. The neighbours apologised, but also had no planting material. However, Lilephi gets manure from them for free and did not want to upset this relationship, so she accepted the apology and left the matter. While we were watching [researchers were standing watching the tractor plough], the neighbour delivered four wheelbarrows full of manure to the edge of the field (no charge for loading, pushing across the valley, down then up, and depositing!).

Unmarried female farmers (those wishing to be commercial growers) may access land through their male relatives (FN12092008). The use of land, its surfaces, is about relationships not about capital. Because of this, land is accessed through consultation

¹⁸ The use of modernizing is not the meaning found in development literature. Here it is being used as a term picked up from the data to use as a label for a category and not a definition of a linear trajectory. The emphasis in the research is on the reorganization of the status quo to effect an emic vision.

¹⁹ *ubhavirus* is isiZulu for bath. ‘Bhavs’ is the way the word sounds when spoken. These are large plastic or enamel basins that typically hold about 14kg of *amadumbe*.

from a community owned and recyclable resource (refer to Figure 2.22) and is used for family 'well-being'. In the example below, one farmer describes how his attempts at negotiating with neighbours for more land have impacted his relationships (FN190809):

...These neighbours have joined the EFO as a result of our negotiations and we are now waiting for the Chief's approval to use the neighbours' land. We would not have thought of this before the EFO because we would not have known what to do with the excess food.

I asked: How do you know the chief will respond favourably and also what security do you have about 'use of land' – what if the chief makes a different decision and you have invested irrigation and your effort and planting materials?

...the chief cannot do that – it is inconceivable in our culture. The chief is the care-taker of the process – he does not own the land. The people own the land. The chief's role is to give authority for the agreement of using the land – this land belongs to the original neighbour and does not change hands. In the event of conflict, the land would revert to the original owner...ownership of land in the form of a title deed would not make any difference to my farming.

Most people in development circles are aware of the implications of communal land tenure²⁰ not fitting into any current formalised structures and processes supporting commercial agriculture. Although we saw co-operation and innovation blending a 'market' orientation with a 'subsistence' orientation, the use of land for individual gain, at the expense of other community members, could be perceived as exceeding acceptable boundaries and abuse of communally owned resources. This has very real implications in African social agronomies, because expressions of jealousy or other forms of dissatisfaction or suspicions about incorrect social order or behaviour can lead to the linking of supernatural forces to the material world. In the words of one farmer²¹:

...I had been sick for a long time and my farming was suffering...it was when I went completely blind that I realized that the amadlozi²² were

²⁰ See Definitions.

²¹ Any identifying detail has been removed, as a courtesy to protect the identity of the informant.

²² Amadlozi is the isiZulu name for deceased family relatives who look after the well-being of individuals or family.

trying to get my attention....I was being chosen to deal with their anger at...(a relative's behaviour)...I could not work in my fields and my crops suffered...I also had to spend time during the growing season in training...and I had to spend money on purchasing animals for sacrifices...when I satisfied them (the amadlozi) with compliance in becoming a Sangoma, my sight came back instantly....and they have given me powers to see. At night in my dreams they show me not only where to find useful herbs, but they also alert me to people stealing my crops. I can actually see when they are in my fields and I can wake up and chase them away....”

As agricultural scientists, we tend to think that the efficient production of produce is the priority of farming. As participatory researchers, we learned that ‘farming’ in this context competes with other priorities and values for resources, and we came face to face with the challenge and reality that within trans-disciplinary knowledge production, science must acknowledge and work within the African view that the spiritual world impacts the material world.

What we are also seeing is an innovative manoeuvring within the boundaries of a traditional rural way of life – a manoeuvring that has led to negotiated access to land and platforms for addressing communication issues between farmers and markets. The interpretation of this movement is a transformation leading towards modernising without the loss of accountability or sense of identity and is virtually (cash) debt free. The shape of this transformation challenges the concepts of land as capital, farm size and production capacity so ingrained in the dominant concept of commercial agriculture represented by agri-business and farming as units of commodity production. The value of the effort may not be recognizable in terms of formalized economic models, but both Woolworths (as we shall see in the next section) and the farmers behaved as if this commercialisation was beneficial.

6.1.2 Incrementally integrating accessible opportunities based on values

The building of this concept shows how leadership, realistic responses, and modernising are being used, in the making of decisions concerning commercial *amadumbe* production (Table 6.2).

Table 6.2 Emergent concept of incrementally integrating accessible opportunities

Conceptual categories	Emerging patterns and characteristics	Selections from coded information
Incrementally integrating accessible opportunities ‘values-based behaviour’	Choice	Maintaining adaptable farming strategies Avoiding credit debt through social networking Submitting to organic certification process Production based on anticipated demand
	Innovation	Reallocation of subsistence resources Researcher/farmer partnership Encouraging youth

Adding to the existing farming and social system, as and when people are able to, was an observable pattern. Characteristic of farming decisions over time was the farmers’ retaining the freedom to *choose* diverse farming strategies, while still submitting to the organic certification process (Figure 2.12). For instance, they increased production (as opposed to using credit) through the use of social capital, innovative land use and re-allocating cash or using excess cash to pay for a competitive edge. The pattern itself was of raising production to anticipated demand, re-establishing equilibrium in the farming system and then planning for the next step, which may or may not have been an increase in the scale of production. What we observed was that farmers would reallocate subsistence farming land for commercial purposes in the following ways: cycle *amadumbe* into their current planting rotations and sell the crop, clear unused land so that space for *amadumbe* would increase without impacting subsistence requirements, and acquire more land in order to have dedicated commercial crop production. Expansion was dependent on perceived market demand from the previous season (rather than the anticipated *amadumbe* price) and the individual ability to exert effort and afford the cost of inputs.

Innovation

Transformation is a never-ceasing process. It is a negotiation between present and future not an end point. Available resources change in their significance through the opening up to new opportunities and experiences. This is demonstrated through the following three examples from field notes of choices that Ezemvelo farmers have made. In these examples, the transformation can be abstracted to either relinquishing or

adopting, depending on perspective, innovating through rearrangement and or innovating through adding new technology to the system.

In the first instance, the farmer chooses to abandon her family's practice of growing cowpeas when she marries an Mkhize, because she is adapting to the practice within her husband's clan²³. The knowledge remains (for her lifetime), but will most probably not be 'known' by her children unless this is reinforced by some practical involvement in growing cowpeas.

....if my family do not eat it, I do not grow it. My family from over the Illovo River eat a lot of cowpeas. A favourite dish is to mash them into imfino. But my husband does not eat them, therefore I do not consider its potential as a crop (FN12092008).

In the second example, the farmer demonstrates a logic that encapsulates the innovation potential of the participatory development process. He clearly expresses how, in his own thinking, he can maximise and reallocate resources to achieve the same result (production of *amadumbe*), but for a new and different purpose. The market incentive is a welcome goal for his knowledge and skills. He, along with many other farmers and their families, are very tired of eating *amadumbe*.

...Amadumbe are a lot of hard work and we are tired of eating them, too. I can grow them because I have the knowledge, but I don't have to eat them now because I can sell them to the market...and get cash for the other things I need (FN26042007).

In this next example, we see how the farmers have come to conclusions which are expressed as patterns of behaviour based on their deepening consciousness of ecological principles while grappling with the demands of commercialisation. This is an example of the flexibility exhibited when farmers are encouraged to think through the options open to them. Maintaining this flexibility of practice requires supportive structures and processes. Keeping draught animals has social and political implications; expanding production onto land that would normally not be used has ecological implications; operating and maintaining a tractor requires new skills, attitudes and knowledge. The

²³*Ibumba* – cowpea, known by the old people here as *indumba*, now known as *ibumba*. In Zulu culture, it was believed that the *ibumba* made you forget, therefore when the Sangoma's told the Mkhize clan 'do not eat it' –the local use and knowledge of it died out (FN22112006).

farmers' solution addresses the fundamental ecological and social concerns through maintaining the capacity for traditional technology (draught power and hand hoeing), while incorporating new technology and new resources.

...at Siyazama in lower Ogagweni the farm lands are very hilly. Mr N uses draught animals (oxen) to plough across the steep slopes (as do all the farmers whose land is steep). Mr N explains that using a tractor damages the soil on the slopes and causes erosion; therefore it is only used on the flat areas (FN02082007).

This ability to remain flexible increases complexity requiring even greater trust, co-operation and supportive structures. Where do the cows graze; how are they kept out of the lands set aside for growing food and commercial crops? Who owns the tractor (an expensive asset) and who has the knowledge to operate and maintain a tractor as an economic resource to the community? One of the ideas that the researcher had to suspend in this study was her concept of sustainability.

I used to think that sustainability meant living within natural limitations. But I have learned from this study that it also means transformation constantly conscious of submission to boundaries; boundaries that are part physical, part social, part economic and part environmental.

If the mind-set we bring into the situation determines the boundaries or outcome, transformation is made possible when we are able to recognise opportunity, create opportunity and explore options available, while evaluating their consequences and reflecting on the possibility of unintended consequences (Figure 6.8). We can now argue that sustainable development is a paradigm shift from within and we are better able to address the question of what we are becoming. For example, organic agriculture is a philosophical choice for EFO farming based on local realities, local knowledge and skills. Integrating this understanding with an increasing consciousness of how to maintain fertility in more intense land use and planning also happens to be consistent with the academic literature and growing theory around eco-agriculture. The choice to use organic certification as a marketing strategy was perceived as adding value coherent with the 'way of living'

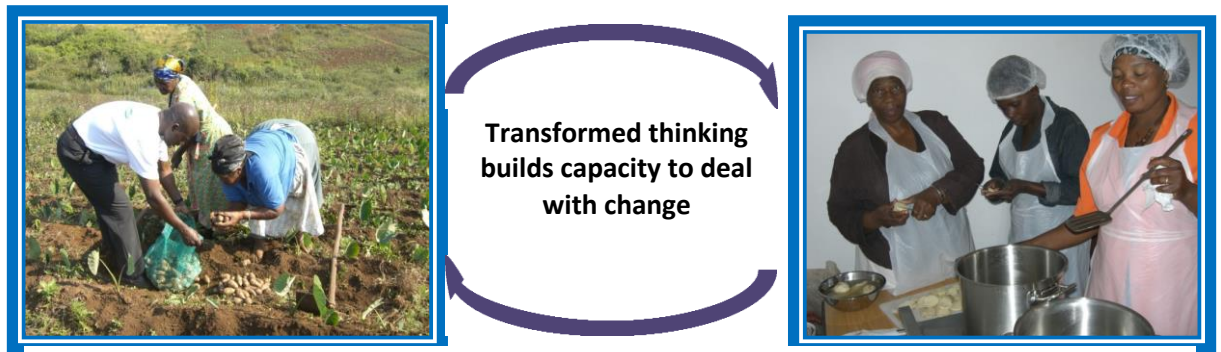


Figure 6.8 Recognise, create and explore; the essence of dealing with change

When the opportunity arose, farmers embraced an *innovative* researcher relationship, participating in producing knowledge through on-farm crop trials and other activities of the SANPAD Participatory Project. They encouraged the female youth through ANTS to farm in a way that suited their values and beliefs and they utilized a variety of complex but available transport options until, as a collective, they had enough money to pay cash for a tractor and vehicle. Now that they have a reliable tractor and have established a collective ploughing rotation, individuals can choose to use it in order to save cash, time and effort.

6.1.3 Learning for livelihood sustainability

The following exploration of results describes how the capacity to co-operate opened up the possibility for social change by establishing new norms and behaviours for interaction that provided economic opportunity, while preserving and creating new forms of social cohesion. The theoretical idea of sustainable livelihoods includes the ideas of opportunity and fairness. In the farmers and the markets moving towards each other, in terms of shared values and beliefs, we see a reflection of power that promises a more equitable sharing of constraint and enablement (Table 6.3).

Overcoming resistance

‘*Overcoming the resistance*’ to a market-related ‘way of life’ is an idea which seems to be full of common sense, but requires uncommon wisdom to resolve. Having a culture is a prerequisite for a social context, but when two cultures clash it is because they have no handles for understanding each other. The higher the level of misunderstanding, the greater the difference in culture and communication entails not only language, but agreement over traditions, customs, beliefs and values (Bate 2002, p5). A significant barrier to market-oriented production was *trust* (Appendix 4-3, pi,iii). The culture of

the market and the culture of the rural dweller are far enough apart, that misunderstanding and differences in values offer the greatest potential for resistance. For example²⁴, the farmers had understood that the market looks for professionalism, identified in the ability to produce a specific quota, deliver a product of a specific size and perception of quality, year-round availability of the product, and a depersonalised and therefore efficient and objective means (organic certification) of carrying out business transactions. The farmer, on the other hand, also wants the market to purchase his vegetables with an understanding of the effort that it takes for him/her to produce it. The farmer is looking for a relationship – he wants the market to value who he/she is and the hard work and values behind productivity (Appendix 4.3, pi,iii).

Table 6.3 Emergent concept of learning for livelihood sustainability

Conceptual categories	Emerging patterns and characteristics	Selections from coded information
Learning for livelihood sustainability “more values-based behaviour”	Overcoming resistance	Trust levels are the barrier for market-related production Key presence AND face-to-face contact Sharing power over the resource
	New mental models	Markets: The challenge of valuing the farmers themselves instead of just the produce by removing barriers for producers, Farmers: <i>Amadumbe</i> = cash generator (rather than food) Understanding <i>why</i> allows farming activities to be deliberate
	Interdependence	A bargaining tool Knowledge production/farmer relationship

Overcoming the resistance of subsistence productivity to commercial productivity and the markets’ high expectations for quality produce was partially supported by the appointment of a *gate-keeper* by the EFO. Usually a gate-keeper is someone from within a community. In this case, the gate-keeper (an external actor) was assigned an insider status by the community. In addition to being trusted by the community, he was also trusted by the market. He was willing to take a leadership role, had relationship skills familiar to both the market and farming cultures and the agricultural technical knowledge and skill to use dialogue effectively to negotiate between the market and the

²⁴ drawn from discussion at Farmer Forum Meetings

farmers. The role was part gate-keeper, part negotiator and part catalyst for research and development. He defined his role as a key presence and face for both sides. His challenge was to build a relationship between the market and the producers and channel both stakeholders' particular set of ethics towards a long-term shared commitment that was perceived as equally beneficial.

Sharing power.

The farmers had regularly discussed the desire to have their own packhouse. They saw this as a way of adding value within the community and an important reason why an EFO member went to work with the Farmwise Pack House²⁵. Employing a member of the EFO was a deliberate commitment by the Farmwise Packhouse to empower a local farmer with the knowledge and skills necessary to run a packhouse. In 2007, an organisation²⁶ addressed the EFO offering funding to establish a local packhouse. However, the Woolworths representative at the time stated categorically that they would not purchase any *amadumbe* coming from such a negotiation, as the proposed funders were not committed to organic certification standards. Although the farmers were upset by this and responded initially by expressing the sentiment at a farmer forum meeting as 'how dare Woolworth's tell us what to do'? They also asked 'Who owns the *amadumbe*?' and it was at this point of recognition, 'We own the *amadumbe*', that the concept of *interdependence* emerged.

The farmers realized that the market wanted the *amadumbe* and that they, the farmers, owned the *amadumbe*. The farmers soon realised that consumer demand transformed the *amadumbe* into a bargaining tool for an 'indigenous and organic' market niche. The farmers chose to respect Woolworths' point of view and further negotiation now shifted to a deliberate choice and submission to shared values, the standards of organic certification. This marked a significant move in mind-set from subsistence production to market production.

²⁵ See Chapter 1, p1.

²⁶ Name withheld for political reasons.

Market learning.

The institutional learning through Woolworths “Good Business Journey” impacted Woolworths’ ability to engage with the EFO farmers²⁷ (Figure 6.9). Their increasing consciousness of farmers as potential partners in sustainable, high-quality, food supplies enabled them to see that committing to farmers contributed to success through the opening up of opportunities for building capacity (Table 6.4). For example, generating market niches through branding traditional and organic as desirable products and subsidising organic certification created a scaffold on which farmers could test their market-oriented production. The market supported platforms for opening up community-level discussion around expectations, miscommunications and values (refer also to communication channels in Figure 6.3).

Commitment to the outcomes of this learning was expressed in the establishing of new norms and patterns of behaviour on both sides. From Woolworths, there was the commitment to the farmers that led to co-operation with the complexity of collective supplies of *amadumbe*.

Removing barriers to marketing by subsidising organic certification not only gave the farmers a market niche, but also contributed to Woolworths’ cultivating trustworthy suppliers. This was a trustworthiness not just defined from Woolworths’ perspective, but also from the producers’ point of view. In the challenge from the farmers to add more ‘face’ in their relationship and dealings with the farmers (Appendix 4-3), Woolworths learned that valuing the effort of the farmer was important. They realized that commitment to them as producers reflected an appreciation for the integrity and effort of the farmers themselves within the farmers’ own valuing of equitable, sustainable and economically beneficial agriculture.

In embedding research in a participatory action research paradigm, researchers largely addressed farmer priorities for production alongside of each other. However, the dialogue within the committed relationship helped researchers to move beyond their

<p>Principles of Woolworths Good Business Journey</p> <ul style="list-style-type: none"> ❖ Accelerate transformation ❖ Drive social development ❖ Enhance environmental focus ❖ Address climate change <p>(Woolworths, 2010)</p>

²⁷ Dr. Johan Ferreira of Woolworths presented the history and rationale of Woolworths’ Good Business Journey at the Msunduzi Innovation and Development Institute Mini Summit on Food Security and Local Economic Development, held in Pietermaritzburg on 13 October 2009. The researcher had a chance to interview him afterwards.

discipline priorities and become more conscious of how people shape agriculture and how agriculture is shaped by people within a particular agricultural landscape. This is important for agricultural scientists in understanding sustainability as a system response rather than simply the economic benefits of production (Figure 6.9)

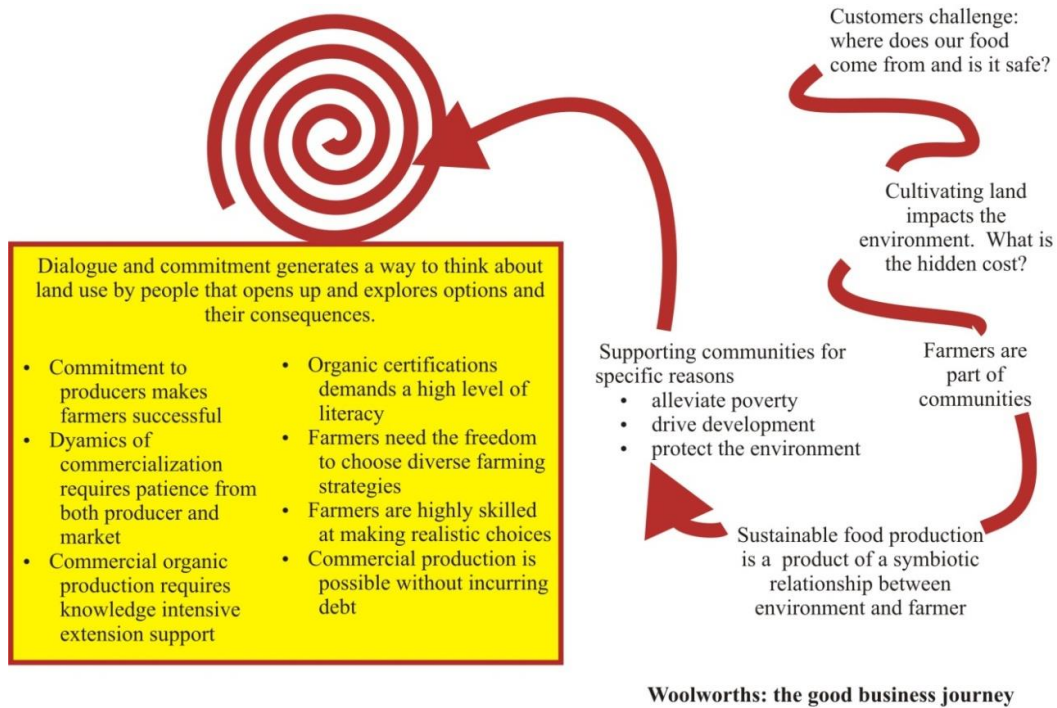


Figure 6.9 Woolworths’ impact on the EFO commercialisation process

Table 6.4 Criteria for Woolworths in overcoming resistance to small-scale agriculture: Woolworths’ movement towards farmers’ values and beliefs

Woolworths’ Movement	Examples of roles played in this movement
Simple supply chain	-removing barriers for producers -use of packhouse also committed to farmers’ success
Markets and farmers sharing cost of sustainability	-valuing the farmer and his effort -valuing the produce as part of the cost of environmental disturbance -supporting eco-friendly agriculture
Social commitment as a business practice	-more face in relationships -commitment to farmers makes them successful -building loyal suppliers for the future
Caring for Woolworths customers’ perceptions and beliefs	-guaranteeing nutritional quality of food -ethical agrifood-chain management

In a similar movement towards the market’s values and needs, the farmers set out to understand what made their relationship with the market successful. This new farming practice was informed by what the farmer needed to know in order to nurture the

available resources for production, produce *amadumbe* of the desired quality and engage with the market (Figure 6.10).

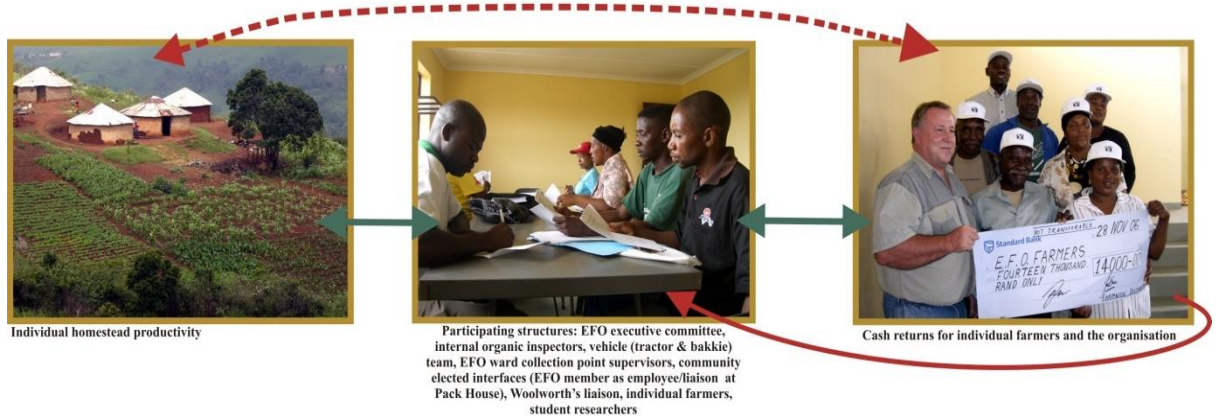


Figure 6.10 Overcoming resistance through determining agendas and establishing norms

For the farmers, deliberate decision-making fell into three main areas: avoiding vulnerability in producing the *amadumbe*; relationships with external players; and collective co-operation and decision-making that helped build a ‘new’ agrarian culture from the old (Table 6.5).

Table 6.5 Overcoming Resistance: decision-making characteristics found within the EFO

Interpretations	Supportive examples drawn from open coding of field notes
Risk-averse agriculture	<ul style="list-style-type: none"> • Retaining decision-making power • Incremental expansion of <i>amadumbe</i> crop (see Figure 2.12) • Land tenure through negotiation rather than cash or credit • Inputs through negotiation and social credit systems
Negotiation in the local currency relationships is the	<ul style="list-style-type: none"> • Negotiation with household requirements and available land for scale of enterprise, inputs, production activities and consignment schedules
Collective co-operation with the market as a participant	<ul style="list-style-type: none"> • Learning role in packhouse • Interface role for packhouse employee • Woolworths visits with farmers, participates (celebrates with farmers) in award ceremonies
Collective decision-making with market as a participant	<ul style="list-style-type: none"> • Formation of an organisation with formal constitution • Election of a gate-keeper for the EFO • Packhouse adopts experiential learning role • EFO members explore the role of research in their development
Bridges between the farmers and markets are formed	<ul style="list-style-type: none"> • By knowledge, which gives the confidence to compromise • By equity in power and reward relationships (built through trust) • By trust between participants

Farmer learning. For the farmers, a mental shift (critical for shifting from subsistence to marketing) was the realization that because there was a consumer demand for *amadumbe*, this ‘food’, boring to eat and labour intensive to grow, was a sought-after ‘organic vegetable’ cash generator. Farmers also had to learn the quality requirements for marketable *amadumbe*; a seemingly small condition, yet one which was critical in terms of moving from a subsistence to a market mentality.

The following story illustrates a contributing event that led to this shifting in mind set. The EFO farmers eat the middle corm of the *amadumbe*, as it has the most flavour (Figure 6.11). However, it also has two scars when harvested and the market graded the outer corms as more desirable as they only had one blemish. The farmers were frustrated over the market not preferring the better-tasting corm. Not only was this wasted if not taken by the market, the outer corms took longer in the production cycle to reach the size required by the market.

Two problems had to be overcome. It was perceived that the market doubted the farmers’ credibility (‘we know which is the better tasting product’) and ‘what do we do now with the wasted bulk of production?’ To overcome the first problem, the farmers had to shift their mind-set to understand that ‘minimum blemishing’ was critical for consumer acceptability. For the second problem, researchers were able to pick up on this as an opportunity to conduct experiments on starch quality and content in order to identify a suitable market for the middle corms in the food industry. The learning point, however, was the increasing consciousness of moving from *amadumbe* as food (subsistence) to *amadumbe* as something to exchange (market mentality).

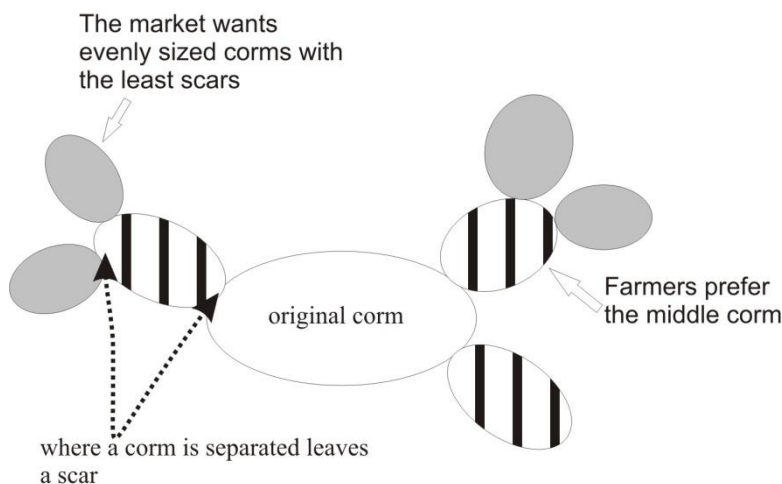


Figure 6.11 The development of *amadumbe* corms

6.2 Being together in the world; tapping into social cohesion and stimulating agricultural activity

Trans-disciplinary research transgresses disciplinary paradigms, focussing on a heterogeneous domain, rather than a discipline, and produces three types of knowledge: systems knowledge, target knowledge and transformation knowledge (Hirsch-Hadorn *et al.*, 2008, p19; Gayraud 2005, p12). Participatory research is informed by a response to the people involved. It is concerned with knowledge as power and learning is a central part of the research process (Sohng 2005). Therefore, in dealing with uncertainty from a research perspective, transformational knowledge is central and the consciousness of this arises from the participatory process that builds capacity as the farmers and researcher reflect on reality.

Discourse, as described by Gee (1990), is not merely stretches of language, but the way in which people are *together in the world*. Gee proposed that, since social groups organise their lives around concepts, purposes, values, beliefs, ideals, theories and notions of reality, the capacity for orderly thought or procedure available to them would be the way in which human life was given meaning. An assumption of this analysis is that the core of sustainability is in fact about ‘being together in the world’, both now and in the future. Building capacity for two discourses to merge not only relies on effective technical knowledge, but also on a process that strengthens relationships. How farmers manage the relationship between cultural knowledge (both the old and the new) and technical practice is another leverage point for facilitating flexibility and options that makes possible innovation and resilience in communities. What follows here is an account of factors identified as characteristics of ‘being together’ with the EFO as farmers and their market moved towards each other and towards a more sustainable future. Some are familiar, in that they have been described in the previous analysis and are now being reinterpreted to draw further meaning. Others are being added and therefore linked by the use of references to field notes or quotes as their grounded source.

6.2.1 Tapping into factors which contribute to social cohesion (Table 6.6)

Acknowledge leadership: the role of a gate-keeper/patithlalo

At the very first meeting with external stakeholders in the participatory SANPAD Participatory Project, EFO representatives made it very clear that they had elected Modi

as their gate-keeper, the one through whom the EFO would interface with external institutions, personalities and processes (Stakeholder meeting 21 October 2005, held at UKZN). This was clearly understood as a leadership decision from within the organisation. It implied that leadership was decisive; that there would be a particular personality influencing decision-making and that the farmers were comfortable with this option. This role emphasised the importance of dialogue/inclusive discussion, representation of household, of community, of researcher's perspectives and of external interests.

Negotiating for inclusion

Deliberate attention to the local norms and practices in terms of social inclusion of external people interested in the EFO commercialisation process were always considered a priority. Although deliberations had already occurred within the EFO, the first step that formalised the inclusion of external participants with internal stakeholders in the Project was an *opening of dialogue* arranged by Modi. Appendix 4-5 shows a pictorial summary of this process. At this meeting, which included visiting individual homesteads and sharing a meal, a formal process of informing the EFO executive of the project, and the requesting of permission for researchers to develop a research agenda based on the farmers' knowledge requirements, was presented (FN10222005). From their previous relationship with UKZN (Table 2.2) EFO farmers knew from previous experience, that UKZN researchers were expected to 'do research' and write papers as part of their academic process. But the process of being negotiated into the farmers' agenda for development helped student researchers (as new-comers to the process) realize that legitimising our involvement relied on us following socially responsible decisions and actions that could be acknowledged as personal enhancement, subject to the greater purpose of the EFO. Our credibility as partners in the process relied on continued appropriate attitudes and behaviours in our interactions with farmers.

Table 6.6 Factors that contributed to building social cohesion in the SANPAD Participatory Project (2006-2009)

Concepts of ‘being together’	Characteristics as observed in the SANPAD Participatory Project
Acknowledge leadership	Role of the gate-keeper
Negotiating for inclusion	Participation allows “ownership of the agenda” Identification of knowledge needs Using available resources Experiential learning for best practice in production methods
Envisioning a future	Formal community structure with a clearly articulated agri-business vision Organic agriculture, organic certification The process of co-operative production and access to markets Perceived economically viable strategy that does not compromise cultural integrity
Land utilized as a recyclable resource	Participants stories of land allocations and regulating processes
Responding realistically to market-oriented production	Incremental integration Conservation approach to land preparation Collective supply to market Flexible production patterns
Adopting sustainability factors inherent in the existing system	Interpreting organic agriculture as ‘traditional’ farming practice Building on local capabilities Avoiding external dependency

Once dialogue had been *opened*, farmers could include the research team in the challenges of filling knowledge gaps created by the commercialisation of *amadumbe*. Researchers were able to identify and clarify with farmers which aspects of the commercial production of *amadumbe* were in need of knowledge beyond local understanding and resource management practices. This became the *research* agenda for the SANPAD Participatory Project. Farmers donated land, planting material and other locally available resources to experiment with science’s experience of ‘best practice’ in adding to local knowledge. Researchers learned that the participatory nature of the approach relied on *ownership* of the agenda rather than on the tools or methodology used to achieve co-operation.

Envisioning a future

By 2005, the EFO had established a clearly defined local objective in terms of the pathway for development. The farmers had used social cohesion to formalise a community co-operative structure with a deliberate agri-business vision. The vision

articulated the ethics of ‘organic agriculture’, the process of ‘co-operative production and access to markets’ and an ‘openness to innovation and technology’ in the pursuit of agriculture as an ‘economically viable strategy that does not compromise cultural integrity’ (EFO Constitution Document, Umbumbulu, KwaZulu-Natal, 2001).

Perception of land tenure as a ‘recyclable’ resource for future generations reflects a traditional way of life and is fundamentally different from the usual understanding of commercial land use. Land was perceived locally as a resource for the purpose of sustaining life for humanity²⁸ as opposed to an individually owned piece of real estate (Figure 2.22). Because of this history, social and productive obligations continue to affect the allocation and use of land for agriculture (Figure 6.12). For example, one EFO farmer, an unmarried female, accesses land for commercial farming from her brother, who represents (is the head of) the ‘household’ in which she was born.

Responding realistically through values-based behaviour

The overall pattern for supplying the market reflected an incremental integration of accessible opportunities for increased production (Figure 2.12). Opportunities for increasing production came from access to ploughing, as opposed to hoeing (more land can be utilized), perceived demand from the market (more demand, more area planted) and anticipating good rainfall. Supplying the market’s demand through a collective delivery allowed farmers the dynamism of producing according to their opportunity and ability. On individual farms, while still submitting to organic certification as their production and marketing strategy, farmers retained the freedom to choose diverse production patterns in terms of scale and technology. These patterns responded to the availability of resources such as manure and planting materials and were influenced by the effort involved in production, anticipated market-demand, reallocation of existing resources and avoidance of bank loans. Interpretation of the motivation for commercial farming drawn from farmers’ descriptions of their market-oriented activity could be described as opportunistic (people who sell excess), farmers (dedicated fields for the market), vegetable growers (grow intensively in gardens) and ‘business’ (tunnels for intensive vegetable production).

²⁸ An email interview with Professor Modi on 17 November 2012, implies that the use of land for productive purposes is used to produce food for the survival of humanity

Researcher Memo

I keep asking the farmers; how does one acquire land, are you not afraid of losing it? I am really trying to understand the concept of tenure within the local culture. The responses are always one of being perplexed – they have individual use of land which is very clearly identified, but they seem to be confused by my need to clarify whether they are guaranteed the use of the land in the future. The concept of ‘tenure’ is different in the African world view. For example, when I interviewed Mr Mbili, (FN200607) his response to my questions about visioning were – “There is no reason for me to plan on behalf of the next generation. I will not plan anything that means my ‘son’ must carry on with it, he must make up his own mind about how he will farm and what he will do. I only plan for my own farming goals.” Mr Zephenia Mkhize also seemed perplexed at the idea that the Nkosi would even think of taking away land that was being used. I think that we (outsiders) see land as a commodity – their (EFO farmers) perception of land and the use of land is integral to ‘living’ hence farming is not a ‘separate economic activity’ but a family activity. This is reflected again in (the comment made by Mr Ndlovu’s niece “this is what we do”. Again, the Mkhize wives (FN10012008) said to Charity – it is unthinkable that a woman would not work in the fields – what are they going to do all day? Mr Ndlovu states: My father was given land by the chief. When I die, my son gets ownership of the land. The Nkosi approves and notes the transfer. No money changes hands between father and son. When the son dies the Nkosi again negotiates/approves the land requirements for the next generation. Farmers Mbili, Z Mkhize, and Miya all asserted that: land is not sold; chiefs would never allow that to happen.

Figure 6.12 Reflective memo on use of land, 19 August 2009

Adopting the sustainability factors inherent in the existing system

The commitment to organic cultivation was identified by the farmers as the closest outsider interpretation of traditional agricultural technology. Organic certification of the traditional practices legitimised traditional agriculture as a cutting edge commercial strategy. Using local resources, addressing soil fertility without the use of chemicals, preserving bio-diversity in planting material and relying on working with nature, rather than controlling it were all practices that laid the foundation for, or ‘way of being together’, as the expectations of organic certification were interpreted. These built on local capabilities rather than replaced them. In this way, traditional agriculture was adapted, rather than replaced with something that displaced local ways of planting, harvesting and management of social relationships.

A clear advantage of the incremental integration, already mentioned (Table 6.2), was that farmers were not pressurised into replacing or scaling up their production through the use of bank loans. Production could avoid significant dependency on external resources, except for access to commercial markets, which is a challenge for all agri-business.

6.2.2 Tapping into the factors which stimulate activity for commercial agriculture

Reshaping the function of traditional agriculture.

The impact of participatory experiential learning in the form of field trials was useful in reshaping the function of traditional agriculture. This adaptation required attending to the issues associated with intensifying production and recognising the factors that shape market acceptability. This was associated with the increasing consciousness of farming, not only as an end in itself, but also in its use as a stepping stone to mainstream economic activity.

Reshaping the relationship of market with producer

The recognition by the farmers that they ‘owned’ the *amadumbe* was significant because farmers realized that not only had the *amadumbe* become a resource for generating cash rather than a source of food, it was a tool for bargaining with the market. Part of this realisation must be attributed to the market also responding with a values based behaviour, in that they were committed to working through supply and quality issues with farmers in order to eventually achieve a sustainable supply for their demand. Entwined in this process was the acknowledgement from both sides that the farmers needed more ‘face’ in their *relationship with the market* and the market needed specific quality criteria to be met (Table 6.7).

Table 6.7 Factors that stimulated agricultural activity in the SANPAD Participatory Project (2006-2009)

Concepts of ‘being together’	Characteristics as observed in the SANPAD Participatory Project
Reshaping the function of traditional agriculture	Intensifying production Understanding market acceptability Farming as a stepping-stone to mainstream economy <i>Amadumbe</i> perceived as ‘cash’ not ‘food’ <i>Amadumbe</i> recognized as a bargaining tool
Reshaping the relationship of market with producer	Dealing with community requires more ‘face’ Dealing with markets requires specific criteria to be met

In exploring how the farmers of the EFO attempted to address the challenge of encouraging farming as a continued way of life, in the context of the SANPAD Participatory Project, it became obvious that by ‘envisioning a future’ the farmers of the EFO began a journey towards ‘being together in the world’. The theory of systemic integrity emerged, as a result of the transformational learning that helped to overcome resistance and build capacity for the vision of a sustainable future (Table 6.8).

The question of the present research was to interpret how the farmers of the EFO were able to move towards market-orientated agriculture from within a traditional farming agricultural practice. This research identified that ‘successful’²⁹ commercial homestead agriculture was the result of leveraging for the accommodation within a traditional agronomy that relies on available resources and local knowledge for sustainable market-orientated agronomy. Influencing the change was the impact of informed decision-making, which brought the stakeholders together through the sharing of values and beliefs. This leveraging was achieved by using the market-orientated production of *amadumbe* for tapping into the factors that sustained and created social cohesion, as well as those that stimulated agricultural activity. This emphasis encouraged the capacity for development and cultivation of sustainability.

Table 6.8 Emergent theoretical concepts

Theoretical constructs	Theoretical concepts
Capacity for development	Envisioning a future Transformation through overcoming resistance
Sustainability	Interdependence New mental models Tapping into the factors that create social cohesion Tapping into the factors that stimulate agricultural activity
Systemic integrity	Wisdom of strong leadership Incremental integration Learning for sustainability

The concept of what it ‘looked like’ and ‘meant’ to be ‘successful’ was being defined by stakeholders in the day-to-day activities and decision-making resulting from interaction with farmers, researchers and the market (Woolworths and Farmwise Pack House). The product of this research is a set of concepts developed from the constant

²⁹Defined in Chapter 5, Section 5.4

comparison of these patterns with each other and with an eclectic use of literature to explore interpretations within. A core variable emerged interpreting ‘successful’ commercial homestead agriculture as a dimension of systemic integrity in the process of commercialising the *amadumbe*. Within the context of this investigation, systemic integrity is defined as the process by which intention to commercialise traditional agriculture has been made explicit by the farmers’ experiences. As a process, it tapped into the motivations that stimulate local agricultural activity and nurtured the legitimacy that contributes to social cohesion.

6.2.3 Systemic integrity: the core concept

The effect of this interaction was that a perception of *interdependence* emerged (Figure 6.4). It did so within the reciprocal relationship that occurred between the internal context and the external context. It was a response to the values-based behaviour of all participants and strong leadership in both contexts. This leadership was characterised by increasingly shared values and beliefs critical for effective commercial activity. The alternative would have been that the market insisted on the farmers meeting their demands or the farmers could have opted out of commercial behaviour. The choice to find a mutually accepted set of norms and behaviours results in reciprocity. This analysis proposes that it is this interdependence, which creates the incentive for development that is self-determining, sustainable and derives economic benefits for both producer and market from agricultural activity.

The core variable which emerged in this research was identified as systemic integrity characterised by individual and collective wisdom (W), incremental integration of accessible opportunities (I) and learning for livelihood sustainability (L). Perceived interdependence is the construct of an emergent reciprocal relationship between the internal context (farmers’ livelihood context) and the external context (market) that arose through the response of values based behaviour and leadership in both contexts (See Figure 6.13).

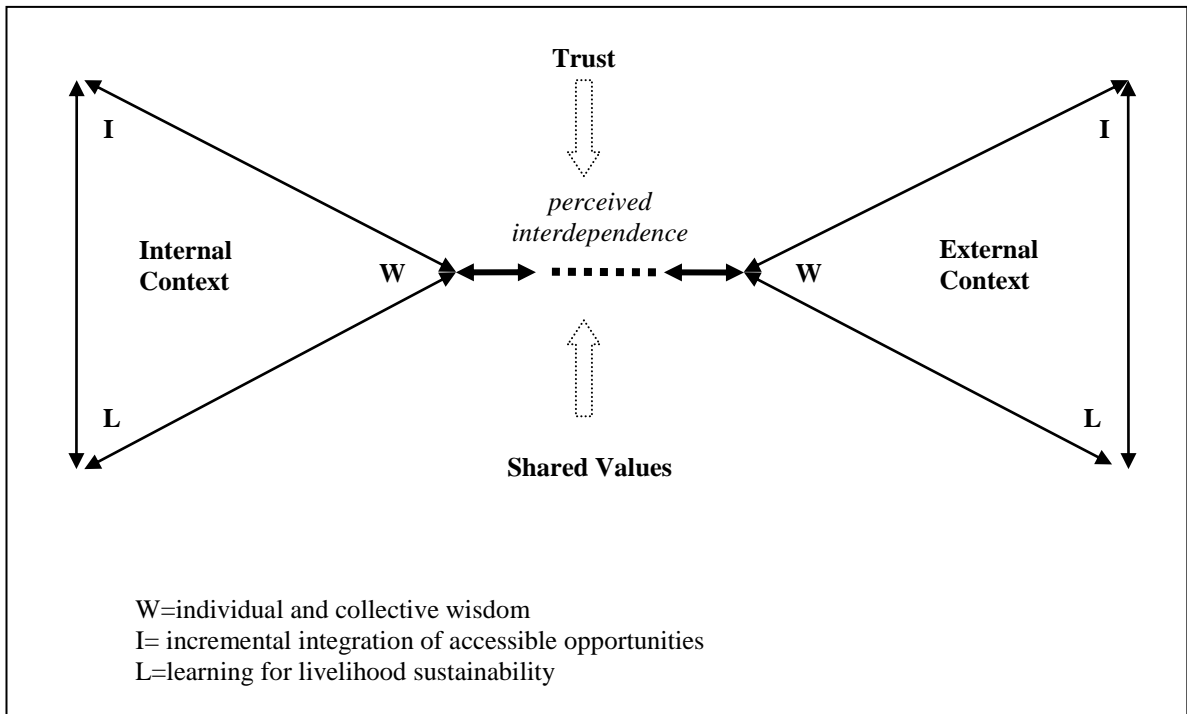


Figure 6.13 Systemic integrity emerging through deliberate interdependence

In the internal context, the producers became conscious of the value of their own labour and *amadumbe* as a commodity for commercial activity. They organised themselves to account for the scale of commercial activity required by the market, while assuming that commercial activity included social and intellectual interaction. The external context mirrored value-based behaviour and leadership in their own struggle with how to include small-scale producers. Woolworths, acknowledging that “making a commitment” to farmers helps make them successful, deliberately included social and intellectual interaction. This values-based behaviour views small-scale farmers as long-term, loyal suppliers.

Through the activities of the SANPAD Participatory Project, the harnessing of factors that built social cohesion and stimulated agricultural activity resulted in a way of ‘being together’ through a conscious choice of learning and respecting each other’s priorities. Again, this leads us to the notion of deliberate ‘interdependence’ in the process of commercialisation. Nurturing the ownership of the development process, by negotiating each step along the way, and the respectful building of partnerships for producing knowledge and commercial exchange, places the ownership of the development in the hands of those who have to live with the consequences.

This research identified that ‘successful’ commercial homestead agriculture was the result of shifts in thinking that influenced production and led to attitudes and subsequent behaviour allowing a traditional agronomy, relying on available resources and local knowledge, to include science and cultural differences in the move towards sustainable market-oriented agronomy. Influencing the change was the impact of informed decision-making, which brought the stakeholders together through the sharing of values and beliefs. This leveraging was achieved by using the market-orientated production of *amadumbe* for tapping into the factors that sustained and created social cohesion, as well as those that stimulated agricultural activity. This emphasis encouraged the capacity for development and cultivation of sustainability.

In summary, the substantive theory proposed by this research identifies the core variable as ‘*systemic integrity*’. It recognises the emergent concepts of ‘*perceived interdependence*’, brought about by *values-based behaviour* and ‘*success*’, characterised by *wisdom* (transformative and legitimate leadership), *self-determination* and *incremental integration* in relationships characterised by *learning for livelihood sustainability* (Figure 6.5). These findings contribute to the discussion of how to unlock the technological and productive potential of rural communities within a community of practice that reflects the images of supportiveness, solidarity and communalism versus individualism (Stevens & Treurnicht 2001).

7 DISCUSSION OF RESULTS

7.1 Building capacity for development

Stevens & Treurnicht (2001) proposed that ‘culture’, defined as the sum total of the original solutions that people invent to adapt to change, is a crucial and underutilised resource for mobilising knowledge systems in the search for sustainable agricultural development. Stevens & Treurnicht (2001) suggested that culture is crucial to agricultural development, because culture conveys important information and knowledge used by society in adapting to its environment. Traditional farming communities have developed their own technologies and explanations for cause and effect in response to their experiences of production within their specific contexts (Mapadimeng 2005, p3-4; Whiteside 1998, p39). We also know that specific problem-solving is enhanced when participation encourages the innovative integration of local technologies (Mapadimeng 2001, p4; Stevens & Treurnicht 2001). The knowledge that we need then in developing agriculture-based communities is not a new theory vying for centre stage such as ‘organic farming’, ‘sustainability’, or ‘commercialisation’, but a way in which to manage the relationship between technical knowledge and the way in which societies arrange their worlds.

Scientists can reflect, and the farmer can reflect on his/her reality as knowledge, but, for both of us, we have to find a way to overcome the potential fallibility of that knowledge in a changing world. Capacity for development, therefore, not only relies on effective technical knowledge but also on processes that strengthen relationships, for enabling innovation and resilience in communities. The knowledge we need is the blending of science with local decision making processes that facilitate flexibility and options for how farmers manage the relationship between cultural knowledge and technical practice.

The crux of the challenge for market-oriented CDR agriculture is that the focus of ‘productive agriculture’ needs to include science supported by research and production experts, and an Agri-Culture ‘way of life’, embedded in a particular political context, culture and geography. People may be seeking economic benefit (and in this research they were), but ultimately the research challenge lies in understanding how to support lives that people value – in this case traditional farmers aspiring towards commercial production. Figure 7.1 depicts an interpretation of the EFO farmers experience as the

transformation from subsistence to the inclusion of market-oriented agriculture relying on a negotiation between the social demands of communal land use, and the innovations of farming technology that maintained or increased productivity. The ability to remain flexible, choose a set of responses appropriate for social, economic or environmental conditions enables the farmer to deal with uncertainty. So we see that for the EFO farmers, a new mind-set in agricultural support and services is required; a support that is not politically driven, but that is flexible, focusses on appropriate technology, and is conscious of agriculture as a ‘way of living’ whether it is market oriented or not.

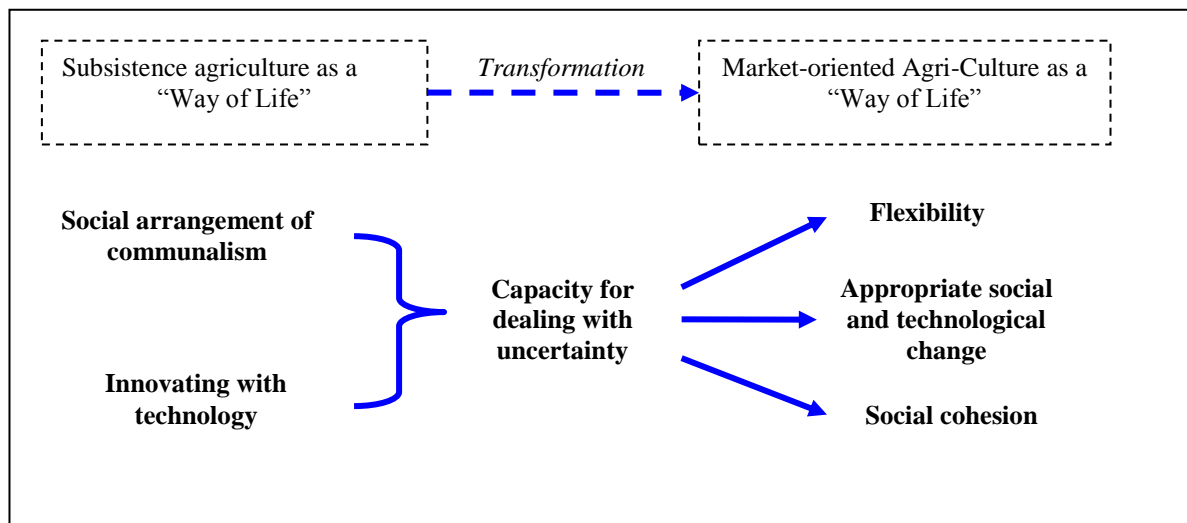


Figure 7.1 Building capacity for dealing with uncertainty

Research, when conducted as part of a development empowerment process, has to deal with the production of knowledge, which is a product of science engaging with society over uncertainties. This mind-set seeks to recognise opportunities for development, exploring existing knowledge and resources as foundations for innovation. When trying to understand small-scale CDR agriculture as a commercial option, these challenges become immediate when we address the question of ‘what are we becoming’ (Figure 7.2)? Until the practitioner makes the philosophical shift towards farmer responses as rational responses to the complexities of homesteading and commercial agriculture from the farmer’s own world view, knowledge continues to be a ‘thing’ to be ‘applied’ and support is for those who can be controlled, whereas the development need is for narrowing the gaps in knowledge required to be effective in the changing environment. The gap itself is the cause of the discrepancy between what people envision as their future and how they are able to achieve this (Meadows 1999, p4).

Where we are going to, is envisioned and therefore emergent. In any system there are inflows and outflows that affect the state of that system. In the commercialisation process described in this research, the physical state of the social agronomic system was represented by the organically certified production of *amadumbe*. The nonmaterial state was represented by the confidence and skill of farmers to continue to envision and re-define their future. What links the inflows (e.g. research and development) and outflows (e.g. the livelihood outcome of links to markets) in the goal of commercialisation is the farmers' perception of how well they are doing at achieving their goal (Figure 7.3). The sensitising concepts of cultural integrity, sustainability and economic benefit were interpreted as the nature of the success desired.

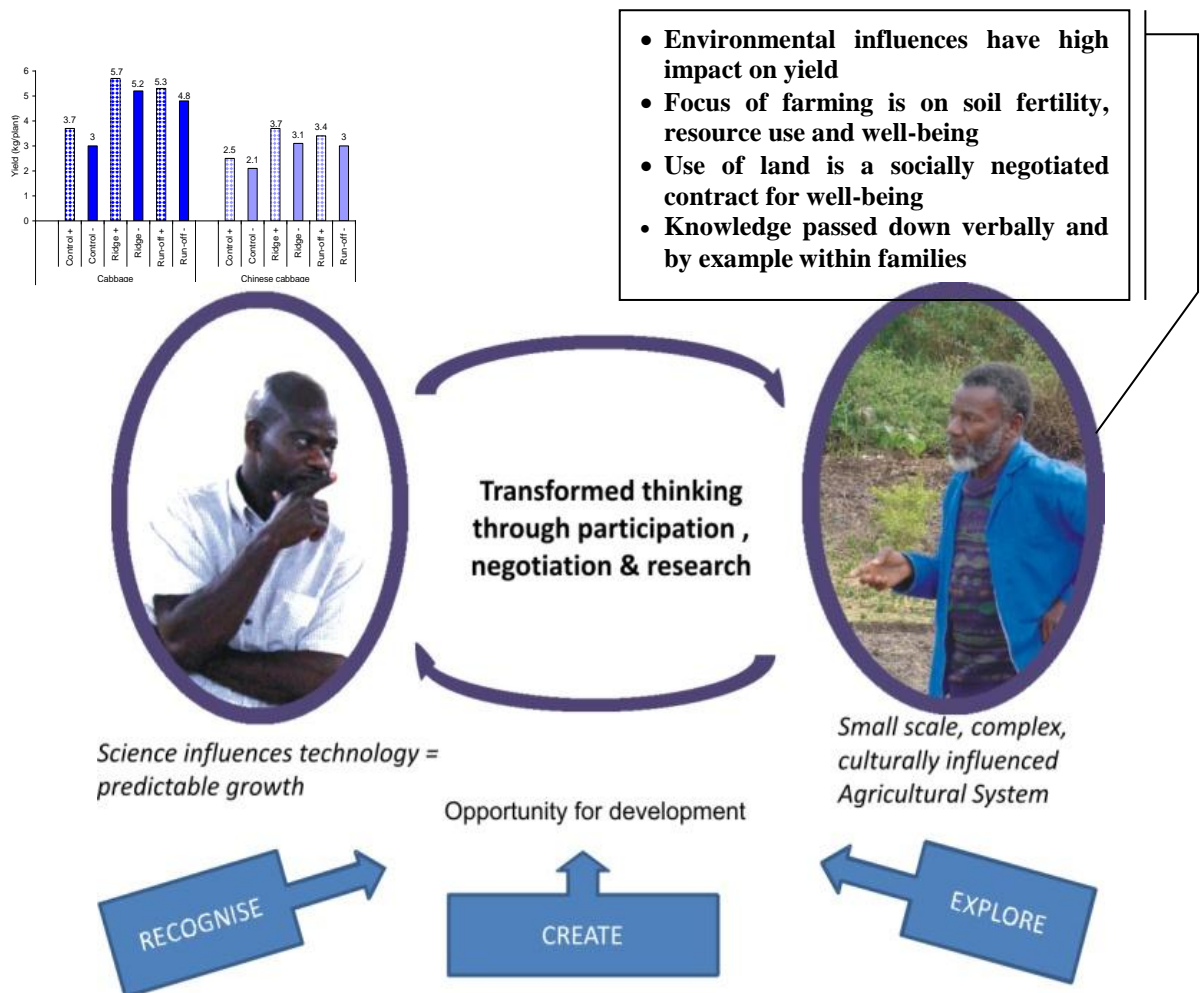


Figure 7.2 What are we becoming? Identifying the foundations for transformation

How the farmers perceive their progress towards, or in achieving their goals is the critical link to continued development that brings the value of science into the norms and values of local knowledge. The transforming power of significant, socially

acceptable shifts in thinking identified in the phenomenon supported a new Agriculture developing within the criteria of cultural integrity, economic benefit and foundations for sustainability. With the realization that the *amadumbe* were a bargaining tool with the market, the perception of interdependence emerged as incentive for modernising traditional agricultural practice in a transforming process that was self-determining and potentially sustainable. The present research suggests, that without interdependence, exchange of one system for another occurs, giving rise to the instability and loss of assets that have occurred in the many well-meaning development projects.

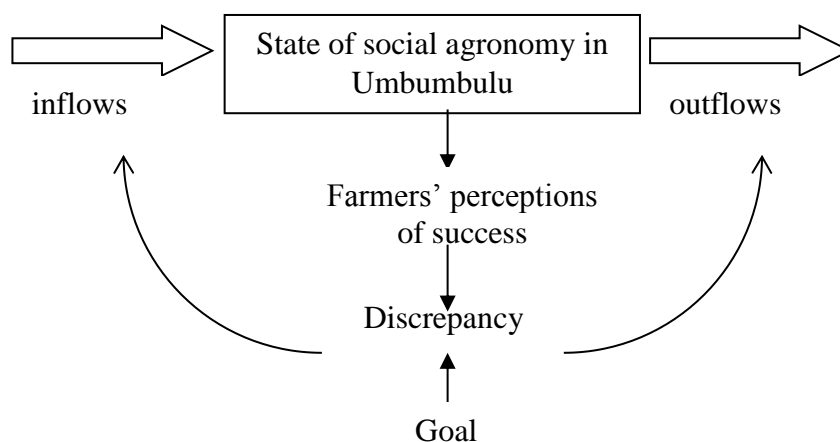


Figure 7.3 Commercialisation as an incentive for rural economic development (adapted from Meadows 1999, p4)

In terms of knowledge production, this research identified that taking advantage of traditional rural social and technological capabilities allowed community-designed alternatives that drew on physical and spiritual resources to construct realistic responses to opportunity and to uncertainty, over time (e.g. Figure 2.12). This is a ‘difference which makes a difference’ in the capacity for change and dealing with uncertainty. The starting point for capacity-building begins where the farmer is identifying with strength in terms of skills, attitudes and behaviours (local farming technology). In effect we are improving knowledge through negotiating market-oriented attitudes and behaviours. With a new technology, we would have had to overcome the barriers to new knowledge, new skills, new attitudes and new behaviour over time.

7.2 Leveraging for sustainability: tapping into social cohesion and stimulating agricultural activity

To ensure the future, the idea of sustainability as a dynamic process, rather than an endpoint, offers a route for understanding and engagement between research, policy and personal spheres (Maxey 2006). For both research and extension agendas, in considering traditional Agri-Culture in the context of economic development we have to create the capacity to co-operate in a way that opens up the possibility of social change, a way of interacting that nurtures and innovates for cohesion in a dynamic social environment. Including the non-material contributions of local wisdom and practice being partnered by science allows for a new phase of leadership in developing rural economies.

Many of the characteristics identified in this study as grounded notions have already been identified for the sub-Saharan region and included in current theory for sustainability, livelihoods and empowerment (Mtshali 2002; Morris *et al.*, 2001; Shackleton *et al.*, 2000; Scoones 1998, Carney 1998). Within the EFO/Woolworth's relationship however, there were several factors that 'make a difference'. In the following paragraphs these 'differences' are presented as an explanation for the significance of how knowledge leads to the confidence to be able to compromise, how building trust leads to legitimised shifts in power/reward relationships and what these mean to a market-oriented agriculture that supports the development of sustainable rural livelihood options.

At household level, encouraging equal opportunity was portrayed in the separation of farming activities which generated greater flexibility in terms of using resources, as well as giving individual family members power to make decisions about those resources. In terms of market access, combining harvests from different farms distributed the available market share and made the market accessible to a wider range of farmers, each with different capabilities for production.

Another difference observed was a shift towards equity in power/reward sharing that was believed by farmers, researchers and other components of the *amadumbe* value chain. At individual and community level, there was the choosing and articulation of an identity as a declaration of deliberate 'becoming' through the EFO identity. Because farmers insisted on negotiating with other stakeholders, they maintained ownership over

decision-making from individual production to bargaining for *amadumbe* prices. Social and kinship based relationships were used to negotiate for available resources, which decreased dependency on the need for cash to purchase inputs¹. And, equity depends on building trust. Within the community, the use of social contracts for accessing communally owned resources encouraged an accountability and transparency, which helped the community come to terms with the consequences of uncertainty. At the market level, trust was built as the farmers began to trust the responses over time of the markets' willingness to make a commitment to farmers and to adding more 'face' to the relationship. Part of this was also a reciprocal shifting rather than one-way shifts that saw the market moving towards the farmer and the farmer moving towards the market. In the relationship with researchers there was a confidence in the usefulness of research being able to help deal with uncertainty by helping to explore answers to production goals and by being available and reliable in helping out.

In terms of sustainability, by retaining the freedom to choose diverse farming strategies, there was the possibility of greater freedom for each generation to choose a life-style within livelihood constraints. There was also the incremental incorporation of commercial productivity that pushed boundaries in a way that preserved stability, while exploring the social consequences and economic and environmental potential. What this meant was that both the market and the farmer could perceive the other as interdependent: surplus production on the part of the farmer was exchanged in an 'organic niche' by the market to meet consumer demand. This was ultimately expressed as the emergence of an interdependent relationship between the producers and the market.

Adopting new mental models was another difference which made a difference. At a theoretical level we can now see that:

- a sustainable agrarian livelihood requires sufficient freedom to choose different life-styles from one generation to the next
- by holding assets as communal property, these become recyclable assets
- commitment to farmers by markets makes emerging farmers successful and suppliers have the potential to be partners, not just clients

¹ Some examples described earlier, trading manure for payment of damages to seed *madumbe*, sharing labour in exchange for use of land like Lelepi and her sister, negotiating for land without the exchange of cash like Mr Miya and his neighbours.

- using technology is not only as a means for improving well-being, but is also able to change attitudes and subsequent behaviour that form bridges between economic growth and sustainability thinking.

For the farmers, two mental shifts made a difference:

- One was grasping that a locally undesirable crop which they were expert at producing can have value outside of their traditional use for it
- Experiential learning teaches the science of what farmers already know – it explains the ‘why’ of the knowledge that farmers already have and generates new knowledge as farmers make connections; understanding these relationships allows the farmer to reflect and make deliberate decisions to innovate in response to change.

Observation showed that stakeholders made strategic steps towards market-orientated agriculture. The market and the farmers found a way to maintain negotiation as an on-going tool for dealing with the challenges of producing commercial qualities and quantities with small-scale and complex agricultural systems. Farmers and researchers determined new agendas for and norms of relationships and behaviour in the role that traditional agriculture plays in realizing development opportunities. Three key roles in building these strategies were identified. There was the role of the ‘gate-keeper’, reinforcing the function of dialogue in development. There was the role of ‘realistic responses’, defining the nature of sustainability in terms of market-oriented agriculture as ‘a way of life’. Finally, there was the role of the ‘mental shifts’ that researchers, farmers and markets needed to make, in order to position knowledge in a way that encouraged market-orientated activities.

The experience of a mind-set change, where participants deliberately grappled with a shift in technology², from something to be applied to something used as a leverage point for networking and organising extended the farming system (internal) to include the market (external) as part of an integrated whole. This shifted the focus of a producer supplying the demands of a retailer to a system that bridged the internal/external cultures and included the external market as an integrated component of the EFO farming system. For the researchers in the SANPAD Participatory Project, grappling

²Technology, in this case, means market-oriented adaptations to traditional *amadumbe* production.

with what this meant in their individual responses to supporting the EFO goals allowed the accumulation of small shifts in thinking that overcame resistance.

The importance of overcoming resistance lies in moving towards a common value system, eventually moving participants to the point where they can be more adaptive in their responses to uncertainty and opportunity. An illustration of this concept is farmers' frustration with the market for requiring the outer corms of the amadumbe. The market is selling a product that appeals to the customer's eye in that it has less blemishes (see Figure 6.10) and is a particular size. The farmers had to come to terms with this request, not only figuring out how to get the outside corms to the size required, but also the incomprehensibility of selling the corm that is the least appropriate in terms of flavour quality. Another illustration is Woolworth's acknowledgement that farmers need to see their 'faces' from time to time as opposed to the normal feedback through Modi and Farmwise packhouse in order to believe that they were committed.

The goal of market-oriented production and co-creating knowledge³ towards satisfactory production of *amadumbe* resulted in perceived cultural integrity, adaptive capacity and economic benefits. In summary, overcoming resistance changes behaviour and is proposed as a representation of greater flexibility in dealing with uncertainty. In terms of sustainability, adapting technology context by context with interest groups, taps into a pre-existing mind-set that is actively seeking change and is most likely to be open-minded to risking innovation and creative solutions to uncertainty.

7.3 The future of agrarian change: alternatives for 'what we are becoming'

“Developing emerging farmers in South Africa is not straight forward; however doing nothing is not an option. Empowering emerging farmers in this country is very possible with the right recipe of relevant public policies and a pro-poor proactive private sector. However, even though they are entitled to a place in the agricultural economy, emerging farmers also cannot just sit back and wait for the right mix of policies and alignment of government and business practices. Emerging farmers should also rise to the occasion and write their own history knowing very well that in the agricultural industry you either swim or sink.” (Davison Chikazunga,

³ By co-creating, what is meant is the local shaping of technological practice that allows the whys of scientifically proven cause and effect to be adapted into the more holistic strategies and technologies (the hows) useful for managing uncertainty.

Rescuing Emerging Farmers in South Africa? PLAAS Blog, Another countryside March 28 2012).

Davison Chikazunga's appeal to emerging farmers to write their own history resonates with the EFO Farmers' vision for sharing their research experiences as a contribution "to a model for rural economic growth". For agricultural researchers in South Africa, the challenge is to find a combined voice that links scholarship with the voices of the farmers themselves in re-writing the history of Agriculture in the 21st Century. This research offers such a combined voice and argues for the re-invention of 'the peasantry' as homestead agriculture through shared research agendas and learning together to solve the economic problems of socially sustainable optimised land management in communal rural spaces.

7.3.1 Argument for an alternative trajectory.

Substantive theory deals with normative issues. The set of relationships which emerge from the grounded theory process are not an end in themselves. In fact, as part of the human experience, there is very little about the concepts presented which is 'new' or has not become part of the collective knowledge about communities in transition. It has occurred to the researcher that if a systems view of any context is taken, by assumption some form of interdependence will surface. If it doesn't, it is likely that the system is dysfunctional or the process of investigation needs to be re-directed.

What we do know is that we have to come to terms with sustainability as the vision that overarches both the public sector and civil society. When it comes to transforming agriculture beyond subsistence into market orientated production, we need to work with a knowledge of the options for change through priority setting and the values that act as a regulation for clarifying what those options are. We need to learn about these priorities, and how to make the power relations more flexible. We need to reflect on and try out solutions in real world situations which in turn will influence our values and what we now know. With complex problems there will always be unknowns. These unknowns may be about facts, causal and associative relationships, or effective interventions. This is the contribution of interdisciplinary approaches for researchers and agricultural professionals engaging with rural communities. We know that subsistence agriculture as a way of living has and will endure for any number of reasons. What is most predictable about this form of agriculture is that it will

eventually re-surface in some adapted form (Bryceson 2000, p5), either as a choice or as a buffer against vulnerability. The implication for policy is to recognize its importance as a contribution to social cohesion and agricultural activity.

The literature reviewed in Chapter 8 of this thesis has directed us to two alternatives in thinking about how to support agriculture in risk prone, poorly resourced rural areas: an economic efficiency framework of agriculture designed to fit a global market place requiring global governance to regulate sustainability, and a conceptual framework for agriculture, that is integrated into the social and cultural fabric of communities for sustainability. The experience of the SANPAD Project suggests that the opportunity for farmers to re-invent peasant agriculture as communities of common purpose is a distinct option for contributing to the overall goals of agricultural change in South Africa. The purpose of the SANPAD Project was to build capacity and support farmer led commercialisation through research and learning. Studies which were mainly technical in nature arising from this relationship have shown a group of farmers with an intimate and intricate knowledge for utilizing their land and locally available resources to produce beyond their own consumption needs (Buthelezi 2010; Caister 2006; Maphumulo, PhD research in process; Maragelo 2008; Mare 2009; Modi 2005; Ndlovu 2007). That farmers want to learn, are capable of learning and are highly motivated has been confirmed without exception by all empirical studies published as of 2010 in respect of EFO members including those published by the Ford Foundation Project of the African Centre for Food Security at UKZN (Hendriks & Lyne 2009). The social capacity to develop and manage horizontal layers of co-operation is evident within the cultural norms and behaviours in Umbumbulu. This type of co-operation requires energy, social skills and time and they are the characteristics of a group with a critical mass of mature and secure individuals. That the vertical and horizontal process where community members cooperate together are almost always slowed by conflict resolution, the need to constantly build and restore trust as well as emotional space for learning and adjusting to communal norms and behaviours is taken for granted by the type of people who enter into these groups.

The stimulus of the market value of *amadumbe* motivated the farmers to develop horizontal co-operation in the production and supply of *amadumbe* to Woolworths. This inclination may be instinctive and socially familiar, but the knowledge and skills necessary require support and services to build and maintain these linkages, if a

commercialization trajectory is to continue. For example the experience of the SANPAD project was that clear and regular communication channels between the EFO members and the criteria for consumer acceptance, is important. Negotiating prices, dealing with bureaucracy and the 'business' mentality requires the capacity for negotiation, conflict resolution and a leadership that is perceived as legitimate. The role of Modi as catalyst for new ideas, knowledge building and for participatory problem solving that ranged from technical issues to building social capacity was another essential requirement. Although the farmers in this study were very adverse to debt, choosing rather to increase production through integrated increments, appropriate and legitimate credit mechanisms in some form would also be important for accumulating assets that require cash. Even so, the farmers chose to purchase their lorry with cash in hand rather than finance. And last but not least, infrastructure and services that guarantee access to electricity, constant supplies of clean water, safe all-weather roads and telecommunications will on their own stimulate economic activity without the need for government policy to determine the end point of that trajectory nor to determine how people will live their lives. According to the Civic Agriculture movement (Lyson 2004, p6) communities can buffer themselves from the negative impacts of the global food system and develop competitive, locally embedded food systems for achieving sustainability if local farmers and processors can successfully compete in the local marketplace against the highly industrialized, internationally organized corporate food system. For this they need an ideological commitment and to have what every farmer needs: sufficient infrastructure, an adequate farmland base and enough technical expertise to be competitive.

Amartya Sen has made us conscious of the need to understand development as freedom, the freedom that comes from social opportunities allowing people to take charge of their own futures. The long term and enormously costly personal commitment by Professor Modi to act as a catalyst, encourager and negotiator, has allowed for this process to develop in Umbumbulu. Woolworth's offered an economic incentive and partnership for moving beyond subsistence. It is this leadership and the farmer's recognition and legitimisation of this which has led to the understanding of 'systemic integrity' as a way of communicating the development outcomes of their combined agency. Furthermore, the characteristics of systemic integrity serve as an example to extension services, researchers and development practitioners of principles useful in adapting this

Discourse. What the framework does is offer the potential for an alternative trajectory for political decision makers to help agricultural planners understand where their priorities should be in terms of supporting rural agrarian ways of living that are culturally and environmentally sensitive. The blue print for the government’s agenda is a linear path moving subsistence farmers from subsistence farming to export (Figure 7.4). The food security focus, where policy provides support first for land care and then for food production as part of the diversified economic development in rural areas is the starting point for re-inventing homestead farming as a way of living. Small farming may not just be seen as the buffer zone for the unemployed. It should be seen as a deliberate freedom, whether the space is used for secure settled communities or communities and geographical spaces in transition with their individual needs for shaping and re-shaping.

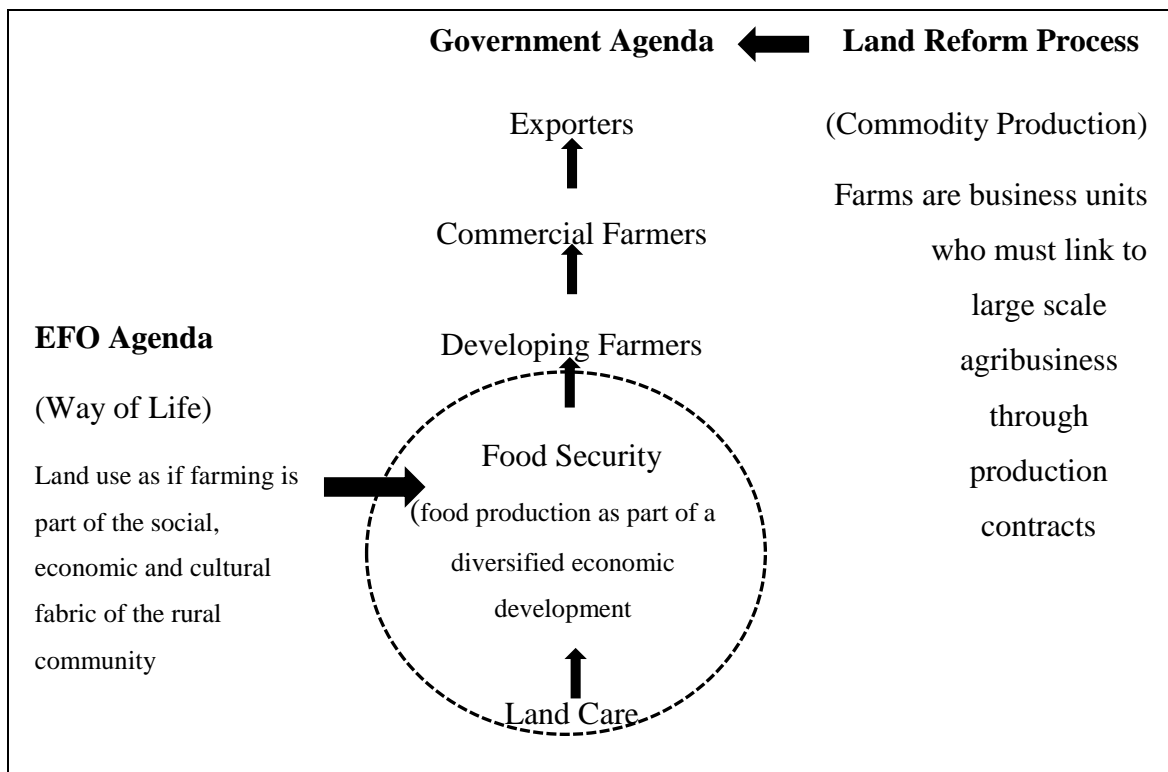


Figure 7.4 Values based collective movement towards the National Agricultural Strategy (the EFO Agenda)

How far the farmers choose to move along the government’s linear trajectory should be a choice, albeit with increasing responsibilities and opportunities for contributing to the National Agricultural Strategy. The EFO farmers made a choice, articulated in their constitution about where they would like to start in terms of making a contribution to rural economic development. However, if a strong civic agriculture exists where farms

as enterprises are equipped with optimising technological solutions for energy, machinery, avoidance of risk and bio-diversity, they need to be encouraged and serviced. Public programmes would need to bear the brunt of the extension programs providing services that local consumers, farmers and entrepreneurs are able to benefit from. On the other hand, historical subsidisation of agriculture by government that assists in the distribution of commoditisation can be taken over and made economically sustainable when business uses subsidisation as an economic trade off. The example shown by this study was the cost of certification, paid for by Woolworths on behalf of the EFO.

7.4 Critique of the Research Process

7.4.1 The use of Sensitizing concepts in a GT

Clarity on what questions to ask is essential to any research process. One of the challenges in qualitative research is that you can collect a lot of data but not actually answer any questions. Finding the right questions that avoid a deductive process to expected findings is tricky. The researcher assumed from her life experience and understandings from the livelihood approach that there would be some basic social and or psycho-social process inherent to the commercialization process. We were after all, participants in a formal grouping that was deliberately undergoing change. Change implies movement, from somewhere, along some path and towards something. This may sound like a linear progression; however, the researcher's experience was that influences for change could be interdimensional such as the past and present merging⁴ or producing for the market this season, but withdrawing the next because of a change in resources or priorities⁵. Linear movement was characterised by incremental integration, small increments in production managed by the farmer with his given resources. In addition, the nature of complex contexts is that there may be many processes going on. People are not just farming, they have other enterprises, are committed to religious and cultural practices and customs, and there is the constant opportunities and threats resulting from the pressures of the external environment. Furthermore, you could research endlessly the causes and effects of 'this structure in

⁴ The example of this in this research is the reference to the perceived involvement of the *amadlosi* on the material aspects of farming such as the farmer who went blind and could not farm until she had responded appropriately to the *amadlosi*, but who also received in return, a heightened awareness through dreams for solving issues.

⁵ From an economic perspective, this behavior is perceived as a characteristic of "free riding", whereas in this organization it was simply managing ones resources.

relation to that function', but the key focus in this research emerged as the way in which the farmers themselves have taken command of their futures in an incremental and integrated relationship between opportunity, principle and practice. It made sense then, to draw on the 'vision' for boundaries and investigate how this was being acted out by the members.

One of the principles of GT is to begin the process of investigation without preconceived notions. The danger in using sensitising concepts in a GT is that when borrowing concepts from existing theory, the researcher may subconsciously be desensitized to emergent theoretical categories. As mentioned before, GT refers to this as theoretical sensitivity guided by theoretical sampling. One of the criticisms of using GT is that researchers seldom adhere to the theoretical sampling imperative of Glaserian GT. The reason for this is that theoretical sampling takes too long, and researchers rely on coding as an alternative (Gibbs 2010). Charmaz takes a pragmatic stance on this issue. Like the situation many other researchers find themselves in, there was a pragmatic need to limit this study. An unhindered theoretical sampling was impossible, firstly because the sample had already been predetermined as participants of a 'project' and secondly because the research was a PhD research, required to begin and end within the three year project period.

In order to accommodate the tensions between the need to ask relevant questions and the need to limit the study, the use of sensitizing concepts drawn from the context itself allowed for the limitations to emerge from the context, consistent with the intention of theoretical sensitivity and coherent with the grounding of theoretical concepts. The choice of concepts from the constitution itself provided guidelines that were consistent with a deliberate process and along what lines one should look for information. These sensitizing concepts guided and framed the organization of data around the "process" of intent. Whether the end result would look like the development, sustainability or commercialization found in literature and current practice could then be a final comparative analysis dealt with when integrating the findings of the study with current literature in the field of farmer innovation and commercialization of homestead based farming systems.

Whether written or spoken, words and how they are used are significant. They act as symbols for values, norms, behaviours, concepts. In other words, they help us

communicate knowledge and feelings and intentions. When Professor Modi was interviewed by email to follow up a question about how he saw his role and influence on the use of the language in developing the EFO constitution, he pointed out that in essence, specific words were not chosen for their power in shaping the way the farmers envisioned, but rather that they were used as a way of expressing what was not even questioned as core principles and relationships in the farmers minds (Email 17 November 2012).

For example, in answer to the question, was there a process to reach consensus on the core principles of the Constitution? He replied,

There was no argument or debate among the farmers regarding the acceptability of indigenous/traditional norms as part of the ethos of EFO. It was hoped that the “outside” world would read the meaning of the constitution in the context of an internally generated need for participatory rural economic development (Professor Modi)

Why were the words ‘cultural integrity’ chosen?

.....the farmers wanted to make sure that commercialisation does not have a negative effect on the cultural values that food is primarily produced for survival of humanity and that its commodification should not lead to lack of humanity (Professor Modi).

What influenced the use of the terms ‘sustainable, productive, stable and equitable agriculture’?

In their own terminology, the farmers expressed that their agricultural system should not be under undue pressure to emphasize production of a certain commodity to satisfy market demands while the future of the whole system is jeopardized (Professor Modi).

The assumption then is that the constitution which was in use at the time of the study and to which all members had to commit, interpreted the intention and envisioned future

of the EFO⁶. It was how the farmers created this reality guided by their understanding of this commitment which was fundamental to interpreting the success of the EFO in contributing a model that could be useful to rural economic development.

The farmers wanted their reality to be communicated as part of the research aspect of the commercialization project. The fundamental comparative analysis then needed to be between the intentions of commercialization as intended by the farmers and the reality constructed in response to this vision. The use then of themes identified in the constitution, ‘development, sustainable, commercial’ were in fact words, borrowed from English and familiar to academic discourse, but used in the constitution. At the point of analysis, the constructivist theorist only offers abstract terms representing an understanding of practices and actions providing an interpretive frame for viewing the farmer’s reality.

7.4.2 Critique on literature used to develop the categories.

Most research traditions require a review of literature to inform the research questions. Many use deductive traditions such as identifying an existing gap in knowledge from the literature to address a particular study. The choice of research methodology determines the kind of questions that can be asked about that knowledge gap. Ultimately, the questions will determine the relevancy of the research through the analytical questions, and practical questions being addressed. However, in this research the whole reason for using grounded theory was to ‘discover’ while suspending knowledge from a substantive area (Walls, Parahoo & Flemming 2010, pp8-9).

The choice to use what literature could be found of ‘African’ philosophy and of an interdisciplinary nature was a deliberate choice to determine abstract concepts and interpret against a framework of thought that was not emotive, and similar in its objectives. The challenge was to find alternative perspectives and knowledge through which science and society can engage and to look forward to futures rather than backwards at the warning signals already known. They also to some extent declare the researcher’s stand point on what is relevant ideology and location of interpretation within the constructive process. Glaserian GT would insist that literature would be

⁶The use of the EFO as collective symbol of the farmers’ involvement with this project is deliberate. The EFO is not something over and above the farmer members, it is the farmer members. The EFO represents the formalised shape of members who rotate through roles and responsibilities as elected role players and bearers of responsibilities on behalf of the others. All are producers

irrelevant to theoretical sensitivity unless one ‘discovered’ that the theory which was developing did in fact strongly identify with existing theory. Furthermore, according to Glaser (2010), if the researcher is really being sensitive to the theory, once the theory is out there, a whole new literature is found to be relevant, and you need this to help understand what is really going on.

In developing the categories, underlying tensions needed to be explored in terms of the meanings behind how farmers responded to various stimuli. The researcher could have chosen to ask the farmers themselves what they meant. But the experimental intention of blending GT with its roots in symbolic interactionism with the intent of breaking away from western philosophy encouraged the researcher to use an eclectic combination of literature that seemed relevant to the development of each category. In the end, some classical African philosophy⁷ writings from Leadership and Organisational Change movement⁸ and the Theory of the U (Senge *et al* 2005) were drawn on to clarify not only the categories, but to frame an understanding and thinking about the process within the research design. This is all literature very far removed from farmer innovation and the commercialization of homestead based farming systems. Charmaz’s constructivist approach has no problem with drawing on literature in order to develop categories. Her justification is that the researcher can use the literature to build the categories. This does not make redundant the need to integrate the findings into the current literature of a field. Indeed, this process may reveal more properties of the categories which have already been identified.

Glaser’s view on theory building is that the method of comparative analysis so fundamental to GT ‘discovers’ reality. It is there, simply waiting to be organized into categories around a central or core category. But fundamentally, GT is about a concept and once conscious of this theory, it will often be seen as relevant to other contexts. The constructivist approach defended by Charmaz insists that reality is constructed through the interactions of the participants in the field. Within a research and development context such as commercialization where a vision is being constructed through participatory efforts, the approach of constructivism is appropriate. A new reality is being explored by participants. Breaking through the barriers and finding new

⁷ Mokong Mapadimeng (2005), Kwasi Wiredu (1998), Munyaradzi Murove (2008), Mandivamba Rukuni (2007) and John Masango (2006).

⁸ Margaret Wheatley 2005; Riane Eisler 2007; Helga Nowotny, Peter Scott & Michael Gibbons (2001).

boundaries requires interpretation. The research product needed to be meaningful for the farmers and for the researcher. The researcher in this case brings a unique perspective. She thinks differently from the farmers. Hence in order to listen to what the farmers were saying about how they were constructing their world, the decision making involving commercializing activities was used in comparison to the concepts interpreted from the constitution document.

8 A 'POST FIELD WORK' RETURN TO THE LITERATURE

Researching the phenomenon of commercialisation through a social agronomy could be approached from several fields of knowledge. For this study, an appropriate context for a return to literature lies within agrarian change. The theory building process chosen for this research however, drew on an eclectic range of literature outside this field for the analysis process. This crossing of boundaries is inherent in the nature of Grounded Theory (Glaser 2010) and also a characteristic of interdisciplinarity (Frodeman *et al* 2010). The ultimate goal of GT is to identify in the patterns of activity studied, the core concept that is central to all other patterns of relationships that emerge. As the product of analysis, the core concept that is identified is often seen as relevant to many different and unrelated contexts (Glaser 2010). When answering the practical questions of research such as how to use the concept of 'systemic integrity' in the organising and support of commercial agricultural strategies of rural households; we are encouraged to return to the literature of the specific context, which in this case is agrarian change.

The review which follows, aims to frame the significance of 'systemic integrity' within the tensions of agrarian change as both an example of how a particular group has re-organised and managed its assets, established new norms and behaviours and expanded social capital. The intention of this review is to lay the foundation for the argument that the theoretical concept of 'systemic integrity' developed in this Grounded Theory proposes an alternative trajectory for supporting rural economic development in South Africa, and in particular for utilisation of agricultural land held within the current communal tenure system to stimulate agricultural activity and social cohesion.

Before we look at the particular South African political strategy of 'agrarian transformation'¹ which frames the access to resources and the enabling environment that rural farmers have in KwaZulu-Natal, we need a brief overview of global Agrarian Change and historical agricultural changes within the South African context.

¹ 'agrarian transformation' refers to a specific term currently in use by the SA Department of Rural Development and Land Reform. It carries a political meaning, envisioning a rapid fundamental change in the relations of land, livestock, cropping and community. The focus is on establishing rural economic activity, cultural initiatives and vibrant local markets in rural settings, and revamping and renewing rural infrastructure for sustainability and development (Comprehensive Rural Development Programme Version 1: July 2009, p.3)

8.1 History of agrarian change

Global agrarian change from both a development and research perspective has involved a series of conceptual and methodological innovations since the 1960's. In the 1900s, the farm management approach was a much more holistic interaction of farming. However, in the mid 1900's, the reductionist approach to science dominated agricultural in its move towards large scale, highly technical production (Norman 2002). The emphasis on the tools of production economics (such as budgeting, linear programming and applied decision analysis) became important for determining efficiency. But the production systems approaches of this industrialisation era and the failure of the green revolution in the 1960s which relied on both infrastructure and controllable agriculture was simply not appropriate for the complex, diverse and risk prone (CDR) agriculture integral to sub-Saharan Africa and many parts of Asia. The farming systems development approach initiated by scientists at the University of Florida and adopted by the Food and Agricultural Organisation (FAO) of the United Nations for their developmental projects confronted these challenges with an approach that encouraged partnerships between farmers and scientists to find solutions that incorporated constraints and development needs. But even these were a basket of choices externally developed which then needed to be adopted by farmers. The farmer-first (Chambers, Pacey & Thrupp 1989) and beyond farmers first approaches (Scoones & Thompson 1994) with their emphasis on bottom up and participatory approaches introduced collaboration amongst scientists and farmers as social actors with shifting power relations that focussed priorities on the realities of agrarian livelihoods in difficult circumstances (Norman 2002). In addition, the livelihoods and knowledge systems approaches have created an interface for applied science in the integration of policy, research and technological practice. Each of these historical movements acknowledged with increasing consciousness the non-linear and iterative nature of change processes and introduced a broader scale and set of economic, socio-cultural, institutional and political factors to understanding and directing the drivers of technological change. The challenge for sustainable development however, still lies in the fundamental shift from economics as a driver for a linear development to sustainability with its economic, social, environmental and temporal dimensions as a driver for development. It is this shift in assumption which has sparked the use of innovation systems. An innovation systems approach to research

and development in agriculture systematically incorporates a multi stakeholder approach characterised by developing functional linkages between stakeholders and organizations with the broader institutional and policy environment and the internal organisational changes necessary for effective linkages (Sanginga *et al* 2009). Innovation and systems thinking has permeated agricultural practice from applied research approaches for the resource poor in public managed developing contexts such as the Agriculture for Research and Development approach (ARD) emphasising action learning and research through collective innovation and introduced to South Africa in 1995 (Verschoor *et al* 2009, pp332-339); to the international rural social movement ‘Holistic Management International’². Holistic Management envisions farm management incorporating sustainable agriculture as its core philosophy. It is an example of how civil society has taken up the challenge for educating and providing services to agricultural communities. The application of this approach lies in four pillars: planning for profit; choosing an enterprise; critical decision making for using cash; and investing in both business growth and future productivity. Through the COMPAS network³ for endogenous development, African academics have also begun a movement encouraging indigenous knowledge systems as the key for innovation and systems thinking for dialoguing with modern western based science and in particular for livelihoods dependent on healthy agro-ecosystems.

8.1.1 The backdrop of globalisation

Globalisation as an ideology is concerned with a deepening global connectedness to global governance. It envisions global capital flows, connected trade, migration, and a global civil society characterised by modernity (Kalb *et al* 2004, p4). Many of the assumptions for this trend are the result of the ‘Development’ agenda of the north for the south and east since World War II⁴. As such, development is basically a sub theme in the practice and ideology of globalisation. The CERES research school in development studies in the Netherlands

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³ Information about the COMPAS network can be found at www.compasnet.org

⁴ Wilfred Benson, coined the term ‘underdevelopment’ as an economic foundation for peace following World War I (1942). US president Harry Truman used this term as a political justification for a development agenda in a speech on the 20th January 1949 defining Africa, Asia, and Latin America as underdevelopment areas and in need of ‘development’. This stimulated not only an academic debate, but there followed decades of influence from the North on the South and East. (Ali Bapir, Mohammed 2012, Ziai 1993, p4).

perceive globalisation and development as a contest between core global power wielders and common actors (Kalb *et al* 2004, pp1-8). It would appear that the potential for governments to deliver on the globalisation promises of unified social and cultural space in previous decades has in fact not been realised. The evidence of this lies in increasing global conflict, rivalry, cultural closure and ultimately collision and war. Part of this expression of failure is a fundamental conflict between globalisation and development. This is recognised as the contradiction between the experienced results of political agendas on the people who have to live with these decisions and the neutral and expert language of policy that often hides political interests and power struggles (Kalb *et al* 2004, p2-3). The historical practice of clearly separating authority and expertise as market-state-civil has shifted to a conceptual and analytical understanding of the alterations to the boundaries between these areas of influence in shaping modern society (Higgins & Laurance 2005). As a result, globalisation has become the conceptual centre for political, scientific and public discussions around social transformation (Kalb *et al* 2004, p2-3).

In the 1980's, the term 'governance' also emerged as an umbrella concept for a variety of theoretical approaches referring to a shift in regulatory arrangements where governing is not limited to a single area of expertise. These approaches focussed on explaining and understanding the diversity of actors and the 'non-political' agents that act between market, state, and civil society. This has opened up a whole new arena for research into the mechanisms and operations of modern agriculture (Higgins & Lawrence 2005).

An example relevant to agrarian change is the issue of global food security as a driver for agri-business allowing multinational organisations to have an ideological and political impact on the shape of agricultural production. At a more local level, the issues of power and the structures which generate policies that typically protect multinational and corporate interests are moral issues because they tend to dictate how people are supposed to make a living. For this reason, individuals have generally responded to the influence of globalisation with two basic questions: how do we make a living and how do we make a difference? Both of these questions revolve around the issue of power (Kalb *et al* 2004,p4) Both of the questions arise regardless of worldview or context of the people concerned, but the responses demand economic, social, political and cultural relevance. The causal linkages and sequences resulting in ecological degradation and climate change can be

confidently identified. Adopting a process and actor-oriented approach that builds on the concept of livelihoods however, allows researchers and practitioners to explore the options of actors with the structure and actions of institutions (Kaag 2004, p70). By exploring linkages, connections and networks rather than bounded or social and economic entities, the ways people prefer to make a living can be identified or even constructed through the way in which they constitute and position themselves in the world (Bebbington & Batterbury 2001). Part of the value of this understanding, cautions O’Laughlin (2001), is to understand the present within historical change. Agrarian change is embedded in an understanding of proletarianisation⁵ and the influences of capitalism on labour and distribution of resources. In the South African context, the debate about the role of communal spaces for contributing to economic development as well as an understanding of their value in terms of the nation’s interest appears to be a fundamental clash between a globalised view of the agri-food industry and the very local realities embedded in cultural conventions, poor educational standards, unemployment, and lack of exposure or access to information, in rural areas.

8.1.2 Intellectual roots for the paradigms of agrarian change

The argument that there are two opposing dimensions at the core of the role of agriculture in modern society can be traced right back to the earliest influences on scholarship within the topic of Agrarian change. The first influences can be attributed to the differing perspectives presented by the English cleric Thomas Malthus (1736-1834) and the Dutch economist Ester Boserup (1910-1999) on the relationship between farming and population. In 1798, Thomas Malthus published *An Essay Presenting An Intrinsic Imbalance Between Population Growth And Food Production*⁶. The basic assumption of his theory was that population was controlled by food production. This concept that population determines agricultural production became a narrative in agricultural change, stimulating decades of science that focussed on models for equilibrium and marginal utility on the assumption that the agricultural sector was inelastic and characteristically operated at the highest level allowed by available technology (Tinker 2001).

⁵ In this context, referring to an increasing number of people who sell their labour for income because they lack assets or other sources of income. And also closely associated with urbanization in the South African context as people leave the rural areas to seek employment in the cities.

⁶ I have not read the original, only critiques and discussion around the theory.

Debates and counter theories during this influence on scientific thinking included criticisms by Dutch economist Ester Boserup. Her contribution to the discussion of Agrarian change was a search for alternatives to the generally accepted economic models. Quoting from Boserup's last book Tinker (2001) shares Boserup's initial reason for challenging the dominant economic theory of her time.

“From the very beginning of my university study of economics, the structural problems of human societies had imposed themselves on me by the contemporary world conditions: I began the University in the autumn of 1929, when the New York stock market crashed, and when I left we were still in the middle of the Great Depression of the thirties. Against this background, the prevailing theories of equilibrium and marginal utility seemed irrelevant and –like many of my fellow students – I looked for alternatives (Boserup 1999:9)”.

In 1965, Boserup published her first model of agricultural development entitled the The Conditions of Agricultural Growth (Tinker 2001). This model introduced an interdisciplinary approach to rural development demonstrating the interrelationship of technology change on the farm, in cities, or in factories with the socially constructed roles and responsibilities based on age and gender. Her model introduced the concept of agricultural intensification as a relationship between workload and efficiency. Based on the effort that it takes to farm in response to output, population density influenced patterns of land use in farming traditions. For example, slash and burn methods and fallowing, which took less effort, were responses when unlimited or plenty of land was available. Intensification using fertilizers, irrigation, field preparation, and weed control allowed for annual cultivation when less space was available, but required much more effort (Tinker 2001). She distinguished between endogenous technology, as a creative way to increase food productions, and exogenous technology, that is too often introduced to cultures not yet motivated to accept the changing systems (Tinker 2001). She pointed out that in industrialised regions, infrastructure allows for long-term control of production which is not necessarily related to formal ownership and alienability. She also theorised that when population pressure in rural areas resulted in infrastructure development, human development followed supporting an assumption of an ‘evolutionary’ or linear progress

towards modernity. Throughout her life, Boserup continued to critique the interrelatedness of economics, agriculture, population, migration, technology, land use, and gender roles. While intensification could be seen as a universal concept, the efficiency aspect of fire and fallow was an archaeological feature of the Indian peasants she initially studied. For this reason, studies that built on Boserup, added the notions that environment affected thresholds of intensification and efficiency (Brookfield 1972, p 44).

Alexander Chayanov (1888-1937) was a Russian agrarian economist and rural sociologist who focussed on peasant relationships with the land. His observations introduced peasant behaviour as ideologically opposed to capitalism in that homesteads farm for a living, not for profit. Chayanov (Harrison 1975) proposed that peasants would work as hard as they needed in order to meet their subsistence needs, but had no incentive beyond those needs and therefore would slow and stop working once they were met. As a result, homestead (peasant) farming would not develop into capitalism without some external, added factor. Chayanov's proposition, which is called the consumption-labour-balance principle, described how labour increased until it met (balanced) the needs (consumption) of the household. Furthermore, productivity was based on the ratio of individuals in a household to the land that they worked. The higher the ratio of dependents to workers in a household, the harder the workers have to work. Labour is not separated from capital as it is in a capitalist approach. Discussion of Chayanov's work following its exposure in the mid-1960s to western discussion fell into two camps: those who grudgingly accepted some insights and rejected others, or those who felt that his insights were innovative insights of a yet to be defined peasant economy (Harrison 1975). Although perceived as ultimately flawed by studying Russian peasantry under the isolation and "classlessness" of Soviet agendas, Chayanov and his associated researchers contributed an abstract model of "peasant economy". They proposed the possibility of a cooperative modernization of peasant agriculture and opposed the Marxist interpretation of the peasantry into classes because of the cyclical mobility⁷ of the peasant family life cycle (Harrison 1975). The

⁷ This cyclical mobility had more to do with family size in Chayanov's day, expressing the ebbs and flows of people in and out of peasant agriculture depending on social, economic and political forces as well as family size and ages. Family size influences available labour as well as motivation for production. In contemporary South Africa, there is the movement of people back and forth from rural to urban, both physically as well as the impact on available cash offered by remittances and wages which allows for the purchase of inputs including labour.

proposition was that without the pull of a capitalist incentive, the Russian peasantry had no tendency to create increasing economic inequalities and class antagonisms. With sufficient access to resources the 'peasant economy' was able to constantly reproduce itself both economically and socially. This theoretical positioning has been useful to sociologists, anthropologists and ethnologists who have used these insights to study the relationship between effort needed for farming and the demographic makeup of the household.

Although Agriculture is very different now to what it was in 18th Century Europe, elements of a Malthusian perspective have remained, in the way economic practice affects and is affected by political contexts. For instance, the justification for colonial agricultural systems that were engineered to secure labour and land for production in South Africa (Bundy 1979) and the influences of the industrial revolution and the assumption by growing urban populations that someone was obligated to feed them. More recently, there has been the political, environmental and economic debate over the increasing gap between the 'haves and the have not's with respect to the outcomes of technology in relationship to agriculture. First, the Green Revolution introduced cultivars optimised for irrigation and fertilizers in developing regions and more currently, the ethical tensions behind the debate over food security and genetically modified, corporate owned seeds. The Green Revolution had a mixed response. Norman Borlaug received the Nobel Peace Prize in 1970 for his lifetime work helping feed the world's hungry through the Green Revolution. In contrast, Vandana Shiva, an environmental activist at the time of the Green Revolution in India and recipient for the 1993 Right Livelihood Award, expressed an insider's perspective on the Green Revolution. Her analysis is that the high yield cultivars brought poverty and environmental destruction for third world farmers, and the beneficiaries were the agrochemical industry, large petrochemical companies, manufacturers of agricultural machinery, dam builders and large landowners (Shiva 1999). With respect to Genetic Modification, the Malthusian influence can be seen in the controversy revolving around the complications of regulation and distributive justice (Kinderlerrer & Aldcock, 2005). All of these are basically themes revolving around ethics (Thompson 2001) and control of interests (Kinderlerrer & Aldcock 2005, Scoones 2005).

8.1.3 The roots of development

One of the characteristics of political language in the development and sociological literature is the underlying assumption of poverty as the reason for developing rural areas. Rural areas are absorbers of the poor. Based on FAO statistics, the worldwide estimate is that 70% of the world's poor live in rural areas (UNDP 2012), where poor is defined as living under less than US\$ 1.25 per person, per day. In the debate around Agrarian change and the way in which food requirements are to be met for an increasingly demanding human population several themes have emerged. These are: the power of profit making motivating agribusiness and the multinational corporations that promote this; the ethical premise of global responses; and the plight of the global poor and those dependant on agricultural livelihoods. From the non-government international organisations, we have analyses concluding that agribusiness has “exacerbated poverty, destroyed the potential for dignified rural livelihoods, increased pollution and environmental destruction, and brought back the scourge of slave labour” (GRAIN 2012). The NGO, World Hunger Education Service Program (WHES) states on their website that “the principal underlying cause of poverty and hunger is the ordinary operation of the economic and political systems in the world. Essentially control over resources and income is based on military, political and economic power that typically ends up in the hands of a minority, who live well, while those at the bottom barely survive, if they do” (WHES 2012). The FAO world hunger statistics reflected in the 2012 World Hunger and Poverty Facts and Statistics show that hunger, which is perceived as inherently connected to poverty results from a neglect of agriculture relevant to very poor people by governments and international agencies; the current status quo of the world economy, and trends in food prices and environmental conditions (WHES 2012). Other commentaries point towards the private sector and speculative financial behaviour as negative influences on this status quo. For example, multinational commodity trading companies such as Glencore, imply that they are able to offer a solution to food prices and that they are helping fulfil global demand by getting the commodities that are needed to the places that need them most (Cusick, 2012). GRAIN (2012) challenges the encouragement of the private sector as the main engine for global food production as an approach that encourages governments to support large scale agribusiness and discounts the contribution of peasant and small famers, especially women,

to agricultural production. This raises the question; if food commodity trading becomes linked to speculation, the fundamental value of ‘food as a secure resource’ (implied by the concept of food security) is superseded by the profit making ability of ‘believing that agri-business is the solution to global food security’. For example, a recent World Development Report estimated that Barclays Bank made as much as £340 million speculating on the price of corn, wheat and soya as prices rose in 2010, followed by earnings of £189 million in 2011 as the prices fell (Bawden 2012). The economic role of speculation is to absorb risks that other economic role players (investors, arbitrageurs, hedgers) are not prepared to take. In purchasing and selling at times of risk, the principle behind speculation, and in this case food commodities would be to keep the food market liquid when no other participants are available, and absorb the risk that others in the market do not want (Goodwin *et al* 2009, p.373). The potential threat in this behaviour is for food prices to increase far above any realistic value that can be rationalized in terms of actual assets and profitability for the agricultural sector (Goodwin *et al* 2009, p373). This behaviour, according to GRAIN, OXFAM and other organisations is the same as trading in potential starvation and hunger in developing nations and profiting from the misery and suffering of poor people (Cusick 2012).

Ali Bapir (2012) explains that the notion of development is not the same as a method or specific model of development and the content of development should always be seen as an on-going encompassing process co-dependant on human empowerment. United States president Harry Truman initiated his ‘bold’ agenda in the late 1940’s, basically defining the academic debate about the ideas and meaning of development. The ‘development’ era ushered in by this agenda was founded on the assumption of Northern superiority in terms of knowledge, practice and economic priorities. This western view positioned open/free markets fed by large-scale, capital-intensive, mass-production enterprises run by multinational corporations as the engine for growth in underdeveloped countries (Lyson 2004, p24). The language used in this development discourse such as ‘poorer’ ‘transfer’, ‘economic growth’, and ‘less developed’, are all representative of forms of knowledge and subjectivity linked to power (Ali Bapir 2012). There is a tension between this language and the nature of agrarian communities and in particular traditional or survivalist societies who already have a great deal of social capital simply because of the soft and hard skills they

have had to develop in order to survive. In the South African context, we see this in the history of pre-colonial agriculture in KwaZulu Natal (Whitelaw 2008), accounts of livelihoods in KwaZulu Natal (Mtshali 2002) and the return to an African philosophy of ‘humanity’ described by Rukuni (2007). This raises the question that the failure of many development projects to result in social cohesion and/or increased agricultural production may possibly be a failure to tap into the existing *Gemeinschaft*⁸ while building a *Gesellschaft*⁹ that generates new ways of engaging with environmental constraints and a changing economy and society.

Generally, success for programs that encourage rural development through sustainable agriculture is monitored from an external perspective in terms of the context within which it is attempted. For example, the International Centre for development oriented Research in Agriculture (ICRA) uses an integrated approach to agriculture for rural development. They evaluate on the basis of how enabling the environment is in terms of policy, institutional structures, support systems, infrastructure, farming systems and markets (Adekunle *et al.* 2012, p96). The CERES research school, Netherlands, proposes that a local response to social change equally relevant to Western and non-western contexts will always address questions from two dimensions: does it improve the ability to make a living; and does the activity make a difference (Kalb, Pansters; Siebers 2004, p4)? Both of these questions are about economic, social, political and cultural issues (Kalb, Pansters; Siebers 2004, p4). Korten (1984) influenced development theory through his emphasis on agency and the power of social movements for development as collective action.

The idea of human agency arises from action theory in developmental geography championed by Prof. Norman Long (Spaan 2008, p9). In this view the individual human being is perceived as a self-directing, creative force and the reality of society and all its spatial patterns is the sum of individual decisions and choices. These choices are assumed to be influenced by impersonal social forces and by the rules and logic perceived as rational within a particular social setting (Spaan 2008, p9). In addition, the approach encourages an understanding of development processes such as economic diversification, agricultural commercialisation or globalization which mean different things and manifest themselves as

⁸ Used here as existing social networks - See p 175 for definition

⁹ Used here to imply deliberate associations because of self-interest- see p175 for definition

reflections of spatial contexts (Spaan 2008, p9). When we compare across regions or articulation of space such as in urban-rural linkages or the ebbs and flows of family generations in communal agricultural spaces, it is possible to study the way humans live, interact and transform the places and regions where they live, within the context of wider processes of socioeconomic development.

8.1.4 The Livelihoods approach in development

The livelihoods approach is a way of thinking about how resources are managed and arranged to benefit the well-being and need for human security from the perspective of the people who are in command of those resources (de Satge & Halloway 2002; Carney 1998). When there are not enough resources to provide a self-determined future this is considered poverty¹⁰ whether partial or abject. When there are sufficient resources, equity in access, and people have the capacity to command the arrangement and management of these resources to achieve livelihood outcomes, then a person is said to be livelihood secure. The livelihoods approach was developed as social researchers and policy makers began to grapple with the impacts of structural adjustment in the development era that led to even greater inequality between the incomes of powerful elites and resource poor masses. The approach is based on the principles articulated by Diane Carney as shown in Figure 8.1.

The tragedy of the development era was in responding to a heterogeneous and diverse majority through the worldview of a homogenising and narrow minority (Esteva 1992, p7) and as a linear journey from underdeveloped to developed (Ali Bapir 2012, p2). A new phase in understanding development was introduced to the development agenda with Sen's argument of Development as Freedom (Sen 2005) and that development is the removal of 'unfreedoms' where society's progress is assessed by the support of substantive freedoms and effectiveness is dependent on social opportunities that encourage the ability for individuals to shape their own destiny and help each other (Sen 1999). And so we are left

¹⁰ Poverty has ceased to become simply a lack of income. There is no single correct definition of poverty, however, as most researchers now accept that the definition has to be understood, at least in part in relation to particular, social, cultural and historical contexts. This has implications for studies that attempt to compare poverty in very different kinds of society and or assessing sectorial deficiencies or needs for development. A material definition that may be unique to a particular context should also be understood within a wider social scientific framework concerning 'well-being', capabilities', 'human flourishing', quality of life and social quality in order to import this to the wider society (Lister 2004, p4,25)

with thinking about development from two very different perspectives – one is linked to economics as the measure of progress and the other, the capacity for human beings to take responsibility for and determine sustainable futures.

People-centred: focuses on what matters to people, understands the differences between groups of people and works with them in a way that is congruent with their current livelihood strategies, social environment and ability to adapt.

Responsive and participatory: Those who live with the consequences of macro-micro level decisions made must be key actors in identifying and addressing livelihood priorities.

Multi-level: livelihood security requires working at multiple levels, ensuring that micro-level activity informs the development of policy and an effective enabling environment, and that macro-level structures and processes support people to build upon their own strengths.

Conducted in partnership: with both the public and the private sector.

Sustainable: there are four key dimensions to sustainability - economic, institutional, social and environmental sustainability. All are important - a balance must be found between them.

Dynamic: support for livelihoods must recognise the dynamic nature of livelihood strategies, respond flexibly to changes in people's situation, and develop longer-term commitments.

Figure 8.1 Principles of the Livelihoods Approach (Carney 1999, p7)

8.1.5 What happened to the Peasants?

The word ‘peasant agriculture’ means different things to different people. For some it is a derogatory term suggesting ignorance, non-commercial, non-productive and backward (Kirsten & van Zyl 1998). In other discourses it is perceived as resistant to the linear trajectory of modernisation. Kirsten and van Zyl (1998) published a paper that helped the use of small-scale as a positive term within the current political language. Their definition is that “a small farmer is one whose scale of operation is too small to attract the provision of the services he/she needs to be able to significantly increase his/her productivity” (Kirsten & van Zyl 1998, p564). This definition is used interchangeably by the researcher

as the fundamental assumption behind the use of the phrases, ‘homestead agriculture’, ‘traditional agriculture’, ‘small-scale’ and ‘small farms’.

Deborah Bryceson (2005, p2) describes peasant farmers using four criteria:

“Farm –the pursuit of an agricultural livelihood which combines subsistence production with commodity production”

“Family – internal social organization based on family labour, whereby the family serves as the unit of production, consumption, reproduction, socialization, welfare and risk-spreading”

“Class – external subordination to state authorities as well as regional or international markets, inferring surplus extraction and class differentiation

“Community – village settlement and traditional conformist attitudes and outlook”

She explains that the history of peasant farming shows an ability to survive because of an ability to negotiate between agrarianisation /deagrarianisation as rural populations expand and contract and peasantisation/de-peasantisation because rural producers fluctuate depending on labour changes in response to changes in farm, family, class and community. Bryceson refers to this as the negotiation complex (Table 8.1).

Table 8.1 The negotiation complex (after Bryceson 2005, p.3)

Areas of continual negotiation (Bryceson 2005, 299-300)	
Context specific negotiations	<ul style="list-style-type: none"> • Access to productive resources; land, labour, capital • The amount of production risk • Terms and conditions of production as socially constructed roles and responsibilities (borrowed from Esther Boserup’s economic theory)
External specific negotiations	<ul style="list-style-type: none"> • The terms and conditions of production, notably the level of externally provisioned social and productive service infrastructure • External extractive claims on their labour product

This is a very useful concept in moving the conceptually difficult and unhelpful analysis of peasant farming as an economic unit for linear development and growth to sustainability as the paradigm for method and theory in understanding their contribution to society. Bryceson’s research has shown that ‘peasant’ agriculture simply does not fit into analytical

categories because it is a group highly differentiated by class, gender, age and locality. This, she claims, is why the peasantry should be perceived as a population that combines commodity and subsistence production rather than a group who are 'primarily subsistence producers' (Bryceson 2005, p299).

McMichael (2006) strongly condemns the current globalisation agenda for creating trends that dismantle farming sectors (especially the peasantry) which not only undermines stewardship of the land, but also assumes that food security is the equivalent of a global market relationship. The result, he warns, will be an endless supply of surplus labour from the impact on agriculture through the destabilising effects of globalisation. These McMichael (2006) identifies as: the new balance of forces that incorporate agriculture as economic units linked to global industrial-retailing circuits; the ethics of intellectual property rights protocols that displace peasant knowledges through seed monopolies; globally-managed circuits of food that displace small farms with food imports, contract farming; and the more indirect dismantling of farm sectors through privatisation which will eventually consolidate them with corporate agriculture. McMichael (2006) maintains that the only way in which to fight the sociological impact is for the peasantry itself to confront this assault through a worldwide politicised movement of rejection.

Bundy's account of the rise and fall of the South African peasantry from 1870-1913 (Bundy 1979 & 1988) outlines the history of agricultural change in South Africa: in particular, the influences of the unjust social, political and economic engineering of African traditional farmers at the hands of apartheid engineering. He argues that although hundreds of thousands of African peasants preferred subsistence agriculture as an alternative to wage labour on white farms, an adapted form of the traditional agriculture emerged that opted for a limited participation in the produce market. A smaller but significant group of black farmers departed 'entirely' (Bundy 1979 & 1988, p13) from their traditional agricultural economy by competing effectively with white farmers. Those farmers who parted from traditional subsistence farming made considerable adjustments which also caused a breakdown of the influence of customary governance on their farming practices. In turn however, it allowed for the emergence of new patterns of behaviour and social relations among what was basically a new class of peasants who themselves began differentiating into employer/employee relationships. Bundy's account offers a rich picture of the diverse

forms and special tapestry of African peasantry that inspires the imagination for re-inventing a peasant class in the South African context.

8.1.6 The concept of community

Within the context of this research, the complexity of communal land tenure lies at the heart of agrarian change in South Africa from both social and productive perspectives. Community is a term with various meanings in different contexts. The community networks mentioned by participatory discourse have their roots in the assumption that community refers to people in a geographical location bound together through location, interests, survival, kinship or any other reason for joining forces. We see this in the earlier writings of Chambers (1997), Whiteside (1998), Pretty (1995) and in the language of well-known organisations such as the FAO, the International Institute for Environment and Development (IIED) in their Participatory Learning publications known as PLA notes. Sociological discourse refers to the two types of human association coined by Ferdinand Tönnies (2012) in *Gemeinschaft* translated as ‘community’ and *Gesellschaft* ‘society or association’. *Gemeinschaft* suggests a tighter and more cohesive social entity characterised by communal networks like kinship relationships and shared social understandings such as belief systems or shared geographical spaces¹¹. *Gesellschaft* is the coming together of people who participate because of self-interest. Rather than a reality, these concepts are actually ideals that reconcile the organic and social-contract conceptions of society (*Gemeinschaft* and *Gesellschaft* 2012). More recent literature that looks at communities of interests, draws on the trend to replace the term community for the concept of ‘living systems’ as a ‘purposeful intentionality’ for adapting and generating what could or should be in terms of people as resource for continuous changing action (Wadsworth 2010, p139). The concept of communities-of-common purpose presented by Falk and Kilpatrick (2000) are the most useful within the frame of participatory development in the South African context of communally owned lands. It is not just the question of tenure; the context is neither traditional nor modern. It is a complexity of the dual socio-cultural-political organisation and the complexity of context and processes inherent in land overseen by both

¹¹ Archaeologists refer to community as place. Without the social records of ancient cultures, similarities are identified by connections of material culture e.g. similarities in archeological artifacts located in geographical areas or along discernible lines of contact between locations.

municipal representatives (political) and tribal chieftainships (socio-cultural-political). Particularly suitable is the understanding within this definition that people also have multiple memberships of such communities-of-common-purpose, not just agricultural strategies. This is especially useful as a definition of community that incorporates the South African context of transforming traditional agriculture within the dual socio-political context of Ngonyama Trust Lands. It is not just the communal nature of tenure that is of importance, but the urban-rural linkages and migrations which influence demographics and the livelihood strategies that maximise accessible resources. The GT research by Falk and Kilpatrick (2000, p.102) on indicators of the building of social capital reveal a model for the simultaneous building and use of social capital. Whether these interactions are positive depend on the existence of sufficient numbers of interactions of a particular quality. The quality of these interactions depends on the quality and degree of sharing of knowledge resources, the quality of identified resources, the degree to which community members build each other's self-confidence and esteem or encourage positive identity shifts in each other.

8.2 Agrarian Priorities

Agricultural trends as they have been described so far represent food production as commodity production strongly influenced by economic policy. As a result, economies of scale, specialisation and other strategies to improve economic efficiency have shaped agriculture into an industry rather than the relationship between benefits and land management required for sustainability. The products of this system are a narrowing range of foods produced in bulk. These foods that are increasingly subject to trade and safety regulations as they are stored for extended periods of time and or are transported around the globe to consumers who now demand and rely on foods that can only be produced in the soils and climates of other places (Higgins & Lawrence 2005). Agriculture has become an industry designed to fit the 'export' market place.

A counter trend to this industrialisation and globalisation of agriculture is the civic agriculture movement. Conceptually, civic agriculture refers to multi-dimensional economic activity embedded into formal and informal labour markets, local systems of exchange and other mutually beneficial endeavours in communities for producing,

accessing and learning around food and its production (Lyson 2004). Lyson (2004, pp61-83) describes key comparisons between the two approaches to food production. Instead of a production model for agriculture, a development model, conscious of household and community welfare, includes a broad array of environmental, economic and social factors into production decisions that serve local consumers.

- The experimental biological approach that identifies favourable traits in plants and animals for maximum yield, develops them as private property and then markets them as commodities has been resisted with an ecological-biological approach that aims to optimise and moderate production.
- The large corporate firm that succeeds in a global economic system is traded for production districts where smaller firms, linked socially and economically to local communities share information and combine forces to market their products. Employees and business owners linked to communities are less vulnerable to corporate employers who demand loyalty over community and social priorities.

As drivers for change, the freedom to develop self-interest and technology which allows for greater productivity serves the corporate world well where company loyalty and interpersonal competition is what wins rewards. However, the civic movement seeks to drive change through social movements orientated to building trust, community problem solving and a shared responsibility for the common good. And finally, civic agriculture uses the practice of sustainable agriculture, not only to produce food that is safe, fresh and accessible, but to also create jobs, encourage entrepreneurship, strengthen community identities and offer consumers alternatives to the mass production of commodities available from supermarket shelves (Lyson 2004, pp61-83).

Policy that supports civic agriculture requires encouraging local economic development, protecting agricultural land use from random residential development or large corporate interests, supporting local agricultural marketing by providing infrastructure, economic incentives and education, and last but not least, a development strategy that encourages problem solving (Lyson 2004).

And so we are left with two very different ways of thinking about agriculture:

- A theoretical framework of agriculture designed to fit a global market place. This is the trend that sees commercial agriculture as the ‘blue print’ for farming. Forever striving to feed a growing population, and providing ‘global food security’ along the linear lines of technological and economic advancement shaped by global economic and governance structures.
- An additional conceptual framework for agriculture that is integrated into the social and cultural fabric of communities.

8.2.1 The South African Context of ‘agrarian transformation’

South Africa has a history of specific racial policies which resulted in negative implications for land distribution and ownership. This heritage of inequality was formalised with the implementation of the two Natives Land Acts of 1913 and 1936. The first act gave only 8% and the second only 13% of South Africa’s territory to non-whites, who at the time represented about 90% of the country’s population (Anseeuw & Mathebula 2008, p1). This legislation further confined the coloured population to reserves and the black population to bantustans, where land tenure was insecure and farming practices mainly communal. Other measures restricted land tenancy or sharecropping possibilities for black and coloured populations living on land owned by white farmers, which in effect suffocated the (commercial) farming activities of these non-white farmers and prompted an exodus to the reserves and bantustans. The result of these policies was the acquisition of land by whites and the elimination of the black peasantry, who then provided cheap adult male labour for the commercial farming, industry and mining sectors (Anseeuw & Mathebula 2008; Bundy 1979 & 1988).

In South Africa, there is no definite definition for rural, especially since all land has been allocated to municipalities under the Municipal Demarcation board, but it is commonly understood to refer to protected wilderness areas, commercial farming areas, communal land and the small towns and human settlements interspersed between them. The impact for building Local Economic Development by the public sector is however, dependant on the ranges of capacity of the different municipal structures. They differ in human capability (competence) for planning, managing and innovation within the municipal staff

as well as the range of material resources available depending on location and residents (Goldman & Reynolds 2007).

Within the RDP program, land reform was a priority for redress of injustices (South Africa 1994). Within the Growth, Employment and Redistribution (GEAR) strategy, the assumption was that land reform was essential for ideological transformation. It was very quickly realized that this political liberation also required an economic liberation in the form of a market-led approach to ensure equal access to markets and services. What this meant practically was a “willing-buyer-willing seller” principle (Anseeuw & Mathebula 2008) and land would be transferred at market related prices. The idea was that this would ensure economic stability as well as address the social justice issue, while retaining the support of international organisations and interest of investors.

Figure 8.2 provides a diagram summarizing the linear trajectory expected of commercial agriculture in South Africa and the different phases of land reform designed to effect this goal. In the first phase of land reform (1994-1999), Settlement/Land Acquisition Grants (SLAG) were focused on the poorest of the poor offering small grants for households to purchase land, invest in agriculture on communal land or in land acquired through the restitution programme, or for use in housing projects which were technically outside of the farming sector. In the second phase of land reform (1999-2004) subsidies were used to encourage the development of farming activities. Whether intentional or not, the goal of commercial agriculture was assumed through the awarding of grants and transfers of agricultural land to individuals or limited groups who were prepared to submit viable business plans and contribute their own funds (Anseeuw & Mathebula 2008).

8.2.2 Current Agricultural Policy in South Africa

The most basic understanding of policy goals for agricultural reform in South Africa are the use of agricultural land for the use of commodity production within a capitalistic economic framework. This assumes a linear progression from subsistence farming to commodity production for export. The objectives of land reform itself are to ensure that 30% of the 82 million hectares (24.6 million hectares) of South Africa’s agriculturally productive land presumably owned by white farmers is made available to the landless poor by 2014 (Nkwinti 2012). Land reform consists of redistribution and restitution. Land redistribution

and tenure reform to account for 55% of the 24.6 million hectares that make up the 30% land restitution (Act no. 22 of 1994) accounts for the other 45%.

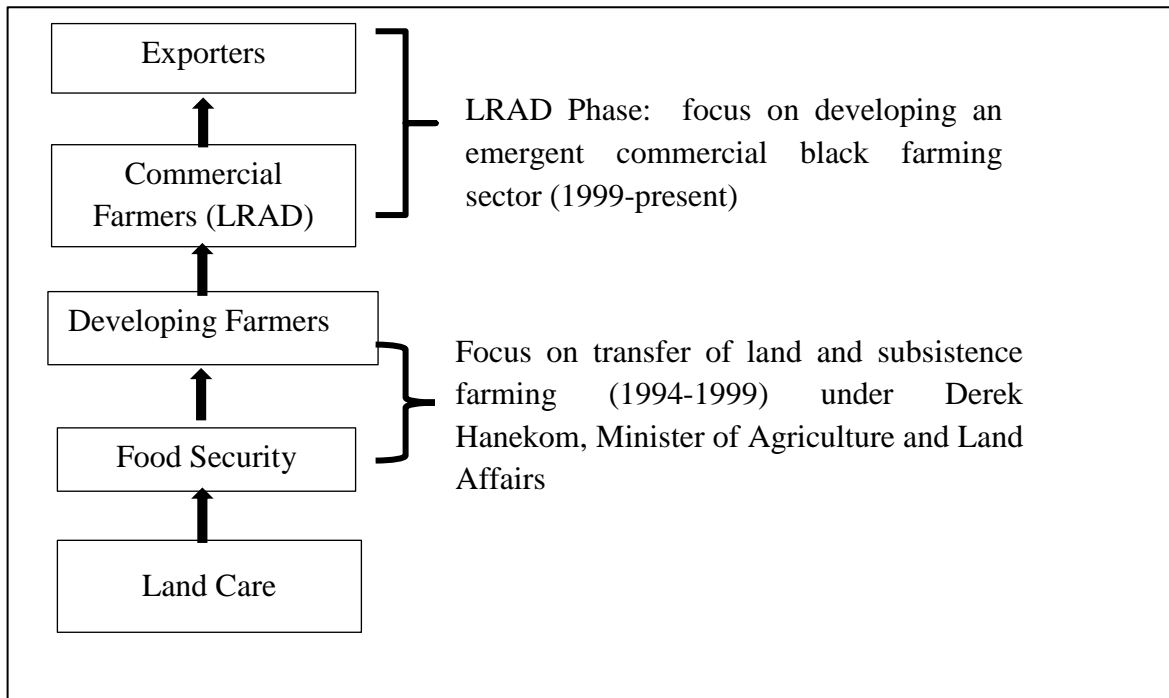


Figure 8.2 South African National Policy objectives for developing the agricultural sector (after Anseeuw & Mathebula 2008).

The Strategic Plan for the Department of Agriculture, Forestry and Fisheries, outlines the role of DAFF in implementing rural development in South Africa. It consists of a three pronged strategy including Agrarian Transformation, Rural Development and Land Reform (DAFF 2011). A current debate amongst all sectors in South Africa is that land reform has failed to meet its objectives and is often accompanied by emotion, even within political and academic discussion. An example of this emotion is expressed in the quote below:

The South African agriculture economy has little or no room for emerging farmers; with no strong support system, being an emerging farmer in South Africa can be a hopeless adventure. Introducing market liberalisation in 1992 has aggravated the difficulties; it was naïve for the country to introduce such measures at the dawn of democracy when the state presence needed to do much to establish new black farmers. South Africa's agriculture economy under apartheid blossomed because of state

subsidies, and similar support programs in America and Europe helped their agricultural economies to thrive (Davison Chikazunga).¹²

How we understand rural development in South Africa is inextricably linked with land reform. The social engineering of the apartheid era and the impact this had on destroying the African Peasantry movement (Bundy 1979 & 1998) as well as the alienation of the majority of people from agricultural land and technological support for productive agriculture has resulted in unequal economic and spatial development. The current Land Reform Process is perceived as supporting an increasing commodity production in response to a pending regional Food Security Crisis (Scoones 2005). In this model, farms are ‘units’ who must link to large scale agribusiness through production contracts. Various frameworks for transformation whose roots are located in the basic contestation over land have recently been put forward. In post-apartheid South Africa, black economic empowerment as well as Land Reform are state interventions designed to facilitate social change. However, Paul Hebink (2008, p38) suggests that land reform cannot be understood properly if one only considers a linear policy objective with the use of the prescribed means and instruments in a particular context.

8.3 Development and Research in Agriculture

Social capital is a sociological term raised to interdisciplinary consciousness by the World Bank’s commissioning of social surveys in the 1990’s. It refers to the expected collective or economic benefits derived from the preferential treatment and cooperation between individuals and groups. Social capital combines a horizontal aspect representing cooperation and trust between individuals with a vertical aspect representing the value derived from strategic alliances (Koka & Scott 2002) and enhanced supply chain relations (McGrath and Sparks 2005). This ‘goodwill’ available to individuals or groups, is the source of social capital embedded in the structure and content of the actor's social relations. The outcomes flow from the information, influence, and solidarity it makes available to the actor (Adler and Kwon 2002, p23). Falk & Kilpatrick (2000) propose that interactions only make sense when placed within a framework of a set of purposeful community activities.

¹² 28 March 2012 Plaas Blog – Another Country

Since it is the everyday interactions through which social capital is developed, the definition of social capital most useful in a development context, is that social capital is the product of social interactions that have the potential to contribute to the social, civic or economic well-being of a community–of-common-purpose (Falk & Kilpatrick 2000,p103)

8.3.1 Social capital as the currency of sustainability

Almost immediately, one can see that whenever social capital is being facilitated, the question of power with its intended or unintended consequences will arise. Where cooperation builds bridges, society can benefit. Where hierarchical relationships facilitate exclusivity or individual benefit, then they do not support social cohesion and may have a negative impact or even be a burden on society.

The difficulty in dealing with this learning as a social construction of reality lies in the ethical frameworks¹³ for analysing differential roles and power on social attributes such as ethnicity, gender and class (Falk & Kirkpatrick 2000, p88). This tension is also reflected in the development of two philosophies underlying current development agendas: capitalism based on self-interest and competition; and communitarianism which shifts the focus of interest away from individuals towards communities and societies. Communitarianism as a concept expects that the question of priority in the development agenda must be determined when dealing with social issues.

The variety of ways in which groups of people assign roles, identify rules, precedents and procedures within the networks that contribute to cooperation can be referred to as structural social capital (Hobbs citing Uphoff 1999). Complementing these structures are the norms, values, attitudes and beliefs which translate the cooperative attempts towards goal-oriented behaviour (Hobbs citing Uphoff 1999). Once common goals are identified, understood and shared, the commitment to on-going negotiation builds social capital (Hobbs citing Sable 1994). The value of this association lies in the norms of reciprocity as outcomes of these negotiations. In coping with change, the formalising of a social institution on a shared world view requires members to modify their behaviour and

¹³ Although not a part of the discussion in this literature review or this study, Critical Social theory (Habermas 1972) provides a broad ethical framework within which to explore these attributes (gender, age and class)

expectations thereby strengthening the group's capability to extend their activities into previously unexplored areas (Hobbs citing Hechter 1987).

Although each academic discourse has its own definition for and perspective on what social capital is, there are two universally agreed to aspects. The core idea shared by all is that social contacts affect the productivity of individuals and groups (Putnam 1995). Since definitions are usually restructured to suit a particular paradigm, it is more useful to identify an operationalization or conceptualization for social capital in a discipline (Hobbs 2000). In referring then to social capital within the complexity of agriculture as technology and economic development as motivation for production, the question more useful to development than 'how to define social capital' is 'what is the role of agency and learning in creating social capital that supports norms of reciprocity for desired economic, social and environmental outcomes in the context of agrarian change'? Falk and Kilpatrick (2000, p92) identify the origins of social capital as the accumulation of the knowledge and identity resources drawn from communities-of-common-purpose where learning interactions at an individual level are embedded in group levels as a group goes about making economically driven changes. Interactions between members are sites for building social capital and will be increasingly important determinants of economic growth. Falk and Kilpatrick (2000, p92) make three assumptions about this learning. a) When interactive learning is the process, different types and effects of social capital can potentially accumulate as the outcome (for example, flexibility and confidence in decision making). b) The learning itself occurs within two dimensions: as a reflexive process that defines learning with a chronologically defined set of practices or learning actions, and a particular socio-cultural context which integrates societal and institutional values. c) It must be understood that if social capital is a resource which can be built and drawn upon, it can also be depleted (Falk & Kilpatrick 2000, p93).

Innovation relies on effective communication to stimulate dialogue and mutual discovery, to solicit feedback and to listen and learn (Saginga *et al* 2009). Conceptually, learning interactions located in a particular historical context, with external interactions, reciprocity, trust, shared norms and values leads to the accumulation of social capital (Falk and Kilpatrick 1999). Action Learning facilitated by insiders or outsiders, where experiences are shared and iterative, is one such possibility for quality learning interactions. More

specifically, the planning and implementation of stakeholder-focussed community projects are considered as opportunities for building capacity. Learning that occurs in shared contexts allows for people to exchange what is already known, and to analyse these exchanges by reacting against someone else's thinking (McGrath & Sparks 2005, p 125). As people learn, what they know changes, leading to innovation that shares the creativity of multiple perspectives and creates new knowledge as we test what we know against the dynamics of our environment. This kind of participation rarely happens spontaneously. Agency is required in preparing people to network (Albee & Boyd 1997). As a social process, support is needed to help people gather information about their circumstances and resources, analyse the situation, prioritise actions they wish to pursue, join together into a group or an organisation of their own choosing, and work out the means to implement these actions. This process of action-reflection-action is the core process of social preparation and legitimacy for participatory community development¹⁴ (Albee & Boyd 1997).

8.3.2 Identity “place in the world”

In Figure 8.3, Falk & Kilpatrick (2000, pp. 98-101) describe two indicators for processes in the creation and use of social capital. These are the use of knowledge resources in interactions and the use of identity resources to re-shape individual identities that facilitate participation and agency that benefits community. Using knowledge resources in interactions draws on common understandings related to community, personal, individual and collective information. The knowledge is derived from an understanding of what skills, values, physical and social resources are available. Whereas the frequency of interactions is important for building and using social capital, the quality of the interactions is expressed in jointly shared norms and values leading to trust and reciprocity. External interactions are important because lack of sources outside a community result in restricted knowledge. Identity resources that draw on internal and external resources build a sense of belonging and encourage participation facilitating individuals to re-orient their views and create a new identity. The changing of individual's perceptions of themselves required for

¹⁴ Researcher reflection: It is at this point of participation, where development as a linear progression of modernity becomes derailed in my understanding. The problem with participation has been that the people being ‘developed’ perceived a different view of social capital than that which supports economic agendas.

identity formation facilitates people’s agency and their willingness or capacity to act for the benefit of community in new and different roles within the dynamics of change.

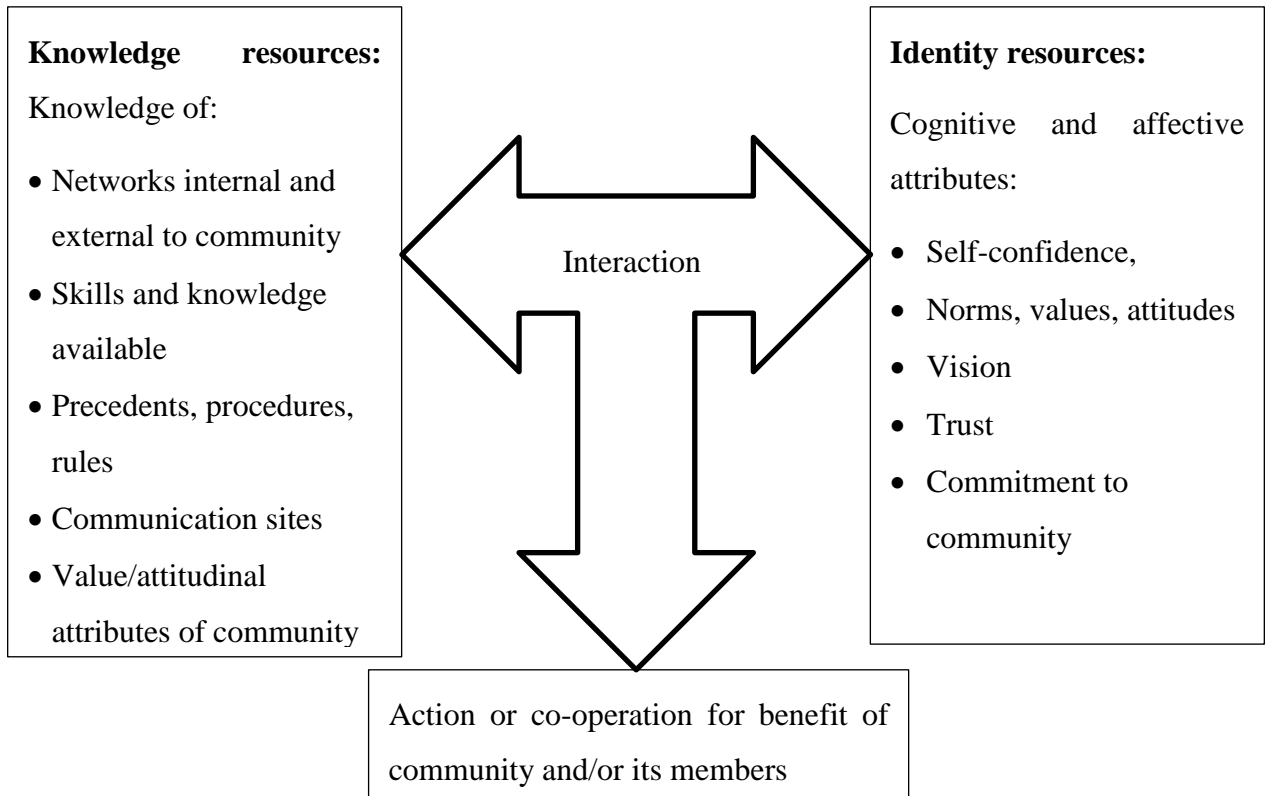


Figure 8.3 Simultaneous building and using of social capital for community benefits (Adaptation of Falk & Kilpatrick 2000, p101)

The challenge for participatory research is to express the connections being made between micro-level social interactions and their potential role as agents of change. Because the interactive opportunities draw on knowledge and identity resources, they produce a counter-move in the interaction known as reciprocity. From a development perspective, this entails identifying the links between micro social process and the social, civic and economic features of the macro social, economic and political order. At the analysis level, this entails identifying the linkages which combine the meso with a macro perspective as relationships between empirical data and a broader social meaning (Falk & Kilpatrick 2000, p101). Figure 8.4 presents these relationships through the iterative and hierarchical loops as shown.

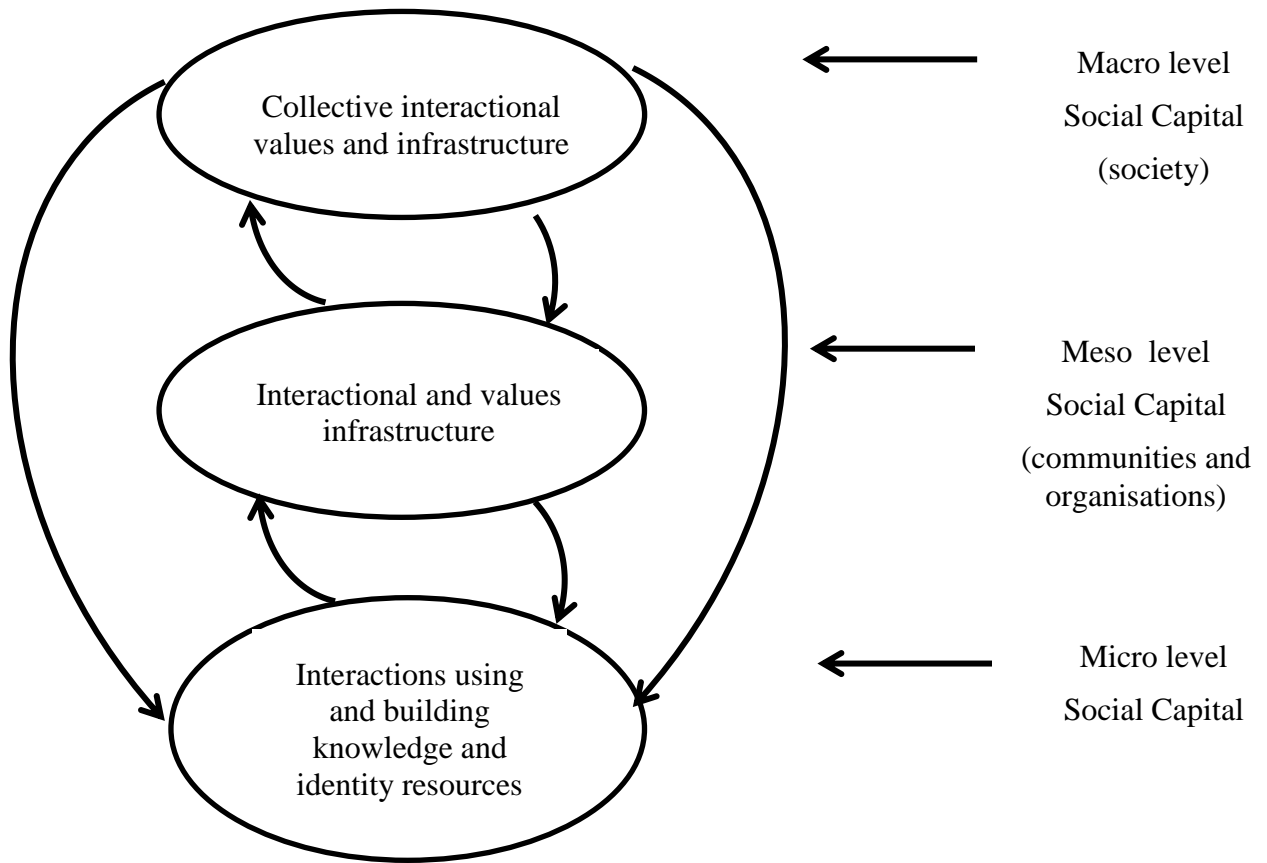


Figure 8.4. Societal and community level social capital resources sustained by interpersonal interactions (Falk & Kilpatrick 2000, p105)

Gee's definition of Discourse (Gee 1990) allow various discourses to be reconciled in describing the 'what' of these connections. An example is the theory of systemic integrity that emerged from the grounded theory construction of this research. The use of grounded theory for an interpretive process develops a framework for explaining and analysing the meanings and characteristics of commercialisation activities and the interactions. Furthermore, another aspect, usually missing from the 'what' is the question of values, their nature and influence (Falk & Kilpatrick 2000). The use of sensitising concepts emergent from the context provides a guide for interpreting the nature and influence of these values. Complementary to both these processes is the need to provide the theoretical links which show how the structures and systems are created, how they change and how they connect (Falk & Kilpatrick 2000, pp89-90).

8.3.3 The contributions of the livelihoods approach to research and development

In a clear and critical look at the development and challenges facing the use of the livelihoods perspective in development, Mayke Kraag (2004) presents a historical account and pathway forward for livelihoods research. A livelihoods perspective looks at the day-to-day struggles of making a living, indicating an approach that aims at a people centered perspective of resource management that is grounded in the multi-dimensional realities of everyday life and capacity for utilising available resources. The value of the Livelihoods approach for development has been in appreciating how specific groups actively shape their lives in particular contexts through the management of material and non-material assets. While appreciating the constraints of context, it still allows researchers and practitioners to focus on people as agents for self-determined change rather than as victims of structural constraints, unequal access to resources and unequal power relations (Kraag 2004, p53).

Three types of contributions have provided scholarship in developing the basic ideas of the livelihoods approach: case studies which focus on the livelihood strategies of a particular group of people within particular environments; theoretical contributions that broaden the scope; and thirdly, efforts by policy circles to develop analytical frameworks to develop policy interventions for more situated people groups (Kraag 2004, p53). These contributions have mostly been made in response to attempts since the late 1980's to help understand and address the adverse consequences of macroeconomic recipes for solving the problems of poverty and development in developing countries. The enduring usefulness of the livelihoods approach has been as an emergent perspective capable of adapting and changing to social realities for specific target groups and the influences of exchanges between social scientists and policy makers (Kraag 2004, p53). As an example, if one looks at the dimension of people centeredness, the CARE and OXFAM livelihood frameworks are used as an analytical tool for poverty research that focus on the rights and needs of the poor. The UNDP model focusses on driving factors and entry points for creating macro-micro linkages. Similarly, the DIFID framework places an emphasis on participation of the poor in influencing the institutions and processes that impact on their lives (de Satge & Halloway 2002).

Within the context of agriculture as a driver for development as emphasized by the NEPAD's Comprehensive Africa Agricultural Development Plan (CAADP), and the Forum for Agricultural Research in Africa (FARA), influencing national agricultural strategies, such as the South African National Strategy for Agriculture, there is the potential for political dimensions and the ideology associated with very specific ideas and preferred modes of life to come into conflict (Kalb, Pansters and Seibers 2004, p4). Kraag (2004, p.69) argues that because power relations cause constraints on the ways in which people make a living, one way of obtaining a longer-term perspective includes studying current perceptions of the future or current social arrangements to secure a livelihood over time (Kraag 2004, 69).

FARA utilizes an Integrated Agricultural Research for Development approach (IAR4D). The Department for International Development has adopted and promoted this approach for innovation, relying on the practice and successful principles of approaches such as Integrated Natural Resource Management, farming systems research, and participatory action research. Therefore, the approach means not just increasing participation, but also strengthening linkages and interaction among key stakeholders in ways that facilitate idea sharing and joint action. It also implies accelerating learning by and among stakeholders to respond to changing complex agricultural and natural resources management contexts and achieve developmental outcomes. They have recently published a selection of 21 case studies that report on their experiences and the contributions of this multi-stakeholder approach (Adekunle *et al* 2012). The challenge however, continues to be producing theory from these action research and action learning experiences (Dick 2005).

This research interprets from the researcher's perspective an experience of participatory collaboration supporting social agronomy. It uses a constructivist grounded theory where day to day activities were constantly compared to sensitising concepts that established a set of values and regulations for transformational learning that give voice to an insider perspective on the shape and nature of small farming as a way of life. Exploring the experience of producing for a market over time, and constructing a theory about what was happening, required attaching meaning to 'what our experience is' with the essence of economics which is 'making choices'. Farming as a livelihood is both about the realities of everyday life and the choices that can be made within the economic, social, and

environmental forces that sustain manipulate or threaten a particular farming environment. Although a sustainable livelihoods approach was adopted as a philosophical framework for interdisciplinarity, neither the farming system as a social or economic set of choices, nor sustainability as a theoretical investigation were the subject of the study. Any livelihood that includes small farms in communal spaces, will articulate over geographical and temporal spaces (such as urban rural linkages) or from ebbs and flows of labour (such as urban rural migrations or to generational gaps). The innovation with and exploitation of these inherent characteristics are and should be the focus of further research. Even so, this too was not the focus of this study.

When members of the EFO asked the question in 2005, “how can our experience of commercializing *amadumbe* production contribute to an economic model for building rural communities”; the researcher decided that a knowledge building response tailored to accommodate an insider view required two processes; exploring the choices that farmers made in the production of *amadumbe*, and constructing a meaningful interpretation of the values and beliefs that guided choices. A constructivist approach, using the researcher’s interpretation of concepts selected as ‘sensitising concepts’ from within the organisation itself, provided an insider conceptual framework for interpreting activities that ranged from individual to collective choices. From this constant comparison, a set of abstract concepts were drawn, providing a theoretical representation of how the researcher interpreted the social cohesion and agricultural activity perceived as appropriate and realistic. The core conceptual characteristic of this interpretation is “systemic integrity” representing a development trajectory for social agronomy that is ‘appropriate’ in that it is based on articulated organisational values and ‘realistic’ in that it is interpreted from farmer’s actions in a specific time period. The concept of systemic integrity as a theoretical representation of legitimate meaning and choices by a specific farming community, is presented as an alternative strategy for developing market oriented agriculture within the South African National agenda for ‘agrarian transformation’.

Traditionally in the agricultural sciences, a review of literature would look at agrarian change from a single perspective (e.g. agricultural extension) and identify a gap in the literature or a recommendation for further research that might test a model or discover a new component, relationship, structure or function within the relationship between

technology transfer and farming practice. Only by reading the literature on Action Learning and Action Research did I discover the need for building theory from participatory experiences (Dick 2004).

The literature covered in this review, attempts to span the breadth of disciplines that have affected Agrarian Change. It selects a range of ideas and practice with respect to influences affecting the fate of rural livelihoods and in particular the fate of peasant or subsistence forms of agriculture, and attempts to show the complexity and depth of historical perspective that we have to draw on for returning peasant agriculture to the political and academic debate. While it does not achieve a discipline based perspective, what it does do is expose the diversity of tradition, theory and practice involved in agrarian change. If so many disciplines are impacted by and impact on agrarian change, there is no doubt that interdisciplinary theory should emerge from the nature of these influences.

Two alternatives in thinking about developing agriculture were highlighted: an economic efficiency framework of agriculture designed to fit a global market place requiring global governance to regulate sustainability; and a conceptual framework for agriculture, that is integrated into the social and cultural fabric of communities for sustainability. It is indeed time for small farmers to re-write their history. It is the challenge of research to assist with this and to develop new theory that includes the voices of society and allows for the interdisciplinary advantages of innovative problem solving to become the future's historical foundations.

9. RELEVANCE AND RECOMMENDATIONS

9.1 Meanings and implications of the research

For the SANPAD Participatory Project, this research attempted to identify and interpret the information that lay between the process of farmers accessing a particular market and the catalytic efforts of researchers engaged as stakeholders in supporting the commercial production of *amadumbe* for a specific market niche. In the collaboration between academic and non-academic spheres, there existed multiple realities: each with their own priorities, norms of behaviour and complexity. Interdisciplinary research has shown us that the spaces between these elements are full of information. For agricultural scientists attempting research that is both participatory and transdisciplinary, the nature of science, ways of knowing and legitimacy of methods pose a challenge for moving beyond discipline boundaries and tapping into this well of information. The researcher found herself tasked with the exploration of these inter-reality spaces.

Reflecting the multi-disciplinarity of stakeholders, the learning in this research process also needed to be expressed in language that would address social scientists, agricultural scientists and practitioners as well as farmers. To this end, the research report attempted to bridge the reasoning behind positivist and constructivist philosophy through language use and explanations that compared or described differences and similarities. With the objective in transdisciplinary science being to find innovative solutions in response to social priorities in the application of science, the researcher found herself also drawing towards literature, theory and ways of thinking from multiple discipline based knowledge, participatory engagement, and systems thinking. This is difficult to communicate in a single research report as it requires placing new knowledge within the theory or practice of each of these disciplines. To do this process justice, the unpacking of this information in relation to different theoretical constructs has been scheduled as a post-doctoral research commitment. For the time being however, the study is located within the context of Agrarian Change.

9.2 Relevance of the research to literature

The theoretical concept of ‘systemic integrity’ developed in this research proposes an alternative trajectory for supporting rural economic development in South Africa. The experience of the EFO farmers is an example of a “moving target”, what Bryceson

(2005, p30) challenged researchers to capture in her invitation to bring peasant agriculture back into the theoretical and policy debates within Agrarian Change. And what Buchholz (1989, pp3-5) describes as the ‘impossible task’ of the economist where ‘isolating causes and influences’ becomes exasperating in the dynamics of changing human relationships and social institutions. Even so, the concept of systemic integrity represents a homestead farming system in transition as an interpretation of a complex process where commercial activity is re-invented as a livelihood strategy for homestead farmers. The SANPAD project experience invites us to re-think the contribution of ‘ebbs and flows’ (Bebbington & Batterbury 2001, pp369-380) of adaptive peasant production systems as a contribution that complexity can make to agricultural productivity and social cohesion. It challenges us to think about enabling communal land tenure as a means for strengthening rural reliance on and nurture of the land as complementary to private ownership of land with its assumption of linear economic growth and development. It raises the fundamental analytical question implied by sustainability: how progressive social change may show patterns of restraint and growth where self-interest as an ideological choice competes or cooperates with self-interest as economic choices. By including the EFO farmers’ request for their experiences to be brought into the academic and political debate by their ‘research contribution’, the meaning of ‘being successful’ as defined by the farmers, affirms the possibility of developing an agri-culture that is culturally and environmentally responsive. A re-invention of African peasantry arising from the visioning of farmers themselves, affirms the role of rural movements as progressive social change. A role deemed critical by Moyo and Yeros (2005) and pleaded for by Davison Chikazunga (2012)¹.

9.3 Relevance of methodology

In drawing conclusions from a grounded theory, one must remember that the purpose of grounded theory is to inform empirical research through theory and inform theory through empirical research. Essentially, the theoretical product of this constructivist GT is different from a reductionist product in that it is an interpretation. Its interest lies in describing and selecting key representations of patterns for everything that is changing, moving or occurring over time in the research setting. The process that GT follows is not just an exploratory mechanism, but, an attention to detail that moves beyond the

¹ Refers to the quote by Davison Chikazunga on page 181.

empirical field through interpretation and exploring what is observed through existing knowledge and through the researcher's theoretical sensitivity in interpreting emic issues.

Operationalizing GT is the subject of much debate. For some critics, a GT must extend beyond the narrow context of the research through further conceptual development and operationalization typical of the general method of theory building research in applied disciplines (Egan 2002, p299). For others, the theory is the product of theoretical saturation in a specific context (Egan 2002, p299). If the theory is not measured by its ability to predict, then how is the theory verified and for whom is it useful?

The consensus is that GT should be evaluated by four criteria; relevance, fit, workability, and modifiability (Glaser & Strauss 1967). A relevant study is one that deals with the concerns of participants. It is relevant when it grabs the attention of others as well as proves itself to be of academic interest. The fit is a judgement on how closely concepts fit with the incidents they are representing, and reflects the skill of the researcher in the constant comparison of incidents to concepts. A GT works when it is able to explain how the problem is being solved. Finally, in order to be modifiable, the theory should be able to be altered when relevant data is compared to new or existing data. Within this understanding, GT is never an objective confirmation or rejection of hypothesis, but reflects more or less relevance, fit, workability and modifiability.

For all engaged research however, there is the analytical question (what is being analysed) as well as the practical question (how is this knowledge to be used) to consider. This research uses constructivism to distance itself from the classification of the farming system and the more political constructs of gender, class, the type of economic activity or even technology itself as a transformation tool. Instead, the use of the constructivist approach attempts to portray what the reality is through the subjective view of an interpreter whose biases have been systematically dealt with through a reflexive handling of information.

In their day to day lives, the farmers are deeply involved in farming decisions and realities: the researcher cannot really be them or fully 'know' them as an outsider, but researcher participation in local problem solving may generate a greater consciousness of contextual uncertainties and solutions. The researcher is deeply involved in abstract thinking: the farmers cannot really be the researcher. But the farmer can contribute to

theory through the reflective process that articulates; if I can do this, maybe someone else can do this too. This is the strength of Action Research for facing systemic change: it allows for contributions along a spectrum from all participants according to their levels of participation and consciousness of abstract thinking. The farmers determined a ‘thinking/observing’ role for the researcher (myself) and then continued to think deeply themselves, while re-shaping communal attitudes and behaviour and contributing willingly to the theory building process through individual reflections on their philosophy, practice and desired futures. These results of research then do not present the ‘right’ answer to supporting homestead farming. They present the way in which the participants in the SANPAD Project engaged with the complexity of the often conflicting values and goals that the opportunity for commercialising *amadumbe* production created. It contributes to the discussion on how the process of continual learning can leverage technological advances, and embed them in the convergent values of actors (both the organisation and the system) for reliability rather than predictable outcomes. Reliability in responding to uncertainty is perceived by this research as more useful than predictability, in the real world, because it provides a means for dealing with unanticipated results.

9.4 Recommendations and conclusion

In this research, GT was used as a method to interpret the dynamics within a particular context and express these as a core concept or variable around which characteristics define and relate to one another. To operationalize the theory of systemic integrity in a manner that continues the ethical nature of participatory research, and to confirm its value or not, the following actions are envisioned. The systemic integrity theory, grounded in context, but abstract in nature, can be used as a platform to share learning reflexively with the multiple disciplines that its complexity draws upon. To this end, briefs for political decision makers, scientific journal publication aimed at extension practice, and participatory Action Research praxis and theory will be a priority of further accountability to the farmers’ desire that their story contribute to the models for successful rural agricultural development.

This research agrees with Setfano *et al* (2009), who identified that literacy constraints require people to wait until information comes and ‘getting knowledge is a slow process’ and ‘we do not know what we don’t know’ suggests that access to information as well as the availability of appropriate and accurate information is an area where

researchers, extension officers, schools, markets and the private sector can focus their efforts for improving information flows (Stefano *et al* 2009, p51).

Policy support is needed to provide incentives for private enterprise and for local economic development in the form of farmer's markets, protection of specialized agricultural districts, alternative food stores (local firms and family owned), and consumer cooperatives and forums that build local solidarity and identity, and promote linking consumers to the origins, farmers and locations of food production wherever possible.

At least for the duration of the SANPAD Project, the 'face' of Woolworths was an employee whose role included attending end of year celebrations and award ceremonies. From the farmers view point, this greatly enhanced Woolworth's as a tangible entity. This role could be expanded for much more two way interaction. Markets that support a commitment to local (as opposed to or least in proportional balance with international agri-business) and that facilitate branding of local produce such as the empowerment labels mentioned by Darroch and Mushayanyama (2009, p104) contribute to improving the information flow between consumers and farmers. This is an opportunity for building support for local foods and regional food specialties.

The research and development support observed in this project contributes to nation building and needs to be not only acknowledged but valued by teaching and research institutions such as the UKZN. The benefits for institutions of supporting programmes of continuous community outreach:

- encourage legitimacy,
- allow for long term social and scientific accountability, and
- stimulate new research and mentor young professionals

Monitoring offers the possibility of support for existing processes and continuous information flows that shape and re-shape with the ebbs and flows of population and resource availability for small-scale agriculture.

9.4.1 Recommendations for decision makers in rural development

As an interpretation of the nature of the process by which the farmers of the EFO adapted their social agronomy towards production beyond subsistence, we are able to make recommendations to decision makers about rural development priorities. In understanding how the EFO experience contributes to economic development within

rural KwaZulu-Natal, we need to reframe the mental model that we have of 'commercial' agriculture. The recommendations proposed focus on supporting preferred livelihoods as the end product of the decision making of agrarian policy and delivery processes of agricultural services in integrating Agri-Culture as a 'way of life', within commercially significant agrifood-chains.

This research recommends that scientists; agricultural practitioners, such as extension officers; farmers and markets approach their relationship in rural development as Discourse with a capital 'D'; a 'being together in the world'. It recommends that priority is given to identifying shifts in attitudes and behaviours that impact networking and organising and recommends using these as leverage points for co-created norms and behaviours in linking producers to markets. In the literature, we read about strategies, which attempt to 'solve' development issues. Some useful strategies have included peer training of emerging farmers by established commercial farmers, creating local market networks as well as improved and improving access to regional and rural markets. Leverage points are not intuitive (Meadows 1999, p2), and there are no easy ways to find them. They arise from the goals, power structures, rules and cultures that define the system. This means that relationship building through legitimising norms and behaviours in a group of stakeholders² producing a new mind-set, will only reveal the shifts in power that act as catalysts for change. In order to maximise leverage points for transformation, we must look at the processes which generate shifts in mind set and power relationships that allow these strategies to emerge as innovative and context sensitive solutions.

The research experience also recommends that in order to tap into and nurture social cohesion, the natural resistance between internal and external cultures requires legitimate leadership. Leadership should be identified through locally valid formalities, resulting in roles and responsibilities that are perceived as legitimate by both internal and external stakeholders. The way in which development progresses, requires that a shared vision is negotiated as a partnership. Our experience affirms that command of the agenda is positioned, first, with those who must live with the consequences of it. The principle for realising this future must be to build accountability and credibility into the interactions between practitioners, producers and markets.

² What is meant here is the generic meaning of stakeholders: people within and also external to the context who have a vested interest in the outcome of decisions, those who own the resources and those who wish access to them.

Finally, we affirm that sustainability is encouraged when stakeholders seek an interdependent relationship; through adding to the system, rather than replacing it; and through innovating ‘with’ traditional agriculture that finds new ways of combining resources and capabilities in relationships that are already available, or easily accessible, to the farmers. The research proposes that deliberate interdependence between producers and markets creates the incentive for development that is self-determining, sustainable and derives economic benefits from agricultural activity.

If rural areas continue as the reserves for the world’s poor, then public support for preserving the ‘homestead farmer’ through the improvement in the technical levels of production, access to resources and services and the deliberate development of a modern peasantry which innovatively focuses on the ebb and flow of demographics in rural areas rather than scale of farming enterprise can only be of benefit to society. The challenge is to enable the choice of excess production for economic gain within the ebbs and flows of migration and generational life-cycles.

The communication of this research was awkward, posing serious conflict of interest and confusion about how and where to use literature and how to present the data in a meaningful way for agricultural science. This was resolved by setting the research within the context of agrarian change. Despite this, the research makes a significant contribution to Qualitative Methodology in the area of action research (Appendix 4-1a).

9.4.2 Recommendations for further research

This research was not able to probe sufficiently the farmers’ world view or changing views on accumulating material capital for prosperity. There is a fundamental tension between the concepts of wealth and prosperity understood by farmers in Umbumbulu, the restrictions to growth inherent in communal tenure systems and the dominant economic perspective of wealth and prosperity. Further action research with farmers that leads to a deeper understanding of how to invest in social capacity and material resources will allow for a local solution for the accumulation of social and material capital to stabilise the productive capacity of communal or individually utilised spaces.

The research also looked only at an emic perspective. Research that includes the external role players in analysis in terms of the economics and shifting of minds sets from an external perspective would also be very useful to think differently about the way local economic development can stimulate increased productivity.

Continued monitoring, evaluation and action learning, as part of the continuous re-inventing of commercial activity for EFO farmers is called for; especially within the threats and opportunities implied by the current political debate arguing over the power of traditional authorities and challenging the negative influences of the Black Authorities Act of 1951 which remain inherent in the legislations of The Traditional Leadership and Governance Framework Act 41 of 2003), the Communal Land Rights Act 11 of 2004 and the traditional Courts Bill 15-2008

The erosion of agricultural land on the periphery of the Ngonyoma trust land areas of Umbumbulu requires research to determine the impact this has on agriculture and the potential conflicts between municipal roles and the agricultural use of land.

9.5 Summary

The theory of systemic integrity allows us to see how the scientist's priority of maximum productivity, the markets view of manipulating produce to meet consumer demand and the farmers' concepts of wealth and purpose in working the land are brought together in a situated reality. It defines how the stakeholders developed a shared set of values and norms acknowledging a shared legitimacy between farming as a way of life and farming as a commercial activity. When the farmers sought a social perspective on their research agenda, their intention was to show how their experience could help to re-define commercialisation as an inherent characteristic of traditional agriculture as a way of life and by doing so, influence models for development in contemporary rural societies.

This research began with the declared assumption that South Africa's political goal is economically viable and socially cohesive rural economies. This research identified that legitimising leadership, authentic visioning and nurturing social cohesion would support this transformation. This capability for change creates the space for stimulating agricultural activity and unlocking the productive potential within the context of co-operation in communal agricultural landscapes. The research contributes to the search for an African solution to economic development in a post-colonial agronomy, through identifying the contribution of indigenous wisdom to innovative economic activity. Indigenous wisdom acts to preserve stable roots and a strong sense of 'self' and belonging within this process. The participatory nature of a farmer-researcher agenda for supporting knowledge production required to transform traditional agriculture

towards market-oriented production taught valuable lessons for sustainability and agriculture within the context of development. In particular, project participants have become more able to leave their narrow discipline traditions (or familiar farming strategies) and co-create knowledge from multiple perspectives and see how people shape, and are shaped by, agriculture as a 'way of life'.

As a theory, 'systemic integrity' raises consciousness for defining the gap between identifying the foundations for transformation and incentives for economic rural development. In particular, the theory of systemic integrity offers a model for extension managers to use in evolving context specific management practices and principles within communally owned agricultural landscapes. Even more useful is that it contributes to the epistemology of methodological options for researchers as it provides an example of how to produce theory from the action learning and action research process.

At an applied level, it contributes to thinking about communal rural spaces as a way of nurturing the heritage of indigenous materials, knowledge, and social practice underlying traditional attitudes inherent in the African worldview. The relationship between the farmer and research institution through the researcher as catalyst suggests a model for institutional commitment for knowledge creation that is socially sustainable, productive for research objectives and relevant to societal concerns. In line with the ethics of knowledge creation and intellectual ownership, the researcher recommends that this theory be taken back to the farmers as a catalyst for extended knowledge building through further reflection, technical and social learning and experiences.

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Appendix 1-1

Digitised summary of questions that the farmers think could be addressed through the SANPAD Participatory Project (see Figure 1, on last page (v) of this appendix for a raw data example

EZIGENI FARMER AGRICULTURAL RESEARCH CONCENRS/QUESTIONS

(Farmers main crops are maize, potatoes [sweet & indigenous], beans, amadumbe and groundnuts)

NB: 1 Cutworm ; 2 Mole ; 3 Millipede ; 4 Stalk borer

NB: wild berries are indigenous weeds; birds are also wild indigenous birds

Soil	Plant	Animal	Other
		1.2.3.4.	Stray cattle, Planting equipment
Water for irrigation		1.2.3.4. frogs	
Soil erosion removing crops. Difficulty in sourcing manures	Wilted harvest		Stray cattle, chickens
Drought Water for irrigation Soil check		1.2; 3.4	Financial assistance For children in schools
			Stray cattle, Planting equipment, fencing material, planting dates
		1.2.3.4	
		1. 2; 3 Warthogs	There is no fencing, stray cattle Need tractor
Soil seems to be infertile yields are too small		Weevils cause seed damage	Fencing material
		1.2.3.4.big ants	Stray cattle
		2.3.4. wild berries	Stray cattle
		1.2.3.	Water, fencing, roads
Drought		1.Cutworm 2. Mole	
Unavailability of water/ drought		Cutworm Mole, 3.Millepede	Sourcing markets after produce harvest

Soil	Plant	Animal	Other
	Wilted harvest	1 & 2, Locusts, monkeys	Unfenced fields
Soil seems to be infertile	All sorts of crops just don't grow well		Unfenced fields, neighbours stray cattle
Tillage leads to more weeds, too labourous for 1 person, cannot afford helpers	Amadumbe= 3 Cabbage & other veggies=drought	1.2.	Pesticide I'm using seems to be slow & unable to work
Fertilizer	Beans=grey patches	Isonani? Wild animals	Sourcing markets Fencing, stray cattle Tractor
		1.2.3 Wild animals and isonani?	Fencing Markets for their produce The fertilizer they are sponsored with is too far from them
Soil seems to be infertile		2	
Soil seems to be infertile		1.2.	Unfenced fields, neighbours stray cattle Planting equipment
		1.2.3.	Water, fencing, roads
Water for irrigation		1.2.3.4. frogs	
		1.2.4.	
		1.2.3.4. birds	
		1.2.3.4.big ants, birds	
		1.2.3.4. wild berries	
Water for irrigation		1.2.3.4. frogs	
		1.2.3.4.big ants	Stray cattle
		1.2.3.4.big ants, frogs, birds	
Water for irrigation		1.2.3.4. frogs	

Soil	Plant	Animal	Other
Soil seems to be infertile yields are too small		1.2.3. wild berries	
		1.2.3.4. birds	General pests
Water for irrigation		1.2.3.4. frogs	
		1.2. livestock	Fencing
			Harvest always eaten by warthogs
		1.2.3.4. weed/incombothi	Stray cattle
Need fertilizers Water for irrigation		1. Black insects on beans Isonani?	Financial assistance for education Need market
		1.2.3.4.	
		1.2.	
Soil seems to be infertile			I always plant but don't get any crop
		1.2.3.4.big ants	Stray cattle
Water for irrigation	Wants to increase production (Spinach & fruits)		Sourcing markets after production
Could someone check soil fertility before they can plant Water for irrigation Which fertilizer is the most appropriate (cows, chicken, etc)	How many times can you plant the same crop in one area?	Who to contact for pest infestation	Extension officer routine How can one protect plant from birds
Fertility of land (their spinach is bitter) Need for lime	Wishes to plant Banana but cannot (lack of knowledge)	1.2.3.4 Sonani	Fencing Livestock
		1.2.3.4. wild berries	Stray cattle

Soil	Plant	Animal	Other
Hard soil, poor infiltration, and infertile		1.2.	
Soil seems to be infertile yields are too small			Fencing material
		1.2. small red soil organism	Stray cattle
		Pests in general	
Winter water for irrigation, manures	Topdresser	1.2. Warthogs	Planting equipment
Winter water for irrigation	Topdresser	1.2. Warthogs	
Soil seems to be infertile	All sorts of crops just don't grow well	3, 4. stalk borer	
Poor soil, drought and manures		1.2.3.	
Soil seems to be infertile yields are too small		1.2. small red soil organism	Stray cattle
Drought		1.2.3.4.	
		1.2.3.4.	
Drought, manures are delivered too far away from us		1.2.	Stray cattle, Planting equipment, fencing material,
	Beans=1, maize=4, amadumbe= frogs	Frogs	
	Patatoes=cutworm	1.2. small red soil organism	Stray cattle
Lime, Manures, water	Seed (potato)		Stray cattle, Planting equipment
Lime, Manures, water			Stray cattle, Planting equipment, vehicle to transport harvest and no fencing

Soil	Plant	Animal	Other
Lime, Manures, water	Seed (green beans)		Stray cattle, Planting equipment, vehicle to transport harvest and no fencing
Want to plant drought resistant plant		Isonani? Wild animals 1.2.	Financial assistance The fertilizer is too far from them

B.P. NQCONGO 11/11/2005
ILUNGA Laba Limi Be FFO.

1. BANGAWAZI gini ukuthi basholele umhlabathi ngaphambi kokuba silime?

2. KUPANELE SHINKE BANI UMA SITHOLA IDRO ESITHIWE SIKHASEN IRITSHALO?

3. Uma amanzi engetho eduzane lukhona gini usizo esingathola ku Holumeni ukuzwe asibondezele wona?

4. Lwona muphi umanyolo olungile ukuthatha. Cumquba, wezinokomo, owezinkuni, umanyolo, i-compost?

5. Abaluteki bezolimo kupanele sibalwotele kangaki endaweni esilima kuyo?

6. Ungaphinda kangaki iritshalo esifanayo endaweni eyodwa?

7. Ungazivikele kangani iritshalo esinyonisi, umswenya, isihlaka, imukuzane,
Je nga Lezi

Figure 1. Example of individual farmers questions and issues, submitted for the research project

Appendix 1-2

CONSTITUTION OF EZEMVELO FARMERS ORGANISATION

Name of organisation: Ezemvelo Farmers Organisation (EFO)

Established: 04 February 2001

Physical address: Ogagwini location at Embo Traditional Authority

Postal address: P.O. Box 35198, Umbumbulu 4105, KZN, SOUTH AFRICA

A. Objectives:

1. To co-operate with the South African Department of Agriculture, at all levels, and any other institution or person in sustainable, productive, stable and equitable agriculture.
2. To practise organic farming as understood to be: A production system that sustains agricultural production by avoiding or largely excluding synthetic fertilisers and pesticides. Whenever possible, external resources, are replaced by internal (solar or wind energy, biological disease and pest control, biologically fixed nitrogen and other nutrients released from organic matter or soil reserves) resources found on or near the farm.
3. To commercialise our produce in a manner that improves our economic development without compromising our cultural integrity.

B. The General Membership

1. Opened to all adult and youth residents of Umbumbulu who accept to abide by the objectives of EFO.
2. Shall be obtained by applying in writing (Annex 1) through an Internal Approval Committee (see D below) and R10 membership fee is payable at the time of application. The application fee is refundable on non-admission, but not refundable on withdrawal after admission has been confirmed.
3. An ordinary member shall vote once.
4. Membership shall be renewed every year.

C. The Executive Committee and its duties

1. Shall be democratically elected once a year by the general membership from among them.
2. Shall convene general meetings once a month. The Executive committee will also convene executive committee, internal committee and other meetings that may be necessary before the general meeting.
3. The **Chairman** of the executive committee shall convene and chair all meetings. S/he will vote twice in a case of even votes.
4. The **Deputy-Chairman** shall act as a Chairman in the absence of Chairman and on request from the Chairman, where necessary.
5. The **Secretary** shall record the minutes of all meetings and write letters on behalf of the EFO.
6. The **Deputy-Secretary** shall act as the Secretary in the absence of the Secretary and on request from the Chairman, where necessary.
7. The **Treasurer** shall keep a record of and report on financial statements. The Chairman shall act as a Treasurer in the absence of the Treasurer, except where the Treasurer's signature is compulsory. The EFO bank account shall be opened in the name of the organisation (EFO) and the

Chairman, the Secretary and the Treasurer shall, jointly or severally have signing powers in all transactions on the bank account.

8. An **Additional member** of the executive committee shall perform special duties as agreed upon by the executive committee or by the Chairman, in consultation with the committee.
9. At least four members of the Executive committee shall be present when executive decisions are taken.
10. Unless an apology/apologies has/have been duly received, any member of the executive who is absent from two consecutive meetings shall lose their executive position.
11. Two-thirds of the voting members shall constitute a majority in any decision taken by EFO.
12. The executive committee is obliged to uphold the EFO constitution and to act as a conduit between EFO and traditional leaders as well as other institutions.
13. The headman (*induna*) of Ogagwini location shall be an *ex-officio* member of the executive committee and act as a conciliator.

D. The Internal Approval Committee and its duties

1. Shall consist of all the members of the Executive committee, all the internal inspectors approved by the general membership and trained appropriately at a recognised institution, the quality control officer, and a representative from Department of Agriculture (*ex-officio*).
2. Shall review membership applications and decide on the sanction process in case of constitutional infringements.
3. The internal inspectors shall act as quality control officers in the absence of the quality control officer.
4. The Internal Approval Committee shall record infringements.
5. A member who does not renew their membership shall automatically lose it.
6. A member who does not conform to the organic farming rules shall be dealt with in accordance with the stipulation of the organic farming certifying body, which may include expulsion.

E. Constitutional amendment

1. The constitution shall be amended in accordance with the requirements of the majority (two-thirds) of voting EFO members.

Annexe 1: Members of Ezemvelo Farmers Organisation

1a. The Executive Committee: year 2006

Name	I.D. numbers of members with signing powers	Specimen signatures of members with signing powers
Mr D. Miya (Chairman)		*
Ms T. Mkhize (Deputy Chairman)		*
Mrs B.B Mkhize (Secretary)		*
Ms B. Mkhize (Deputy Secretary)		
Mr N. Maphumulo (Treasurer)		
Mr T. Mabhida (Additional member)		
Prof. A.T. Modi (Mentor)		

1b. Ordinary members

There are members of the EFO from seven small neighbourhoods of the Umbumbulu district, KwaZulu-Natal. Approximately 70% of the members are women. An updated complete EFO membership list may be attached to the constitution on request and by agreement of the EFO executive committee.

Ethical Approval from the UKZN Research Office



RESEARCH OFFICE (GOVAN MBEKI CENTRE)
WESTVILLE CAMPUS
TELEPHONE NO.: 031 – 2603587
EMAIL : ximbap@ukzn.ac.za

26 SEPTEMBER 2008

MRS. KF CAISTER (812817641)
AGRICULTURE AND AGRIBUSINESS

Dear Mrs. Caister

ETHICAL CLEARANCE APPROVAL NUMBER: HSS/0428/08D

I wish to confirm that ethical clearance has been approved for the following project:

"Exploring the relationship between decision making, market pressures and participatory research in the transformation of homestead agriculture to commercial agriculture: A grounded theory"

PLEASE NOTE: Research data should be securely stored in the school/department for a period of 5 years

Yours faithfully

A handwritten signature in black ink that reads "Phimba".

MS. PHUMELELE XIMBA

cc. Supervisor (Prof. JM Green)
cc. Prof. A Modi
cc. Ms. M Francis

Appendix 2-1

Research projects and contributions to Farmer's knowledge building agenda

Table 1. Individual research projects arising from the participatory research agenda
(Researcher report backs, 5 June 2008, CEAD meeting room, UKZN)

Researchers/participants	Project Data and Learning
Charity Maphumulo	Action Learning crop trials - intercropping
Rorisang Mare	Amadumbe Starch cropping trials –farmer field trials
Karen Caister	Grounded theory development of commercialisation process
Nomusa Buthelezi(Charity, Ncebo, Karen)	Indigenous Knowledge - Soil survey – focus group of lower eZigeni farmers
Modi, Karen, Mfundo Ndlovu, Charity	Participatory Research Agenda Workshop with farmers
Charity & Karen- 2006-2008	Farm Visits - interviews, observations, RRA
Charity/Karen/Modi 2007	Intercropping questionnaire
Kitso Maragelo, Charity, Karen, 2007	Survey of Indigenous Farming Knowledge (Focus group data)
Mfundo, Charity, Karen 2007	Role of Community Gardens (RRA)
EFO Farmers	Field (micro environment) experiments with planting dates- extending harvest season

Table 2. Researcher -Farmer interactions providing data for this study

Category of Interaction	Type of interaction	Instrument for data collection	Data arising from interaction
Monthly Meetings (1 st Monday of every month)	Group decision making and reporting	Participant observation Minutes	Field notes Records of decisions (Charity, Karen, Modi)
Farm Visits	Household interviews (2006)	Semi structured interviews with family groups of household systems	Flip chart summaries of household information Field notes (Karen with Charity)
Data Collection questionnaires	Field Trial Visits (2006-2009)	Probing conversations	Field notes (Charity with Karen)
	Community Garden interviews (2007)	Semi structured group interviews Probing conversations	Time lines Field notes: *
	Farming System Interviews (2008)	Questionnaire	Field notes:**
	Soil Names and Indigenous knowledge group interview (2009)	Questionnaire Probing conversations	Qualitative Data Field Notes***
	Farming Technology Questionnaires (2009)	Questionnaire Probing conversations	Qualitative data Field Notes (Charity & Karen)
EFO member workshops	Marketing Workshop (18 April 2008)	Breakaway group discussions Group Feed back	Flip chart summaries (translated later into English) (Karen and Charity)
	Reflection workshop (27 Nov 2008)	Breakaway group discussions Group Feed back	Flip chart summaries of breakaway group discussions Field note summaries of consensus discussion (Karen & Charity)

* Researcher assisted with data collection for masters research (Ndlovu, M (2007). **Towards an understanding of the relationships between homestead farming and community gardens at the rural areas of Umbumbulu, KwaZulu-Natal.** This provided access to questionnaires on Household information about interviewee's' farming system and data for triangulation.

** Researcher assisted with data collection for masters research (Maragelo, K P (2008). **Traditional agriculture and its meaning in the lives of a farming community: the case of Embo.** This provided access to questionnaires on Household information about interviewee's' farming system and data for triangulation

*** Researcher assisted with the data collection for masters research (Buthelezi, N N (2010). **The use of scientific and indigenous knowledge in agricultural land evaluation and soil fertility studies of Ezigeni and Ogagwini villages in KwaZulu-Natal, South Africa.** This provided access to questionnaires on Household information about interviewee's' farming system and data for triangulation

Appendix 4-1***Early (pre-examination) Reflection on learning process***

In understanding GT as theory and method, I first read about Grounded Theory as an opportunity to develop theory as an emergent process. However, my first introduction was through Glasser and Strauss (1999) and Strauss and Corbin who both presented GT as a positivist approach with an emphasis on prescriptive systemising of data collection, analysis and theoretical saturation. Through assignments and readings designed to build capacity for positivist scientists to shift paradigms into a qualitative research approach I was introduced to GT as a more flexible approach for researching social justice by Kathy Charmaz (Charmaz 2005, pp 503-533). After defending my research proposal, I was challenged by an anthropologist to pursue GT but to ensure that I dealt with the epistemological challenges of my proposal which had been identified as a loosely connected learning experience. When Kathy Charmaz' book, *Constructing Grounded Theory* came out in 2006, I had a coherent resource for identify constructivist GT as a normative research practice for dealing with the epistemological challenges of learning rather than the apparent rigidity of thematic saturation through theoretical sampling. Even so, understanding the process in 'academic' terms while carrying it out was very confusing to myself and colleagues. We struggled with the focus that was not on factual information and linear logic. For most of the data collection period, I concentrated on 'understanding' and making sense of what I observed.

I had decided that if my work was eventually rejected on procedure, I would at least have learned at a personal level. I avoided any situation where I might be challenged on my methodology, and in 2009 I presented the process I had been following to an international audience of qualitative researchers whose focus was on participatory action research and learning. I was expecting to receive clear feedback on gaps in my methodology while I still had time to 'correct any mistakes'. Instead, listeners were puzzled and queried why I felt like I needed to defend my approach and process in the first place. This release from a 'procedural' straight jacket enabled me to realize that the sense making I had been focussing on was in fact what GT methodologists talk about. I was using the jargon of GT, but had to 'do' it and reflect on it, before I was able to understand what I had done and communicate this to others. I was fortunate in that my research supervisors were wise and trusted me to weave a pathway through the confusion. When I finally reflected on the learning concept of Theory U, the understanding of theory development fell neatly into a framework that showed a systematic deepening of understanding that resembled the validity of theoretical saturation for theory development.

“I see it and it matters: grounded theory embedded in participatory action research.

Karen Caister, Mark Dent, Maryanne Green

Abstract

This paper shares part of a researcher’s journey that used Grounded Theory (GT) as the theoretical framework and the method for constructing theory embedded in an Action Research project. Theory building was used to capture the product of systems thinking in linking society, technology, and economics in co-creating a new culture or way of interacting between individuals, community-level organisation and intergroup relations with researchers and a market. Exploring the process highlights how collaborative learning within Action Research unlocked the potential for contributing to theory through various levels of reflection, consciousness, and participation. The paper has two objectives: it describes how GT was used as a purposeful companion for finding the theory embedded in Action Research; and it identifies learning within the participatory experience that contributes to de-colonizing attitudes and processes within Action Research and Learning.

Introduction

In the Action Research and Learning literature, there continues to be an absence of writing about the process of theory building (Dick et al. 2009; Dick 2004). From my field experience with Participatory Action Research, I can empathise with the difficulty in explaining in any replicable way, how the process of theory development occurred. How does one describe insight and the intuitive mental pathways that one really uses? The nature of engaging with a particular community is subjective and focuses on beneficial processes whereas the abstraction of concepts and relationships from the experience require learning and reflection drawn from a wide variety of knowledge fields in which you do not have mastery. Genat (2009) describes the process of theory building using shared experience to co-create a conceptual framework within a specific local context. As recent contributions to transferable theory Raymer (2009) and Poonamallee (2009), describe the

development of theory as a second phase of the learning process. Raymer (2009) used a theory-mapping tool to revisit her project data. Poonamallee (2009) uses a philosophical framework to crystallize theoretical learning from her research. These examples illustrate how data collection and theory building required two methodologies. This makes writing about the process very complicated. The abstraction required for straddling multiple methodologies loses the detail in what (Dick et al.2009, p.117) would recognise as how it is done. In addition, dealing only with the theory development raises frustrations about how theory relates to participation (Dick et al. 2009).

In this paper, a participatory experience is used to tell the story of GT development embedded in participatory activities that also occurred in two phases. The observe and participate phase focussed on the emerging design and creation of a data set during an extended engagement with stakeholders. In the constructive phase, space within which to theorize required distance from the emotions of participation as well as access to face-to-face discussion within an academic discourse. The paper tells the narrative of the research process as a whole, and then focuses on the use of Grounded Theory as the tap root for building theory as a purposeful companion to Action Research. Discussion supports GT as a valid method for trans-disciplinary theory building in Action Research and highlights learning within the participatory experience. The process supports the strengths of Action Research in facing system challenges as well as identifying attitudes and processes that inform the de-colonization priority of creating institutional structures with a social and moral identity.

Background: a narrative of participation

Traditional Zulu farming in KwaZulu-Natal, South Africa has like all traditional agriculture, been shaped by social, technical and ecological responses for ensuring food security and social cohesion within the socio-agronomic landscape. Knowledge has been communicated orally and the practice modelled from one generation to the next. Since the historical arrival of foreigners in South Africa, economic and political power struggles have put pressure on traditional ways of living. A key shift over decades has been a move from the integrated social, political and economic focus of an agrarian focused economy to the

multiple livelihood strategies designed to survive in a cash-based society. The loss of land and traditional strategies such as keeping livestock, the frustration of disrupted weather patterns, the importance of education for modern living, and the lure for young people for higher more reliable incomes threatens traditional farming as a way of life.

In 2002, a group of farmers using largely traditional farming practices in deep rural KwaZulu-Natal, South Africa organised themselves into a community structure which they called the Ezemvelo Farmers Organisation. Through their constitution, members declared that they wished to find a solution, “to commercialise our produce in a manner that improves our economic development without compromising our cultural integrity” (Objective A. 3., Constitution of the EFO). Forming a partnership with local academics (University of KwaZulu-Natal) and a South African national food retailer (Woolworths), these farmers began a journey that would take them from homestead food production towards market-oriented production.

Their aim was to encourage farming as a continued way of life: their goal, to utilize the opportunity of a marketing niche for organically certified¹ traditional vegetables. The organisation’s strategy was shaped by the certification of their traditional farming technology and practice and the mediating role of a catalyst/facilitator with which they had developed a trusting relationship. The trusting relationship between Modi², and the EFO farmers developed as they first explored the connections and similarities between traditional and organic farming practice, and began experimenting in their fields with local cultivars and cropping patterns that would meet market requirements.

The growing consciousness of farmers on the increased demands on local resources for maintaining production stimulated an interest in becoming part of the knowledge finding solution themselves.

¹ The justification for imposing an exclusive marketing strategy is that organically certified produce commands a higher retail price. In an ethical supply chain, this benefits the producer through higher cash returns for farming effort.

² The use of the name ‘Modi’ here is deliberate. This is the name that the farmers used to refer to Prof. AT Modi, the crop scientist who acted as catalyst, gatekeeper and facilitator for the commercialisation process and research projects.

In 2006, SANPAD came on board as the funding partner for a farmer-researcher partnership. This project is referred to in this article as the SANPAD Project. The project was envisioned as a participatory action research initiative. Adopting the ‘participatory’ paradigm required that researchers begin to grapple with a new language in communicating what was being learned. The democratic nature of participation for farmers and researchers was instinctive because of our worldviews, but we had to learn to recognise this as part of the research process. We were very busy engaging with problem solving, running on farm field experiments with farmers, some of which were also repeated in controlled environments, teaching others, being taught ourselves, joining forces to share our learning with others. All these we understood as activities that supported the translation of market standards and demands into the re-organisation of locally available resources.

The activities that required shifts in mind-set seemed logical or appropriate at the time, but we had to learn the practice and language of reflection that spoke of the learning as co-created knowledge. In order to produce ‘research’ results, we worried about, set into motion, and executed parallel investigations that continued to address research outputs for our disciplines: crop science, soil science, rural resource management, traditional agriculture. In response to farmer-led research, one community-level experiment was a participatory soil fertility project based on multi crop field trial sites designed by researchers and managed by farmers. Working together in these field plots, created a valuable social and technical learning space. Researchers learned new perspectives on how to interpret experiences and what was important to farmers. Farmers gained insight beyond locally entrenched beliefs. For instance, typical plant spacing and intercropping patterns were challenged with why a particular combination of space and plant variety would support more intensive production. They could see the effects in their experiential learning trials. This engagement resulted in understanding the ‘whys’ of re-organising existing homestead resources and how experiential learning had co-created knowledge for the intensive farming strategies required for production beyond subsistence.

In an attempt to document being ‘participatory’, we designed a process to elicit a farmer identified research agenda. Farmers reflected on and contributed written problems arising

from the increased monoculture production of amadumbe. These questions were pondered over by researchers, classified into discipline-based research areas and taken back to the farmers for a workshop for clarification, confirmation and prioritisation in terms of how to respond, who would respond, and which issues were priority. There was a strong impression of legitimised involvement that this wonderful workshop released in terms of what needed to be done and how we could participate with the farmers. As roles settled into the systematic rhythms of seasonal production, harvesting, dialoguing with stakeholders and dealing with data gathering, one research role remained elusive – how do we communicate what we were learning together through the multidisciplinary nature of the activities. This had been allocated as my responsibility. As participant observer, my primary research role in the project became to document and record the trans-disciplinary nature of our ‘Discourse³’ (Gee, 1990). At first I thought, how does one measure our ability to meet the explicitly political, socially engaged and democratic processes fundamental to Action Research (note the positivist instinct to measure!). As I began to read about qualitative methodology and develop basic skills in field note writing, memo writing and reflection I came across GT (Glasser and Strauss 1999) for research design, but felt it was too mechanical and might exclude my own intent to be ethnographic. However, Kathy Charmaz’s approach for constructivist GT (Charmaz, 2006) seemed a plausible way to link the activities of action research and learning with a PhD process that should be contributing to theory building. I spent three years in the project (2006-2009) engaged in multiple levels of action, reflection, identifying learning and planning. I recorded regularly, wrote reticently, but enjoyed immensely drawing diagrams and constructs of what I was learning. These constructs, I shared enthusiastically with anyone who would listen. I learned that this was a very productive way to engage with my data from other points of view.

³ Discourse as described by Gee (1990) is not merely stretches of language, but the way in which people are *together in the world*. He proposed that since social groups organize their lives around concepts, purposes, values, beliefs, ideals, theories, and notions of reality, the capacity for orderly thought or procedure available to them would be the way in which human life was given meaning. An assumption of this (research) analysis is that the crux of sustainability is in fact about ‘being together in the world’ both now and in the future. And that these options for action may be different from those we have long known and trusted within institutional interests and models.

It took another two years (2010-to date) of reflection, crystallization, and learning the language I needed to communicate the resultant theory in an academic environment. This theoretical work has not yet been submitted yet for publication. In addition, publishing for policy and service delivery impact will be a further phase in accountability to the farmers' request that their commercialising experience inform decision makers in understanding how traditional agriculture could contribute to building sustainable rural economies.

Blending GT with Action Research

Typically, in agricultural science, we formulate a research hypothesis on theoretical grounds and test it through research activity. In participatory learning, knowledge and meaning is constructed through facilitated experiences. Working with the farmers, researchers were not only committed to being facilitators, but also to being learners with farmers through shared experiences. Participatory decision making in the field with farmers in Umbumbulu had already been a useful strategy for facilitating management independence and addressing technical and organisational problems in the transformation of homestead farming to small-scale commercial agriculture (Caister, 2006). It was in fact the process by which this study emerged (Caister 2010, p.6).

Being participatory meant that stakeholders had a voice in the process. Some of these voices come from within the community both at an individual and collective level; some of these voices are external. The agenda then that informed the participation was both participatory and catalysed by specific personalities. This agenda and its subsequent crop trials for improved soil, adaptive production technology and improved *amadumbe* cultivars, provided a focus for interaction around which decisions are made and the tolerance for and inclusion offered to Modi's students (such as myself) to enter, observe, explore and work alongside the community in developing a conceptual model for commercialized social agronomy.

GT is particularly suitable for research that allows for thinking and creating knowledge while following emergent practice through open-ended action (Sólrún 2001; Charmaz 2005). However, a challenge for using GT with participatory research is that in its

abstraction from the data, GT is “not concerned with understanding the world of the research participants as they construct it” (Glaser 2002, p 3). The constructivist view is that while reality may be independent of human thought, meaning or knowledge is always a human construction (Crotty, 1998). In other words, scientific knowledge⁴ can also be mental constructs proposed by the researcher to explain what has been experienced. A constructivist approach in both research design and analysis could be sensitive to the complexity of small-scale agriculture and allow for the identification of meanings of concepts, nature of relationships and values important to the research participants (Soullier et al. 2001).

The focus in this study of issues relevant to the study population (emic issues) is a characteristic of ethnographic intentions to explore the worldviews and values of the community under observation. In ethnographic work, the researcher generally attempts to avoid affecting the context. In contrast, the situation under investigation was about a deliberate intention to change whereby each researcher was invited and expected to be a part of that change process. In dealing with the complexity of learning about commercialization in this context then, a methodology was required that could traverse the terrain between the scientific world (research process) and the social world (Mouton 1996, p.26). In addition, the ethnographic nature of approach required credibility, confirmability and transferability to be accounted for in the collection and analysis of data. The integrity of interpreting reality would depend on the skill of the researcher as an investigative tool⁵.

In order to encompass these realistic yet methodologically contradictory expectations, constructivist GT (Charmaz, 2006) was used by this study as a discovery process. The use of GT allowed the identification of concepts characterizing the change that emerged from the actual unfolding of events. Generally, all information is coded in traditional GT analysis. In this research however, in addition to the focus on the relationship between production and a market, the selection of information for data was also informed by the

⁴ knowledge that typically in agricultural science has been authenticated by methods that measure actual sense experience, and or by what others tell us about what is right or wrong

⁵ A defence for validity and avoidance of vulnerability has been presented in Caister 2010, p11-14.

sensitizing concepts identified through the researcher's reflection on the EFO constitution document.

These consisted of the researcher interpretations of what farmers perceived as sustainability, culture and development. This was the fundamental explicit statement at community level of shared values, beliefs and vision for commercialisation. In the flexibility of the constructivist approach, it is even more important for the researcher to communicate the journey from empirical data through the emergent and iterative process of constructing theory (Charmaz 2006, pp8-10): not only because of the inherent uniqueness of the methodology that is compiled; but because of the influence of the researcher in interpreting the empirical context. No research in naturalistic settings when repeated will ever produce exactly the same results, but generation, refinement, and validation can be repeated if the techniques are clearly communicated.

Synopsis of Method

The concepts and procedures of GT defined by Glaser, Strauss and Corbin are not a set of precise methodological rules (Kelle, 1997). They do however; provide the researcher with useful procedures for the capturing and analysis of data, and terminology that is useful for communicating the systematic nature of developing theory. Rigour in GT requires establishing an explicit pattern to relate the intuitive sensing of the researcher with the data-based theorising that is core to the GT process (Glaser and Strauss 1999). Reflexivity within constructivist grounded theory methodology specifically recommends that the researcher make explicit how the research process relates to the research participants and represents them in the writing of that research (Charmaz, 2006: 189). As a result of this complexity, each researcher develops a unique approach to the process of theory building when using GT. In this research, generating data and theory building were a 'heterogeneous' consciousness phase representing researcher reflexivity and learning of the commercialisation process within the context of 'being together' as norms and behaviours for commercial farming emerged.

In the conversation about human thought and change at both individual and organizational levels, Senge et al. (2005) proposed a learning process, which they described as a slowing down of the learning. In this process, the future plays an active role in identifying how our own (participant) involvement brings about the future. Senge et al. (2005) refer to this process as the theory of the U and they depict it metaphorically as a U shaped movement, tracing a shift in thinking that leads to deeper understanding of the whole and then a movement towards new action that serves the whole. As an abstract process, the image of the U learning is used to explain successive layers of sensing and responding that describes a cognitive layering of increasing awareness in terms of attitudes, assumptions, and knowledge of the researcher (Figure 1) and of the farmers (Figures 2). The image portrays the depth of understanding and commitment required to align researcher learning, individual (farmer learning), group learning and inter-group learning over time.

Figure 1, depicts an abstracted diagram of how the learning process of the researcher requires the capability to let go of habitual or comfortable ways of engaging with and seeing the world. The process is described by the U shaped movement downward as a move towards deepening understanding through sensing (observing), a pausing to reflect through presencing (retreat and reflect), and an upward movement of realizing (acting without imposing one’s own will or predetermined plan) (Senge et al. 2005, p88). In reality, this was a repeated cycle of participant observation, reflection and action. The cycles connected the researcher with the farmers acting out of their values and beliefs, allowed a retreat into reflection that explored assumptions, and alternative views from literature and individuals, and communicated in writing an understanding of ‘what we were creating’ interpreted through the values and beliefs of the researcher’s professional and life experience.

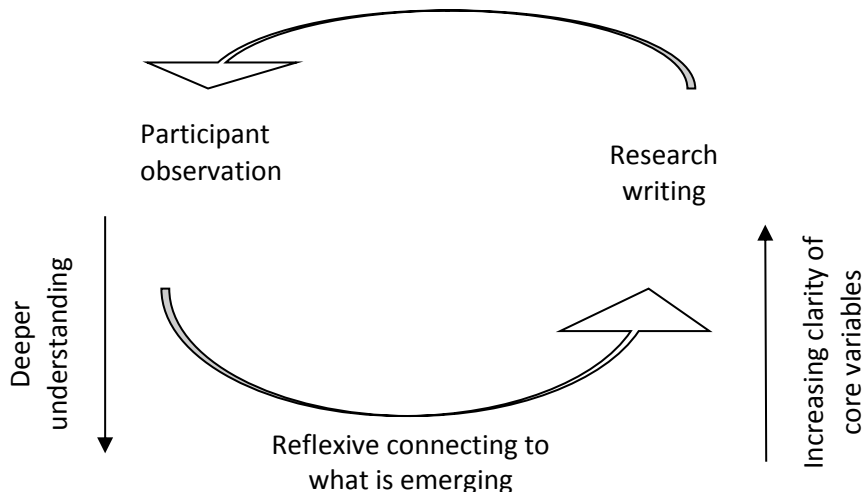


Figure 1. The sensing cycle of Theory of the U learning movement used by the researcher (after Senge et al. 2005,p.88)

For the researcher, this slowing down of learning allowed an increasing ability to understand the core variable of ‘interdependence’ that eventually brought about a new awareness and action defining commercial attitudes and behaviours. Articulating this awareness (realizing) through research writing of this phase linked the researchers’ interpretation of the participatory vision and values to explicit situated information, explorations of ideas and relationships that had theoretical potential, and writing that represented theoretical and researcher reflexivity as core activities of constructivist GT. An extended period (officially the three years 2006-2009) of regular visits to the field was shaped by the rhythm of regular action, reflection, planning and acting that drive research activities and seasonal farmer activity (Caister 2010, p8).

For the farmers, shifts in thinking from traditional farming practice towards commercial norms and behaviours emerged and deepened in understanding as reflection and ownership of action defined stakeholder responses. Already motivated and confident farmers, the catalytic activities of Modi raised consciousness of the rearrangement of resources, and gaps in knowledge that the farmers needed to explore in order to achieve and develop commercialisation as a new way of farming.

The emergence of commercialisation (Figure 2) can be interpreted as successive mental shifts in individual and group mental models that impacted the social and economic expectations of individuals and determined the behaviours at community organisational level (EFO) as well as relations with external or intergroup learning (researchers and

market). In this way, the envisioned future influenced the co-creation of norms and behaviours that characterised the commercialisation process. In each level of deepening understanding (individual or collective), the experience of adapting and cooperating over limited resources, focussed the learning to pay attention to management of relationships and negotiating for resources in the experience of becoming commercial producers.

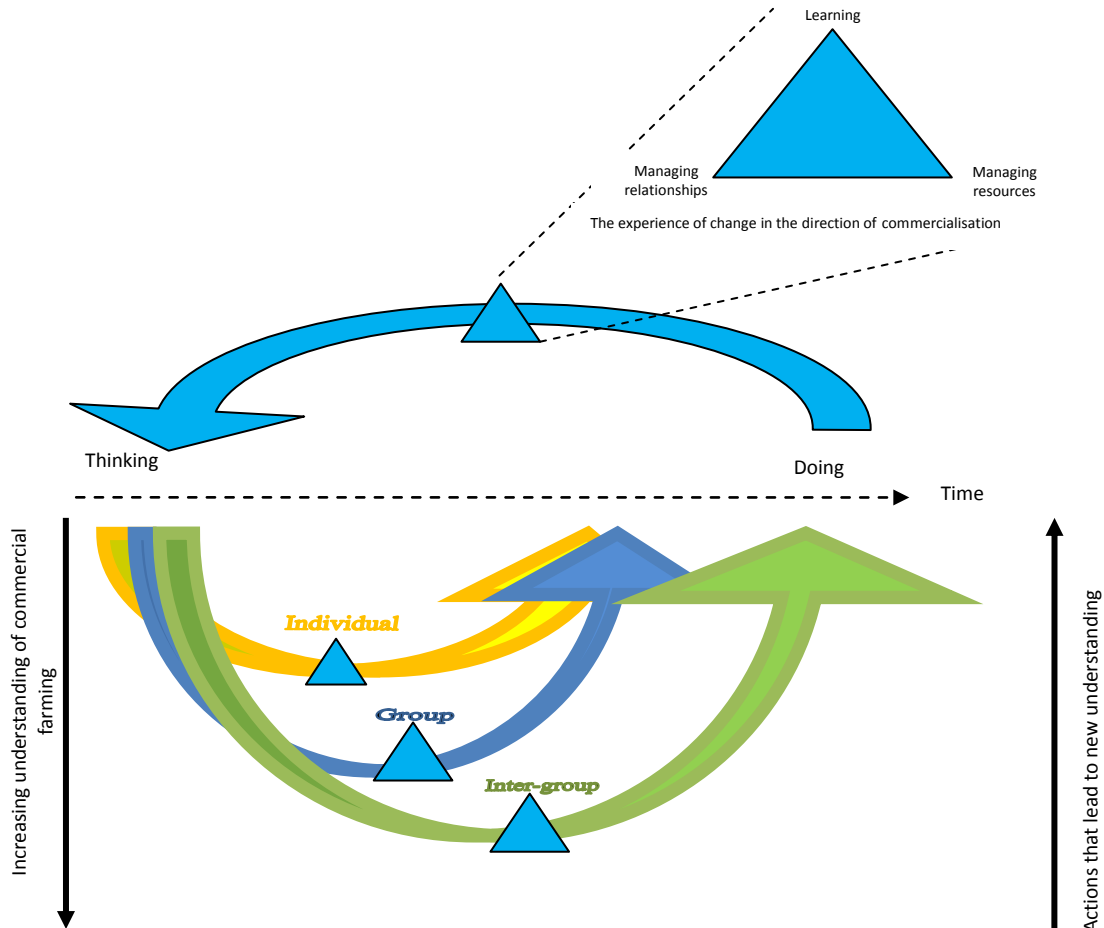


Figure 2. Deeper levels of learning and changing practice (Adapted from Theory U, Scharmer, 2009)

At the individual level (Figure 3), the first shift in thinking emerged from the shared values and beliefs expressed in the EFO Constitution. Members had agreed to them as a shared vision for commercialisation. This required an action response from individual farmers in terms of how do I manage my farming practice in a way that expresses my understanding

of organic certification and produces amadumbe to sell? The learning resultant from this process is not only technical in this instance because the farmers were adapting current practice rather than adopting technology. For example, seeing amadumbe as something to sell not eat, changing roles and responsibilities of family members, management of land use, and balancing social demands that conflict with production goals.

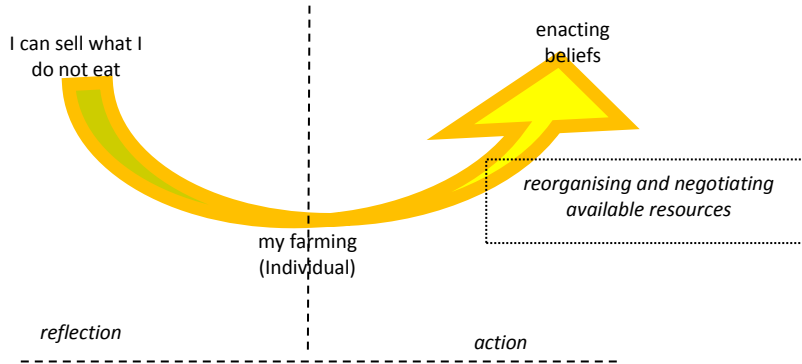


Figure 3. Expression of individual values and beliefs as homestead level farming practice

In order to maintain the social cohesion necessary to respond to the scale of production to meet market demand, the farmer also had to ask, how does my farming productivity contribute to sustainable commercialisation? Even more importantly, how do we as a group optimise cooperation and restraint in order to access the market as a cooperative rather than as competitors with other members?

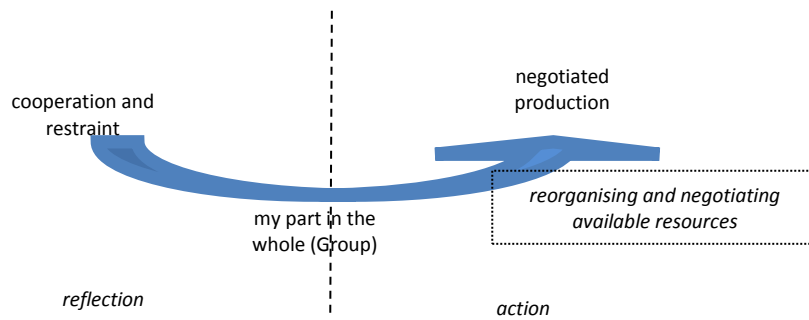


Figure 4. Expression of group values and beliefs as cooperation

Finally, in a shift of learning from each other, inter-group cooperation as interdependence realises the benefits of research and experiential learning for filling knowledge gaps that sustain productivity, and meet the market expectations of quality and quantity.

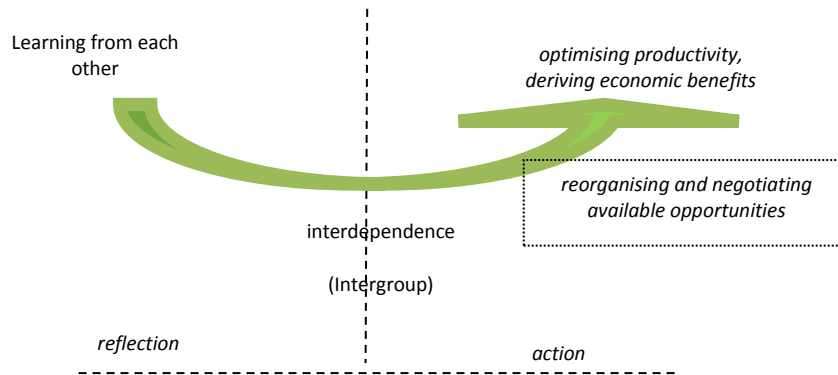


Figure 5. Explicit shifts in thinking at individual, group and inter-group level within the commercialisation process

Theory building phases

Referring again to the researcher process described in Figure 1, the writing (memos, reflections, essays) and recording (field notes, diagrams, photos) had two purposes for potential theoretical development: to identify sensitizing concepts from the context and to collect and organise information gathered around these empirical categories throughout the process of action research. Since GT deliberately begins without a theoretical model drawn from literature to guide the analysis, a framework needed to come from or ‘emerge’ from the context itself. The use of emergent concepts, which lack definitive attributes or benchmarks, provides sensitivity to potential meaning in the empirical arena as opposed to a direct comparison of data with benchmarks (Bowen 2006, p2). The term ‘sensitizing concepts’ was first communicated by Blumer (1954) and many social researchers including Glaser (1978), Patton (1980), Mouton (1996), and Charmaz (2006) have adopted the use of sensitising concepts as a means for highlighting the ideas conveyed by social interaction.

The second phase of theory development was devoted to abstract analysis for theory construction and I did not return to the field except to confirm information by telephone

that seemed unclear. In this process, constant comparison was again guided by the learning movement of Theory U. In this case GT was being used as method for comparing groupings of what was known (data) combined with insight and within that a crystallisation of the core variable with its related characteristics and relationships. Although the abstraction of theory is an important theme for developing Action Research practice, this phase of theory development will have to be described and critiqued in a separate paper. Instead, we turn our attention now to how the products of participation, expressed through stakeholder voices not only contributed to theory building, but also confirm the intentions of Action Research while exposing attitudes and processes that contribute to de-colonizing attitudes and processes within Action Research and Learning.

Products of participation:

“I see it and it matters”

We all know that research is subjective to some degree and qualitative research explicitly so. From the researchers’ perspective, the main assumption underlying the background for the SANPAD Project⁶ research component was that through systematic application of technology, farmers would be able to optimise and eventually maximise production of amadumbe within context constraints. The partnership between researchers and farmers allowed for participants to take command of the unfolding process, and which benefits they sought out of the arrangement. For example, students gained experience and built research competencies while farmers were able to reflect on learning experiences that these same students designed to address researchable problems. The market strengthened its unique ‘certified organic traditional vegetable’ niche and invested in corporate social responsibility.

Scientists and society perceive uncertainty from very different perspectives. The scientist relies on gaps in knowledge as a natural outcome of progressive science. Research begins with a problem demanding an answer. Each progressive step in the scientific method resolves one question using a framework that recognizes valid features from the old

⁶ Each individual research project within the SANPAD project would have disciplinary biases and perspectives that determined the research outcomes.

perspective or theory and incorporates the new evidence. Unaccounted for uncertainties are simply posed as new research questions to investigate. Society on the other hand perceives uncertainty as threatening because it cannot be resolved and may possibly spin out of control. The individual has to live with these consequences whereas scientists just absorb them into their research agendas (Nowotny et al. 2001).

Research when it is conducted as part of a development⁷ or empowerment⁸ process has to deal with the production of knowledge that is a product of science engaging with society over uncertainties. If development deals with knowledge as a ‘thing to be applied’, the emphasis is for ‘narrowing gaps in knowledge’⁹. Experience with the EFO farmers showed that certainty of knowledge is not necessarily a product of rational givens (as in a positivistic science or social science); it is a reality constructed from the interaction with their environment. Regardless of whether it matches the researcher or markets’ logic, the farmer’s response is and must be considered as a rational response to the complexities of homesteading and subsistence agriculture.

For example, in an on-farm polyculture trial which was part of the farmers’ research agenda, scientific measurements for the improvement of identified soil parameters were not statistically significant. The principle researcher in the study explained to the farmers that these results would not objectively support a claim that the soil had been improved.

The farmers disagreed and said the results of the experiment were valid because the soil itself was different. The organic matter and bulk density of the soil had changed as a result of the experiment and was perceived by farmers as an improved tillage and fertility in the soil. This was significant they said, because it affects the ‘effort’ it takes to farm (Field Notes, 2 May 2007).

⁷ Development in agriculture usually means the systematic use of scientific and technical knowledge to meet specific objectives or requirements. For example, improving the lysine content of maize; developing and constructing centre pivot irrigation for reducing labour in intensive operations; or adopting ‘no till’ conservation agriculture.

⁸ Empowerment has connotations of including people who have previously been excluded from decision making processes. In the context of this research, it also suggests increasing learning capability through knowledge, skills, attitudes and behaviours.

⁹ For example – companion planting for improving soil fertility in intensive production builds on a local knowledge of field rotations, fallow fields and intercropping to save labour or maximise space.

In another example, during a group discussion about the challenges of the previous year for commercial activities, a farmer explained that:

My heart was broken over my sweet potatoes. Modi came and told us to plant (sweet potatoes). When the crop was about to be harvested, he took samples - but... (throws hands in the air)...nothing (Field Notes, 10 January 2008).

The other elderly female farmers were nodding in assent and shared frustrations over this memory.

It takes time to plant. It is the fault of the gate keeper that our sweet potatoes were not accepted (by the market). If the people from the market came to our fields and saw how we worked, they would then appreciate our efforts.

A younger woman finally stood up and said,

no, it is not the fault of the gate keeper. I was also not able to sell the sweet potatoes I grew, but what happened was that the market was saturated with sweet potatoes and they could not accept ours. This is the way that the market works (Field Notes, 10 January 2008).

Acknowledging the farmers rationality deepens the researcher understanding of the whole and increases the sphere of influence from which the research can participate in increasing the capability of the individual for dealing with uncertainties in the farming system. And we begin to see that knowledge needed in developing agriculture-based communities is not a new theory vying for centre stage such as organic farming, sustainability, commercialisation, but a way in which to manage the relationship between our technical knowledge and the way in which we arrange our world.

We (scientists) can reflect and the Farmer can reflect on his/her reality as knowledge, but for both of us, we have to find a way to overcome the potential fallibility of that knowledge in a changing world. The emphasis in understanding decision making processes is to try and describe how the farmers manage the relationship between cultural knowledge and technical practice. For example, in an unsolicited narrative, a key informant described the following experience:

I dug up my amadumbe (which were ready to harvest) and discovered muthi - (a substance used to place a curse) on the side of the field. I discovered a reduced yield – (she was only getting the tuber that she planted as the mother plant - no actual increase) in the amadumbe field but my beans and sweet potatoes were fine” (Field Notes, Farm Visit 27 April 2007).

This farmer believes that the muthi prevented her field from producing the commercial crop. She attributes this to jealousy from someone because her fields normally do well. It is not necessarily because of her involvement with researchers, but her whole farming enterprise. She hasn't dug on the field crop trial for which she donated land and doesn't know if those plants have been affected. She calls this “*babulele insimuami*” translated as *they have killed my fields*.

This evil she says, has been allowed because her husband has moved to town and neglected the family. It is his role to strengthen the household (Field Notes, Farm Visit 27 April 2007).

When probing individual experiences of a field trial, I asked: “What if anything, did they (two female farmers) think was a learning experience from having the students around and EFO activities for the last three years.”

*L – the most important thing which I have learned is to be self-reliant...I also learned from the intercropping trial that we all participated in. Before the EFO, working in the fields was a way of life. Women were expected to do something with their time and if they did not work in the fields, what would they do all day? I did not even notice what or why I did things or make observations about them. Regardless of how the harvest turned out, it was done as a ‘way of life’ and we didn’t notice anything nor did we learn anything. However, I now have knowledge with which to think about what is happening with my farming. I can now ‘plan’ and ‘see’ the results of my efforts. At the end of the day or while I am working I can reflect on and learn from what I observe and do. I know why I am doing something; I know how and why to rotate. My yields/crops are **good and I see it and it***

matters. – I am aware of so much now and this encourages me to do it again.

The bold text in the above notes were phrases that the respondent put emotion into. She gestured with her hands and emphasised the words. The researcher interpreted this as communicating that for her, these impacts stemming from her own learning had given new meaning, pride and purpose in farming as a ‘way of life’.

In this research then, the methodology was able to account for the processes and relationships in the dynamics that influence decision making with regard to commercialising indigenous crops with resources that have historically been allocated to subsistence farming in an agrarian way of life. We needed to identify how inequalities (or the quality) in knowledge added to other inequalities (or qualities) to influence the structures and institutional relationships that affect the farmers, markets and natural resources. The challenge was to describe, what the farmer was learning, what the market was learning and what the researcher was learning about sustaining agriculture as a lifestyle within the context of communally owned land in Rural KwaZulu-Natal.

Shifting mental models

In agricultural science, we generally formulate a research hypothesis on theoretical grounds and test it through research activity. In participatory learning, knowledge and meaning is constructed through facilitated experiences. Working with the farmers, researchers were not only committed to being facilitators, but also to being learners on an equal footing with farmers through shared experiences. Participatory decision making in the field with farmers in Umbumbulu had already been a useful strategy for developing management independence and addressing technical and organisational problems in the transformation of homestead farming to small-scale commercial agriculture (Caister 2006). It was in fact the process by which this study emerged.

Being participatory meant that stakeholders had a voice in the process. Some of these voices come from within the community both at an individual and collective level; some of

these voices are external. The agenda then that informed the participation was both participatory and catalysed by specific personalities. This agenda and its subsequent crop trials for improved soil, adaptive production technology and improved *amadumbe* cultivars, provided a focus for interaction around which decisions are made and the tolerance for and inclusion offered to Modi's¹⁰ students (such as myself) to enter, observe, explore and work alongside the community in developing a conceptual model for social agronomy.

On a recent Friday afternoon, when inspecting an on farm crop trial, I asked a farmer why she was motivated to donate the energy and cost towards an experiment from which she could not eat or sell produce.

She replied that when someone (referring to Modi) brings you something, you do not reject it. You match that person's effort with commitment. We also do this, she added, 'because we are always interested in learning and know that these experiments will benefit us in the future (Mrs. Mbila, personal communication, 2007).

To be able to reflect on this emergent practice and make theoretical statements required a systematic data collection and reflection process as agile as the context. A constructivist approach for both research design and analysis required being sensitive to the complexity of small-scale agriculture and allowing for the identification of meanings of concepts, nature of relationships and values important to the research participants (Soullier, Britt, Maines 2001). The focus in this study of issues relevant to the study population (emic issues) was a characteristic of ethnographic intentions to explore the worldviews and values of the community under observation. In ethnographic work, the researcher generally attempts to avoid impacting the context. In contrast, the situation under investigation was about a deliberate intention to change whereby each researcher was invited and expected to be a part of that change process.

In dealing with the complexity of learning about commercialization in this context then, the methodology needed to be able to traverse the terrain between the scientific world (research

¹⁰ 'Modi', refers to Professor Modi, the researcher from UKZN who has maintained a long term relationship with the EFO and is Project Leader for the development process. I use this name because this is what he is called in the field by farmers and researchers alike.

process) and the social world (Mouton 1996 Fig. 5.1, p.26). The methodology must draw on real needs, realities and visions employed in the process of change. A method for this study was needed which would match the purpose: to develop new conceptions, explore possible evidence of a new way of thinking and provide the flexibility to explore the process of the research as equally important to the theories being developed.

In order to encompass these realistic yet methodologically contradictory expectations, GT was used by this study as a discovery process. The use of GT allowed the identification of concepts characterizing the change to emerge from the actual unfolding of events. The use of GT in an ethnographic approach however, is not without epistemological issues to consider. For example, credibility, confirmability and transferability needed to be accounted for in the collection and analysis of data. The concepts and procedures of GT defined by Glaser, Strauss and Corbin are not a set of precise methodological rules (Kelle 1997). They do however provide the researcher with useful procedures for the capturing and analysis of data, and terminology that is useful for communicating the systematic nature of developing theory. A challenge for this research with GT was that in its abstraction from the data, GT is “not concerned with understanding the world of the research participants as they construct it” (Glaser 2002, p 3). Integrity of interpreting reality would depend on the skill of the researcher as an investigative tool.

Using GT as the theoretical root of the methodology allowed the discovery process to aim at using an open mind and receptive ear as long as possible. Abstracting concepts allowed the researcher to reflect on the shared value base of the learning that occurred to identify labels that link the unfamiliar abstracted concept with the vehicle or pattern familiar to the substantive context. Confirmability of interpretations assists in ensuring accuracy of interpretations. Evocative accounts and use of voices in the development of concepts contribute to the ability for readers to connect to the context and identify with it. The urgent task then was to identify and implement a systematic way of dealing with the data that could be defined, documented and would eventually result in abstract concepts (sufficiently abstracted from people, time and place), but also represented the wisdom of

the voices contributing to the dynamics of commercialisation thereby accounting for an understanding of the research situation.

The nature of action learning within an agricultural context is to respond with technology or process to what is happening, when it is happening. Our experience of participatory action learning with the EFO farmers, allowed for the exploration of potentially beneficial laboratory technology and theoretical knowledge within local technology and practice¹¹. The participatory solving of the problem on the ground or in the field as it were, delivers both immediate benefits and the possibility of long-term benefits to the participants. Within the limited time frame of the project, these were expressed as an awareness of identity and confidence. At an individual level, one farmer expressed that her learning linked to a participatory field trial had improved her knowledge and practice to such an extent that her time was becoming valued. She shared the following:

...The other thing is that now my husband has taken notice. Before, my farming was just something that he thought I did to spend time. Now however, he respects what I am doing and is willing to invest in my farming...¹².

At the group or community level, the author facilitated an EFO members' group reflection designed to unpack some of the issues farmers were having with the market. One focus group representative concluded their contribution to the report back with the following recommendation to the other farmers:

...this way of asking questions and discussing them openly allows us to see the issues that others are concerned about is very helpful, and we think that we would like to begin doing this every three months in order to help build trust and discuss issues within our organisation... (Mr Maphumulo 18 April 2008)...

¹¹ Localised social agronomy organises technology and practice in a way that is by nature normative, and thereby familiar, generally legitimised, accessible and available to all community members or family groupings.

¹² She had earlier mentioned that her husband had paid for her fields to be ploughed to save her the effort of preparing the land by hand tillage. He had also offered to help sell her sweet potatoes at his work place.

In terms of transferring technology, one farmer explained how she has applied her new-found knowledge of companion planting legumes with amadumbe to improve productivity and maximise effort.

From the field trial she learned that planting beans and amadumbe as companions, give a good crop of beans but the harvesting point is critical. She has discovered that if you multicropped with beans, you must pull the whole bean plant out as soon as bean plants begin to wilt (and throw on roof to dry rather than leave in field to dry as normal). If you do not do this (harvest at the right time) then it affects the amadumbe yield. You must pull the beans and then immediately or at most the next morning, you pull the older amadumbe leaves off the outer edges and pile the soil around the mother plant. The purpose for doing this is to encourage growing space and protection for the side shoots. It is the side shoots that produce the marketable rhizomes. In the third and final weeding as the plants are showing a maturity for harvesting, even the newest side shoots are removed (by hand) with any other weeds to encourage maturity of side shoots that have already been established since the beans were pulled (or since last weeding). If managed correctly there is very little surplus of rhizomes and therefore little waste. When marketable rhizomes are harvested, only planting material is left and enough for household use (Mrs. Wanda, 13 March 2009).

Thinking patterns are changing. In the following extract from field notes, Mr Miya explains how participation has made him conscious of opportunity:

...Before the EFO we would never have thought of growing extra food. We wouldn't have known what to do with it...I am someone who is not commercial in the sense that I do not have a large scale enterprise. This is what is usually meant by commercial. However, because I know there is a market and understand the process, I am now working towards being defined by that definition...we know that the market is there and the process works...(Baba Miya, 19 October 2009)

The changing attitude of the market was also being expressed through behaviour.

...we were learning that by committing to small scale farmers, we were contributing to their becoming successful and building loyal suppliers for the future...By supporting communities we could also contribute to specific objectives: alleviate poverty, drive development and protect the environment. This led us to strive for 'good business'¹³ (Dr. Johan Ferreira, 13 October 2009; personal communication).

Adjusting normative practices to address farmers concerns such as less waste and less effort leave lasting benefits within the farming community. Expanding experiences generates memory for recognising alternatives and decision making that increase potential responses to uncertainty.

Contributions of this research to de-colonizing Action Research

The evocative accounts of farmer's voices used to describe the benefits of participation show how collaborative thinking within Action Research unlocks the potential for contributing to theory through various levels of reflection, consciousness and participation. For example, that the farmers wanted their story to be told, in hopes that it would contribute to a new way of thinking about rural economic development is a contribution to abstract thought. The farmers are deeply involved in farming decisions and realities: the researcher cannot really be them or fully 'know' them as an outsider, but researcher participation in local problem solving may generate a greater consciousness of contextual uncertainties and solutions. The researcher is deeply involved in abstract thinking: the farmers cannot really be the researcher. But the farmer can contribute to theory through the reflective process that articulates; if I can do this, maybe someone else can do this too. This is the strength of Action Research for facing systemic change: it allows for contributions along a spectrum from all participants according to their levels of participation and consciousness of abstract thinking. The farmers determined a 'thinking/observing' role for the author (myself) and then continued to think deeply themselves, while re-shaping communal values and behaviour and contributing willingly to the theory building process through individual reflections on their philosophy, practice and desired futures.

¹³ Principles of Woolworths 'Good Business Journey': accelerate transformation, drive social development, enhance environmental focus, address climate change (Woolworths 2007).

Action Research is also affirmed in its role for emancipatory process and thinking. For example, the shifts in mindset observed throughout the research process contribute to long lasting benefits for successful thinking in commercialising traditional agriculture in communally owned spaces. Allow me to illustrate again using some explicit shifts in thinking already identified in Figure 2 as individual, group and intergroup learning. Becoming conscious of knowledge (We are skilled farmers), taking command (we own the amadumbe), making informed choices (amadumbe used as food or sale), and responding to the consequences (the negative effects of mono crop production on soil fertility must be resolved, dealing with markets requires negotiation, inequalities of access to market can be preserved by co-operative production). Recognizing the shifts in mindsets helps agricultural scientists understand how technology can be used not just to make people's lives better, but to facilitate attitudes and behaviours that impact networking and organising for innovation and sustainable thinking.

Conclusion

The methodology presented in this paper was aimed at interpreting radical democracy – the meaning in the process of individuals who have determined and continue to define their future. Using GT as the theoretical root of the methodology allowed the discovery process to aim at using an open mind and receptive ear as long as possible. Evocative accounts and use of voices in the development of concepts contribute to the ability for readers to connect to the context and identify with it. The use of sensitising concepts achieved two purposes in this research. They limited the scope of the study and purposefully used emergent concepts, (definitions and visions that arose from participatory engagement) that were eventually woven from the engaged phase of the research into the completely theoretical phase of organising concepts and relationships.

The research question itself was: “what decision-making processes and relationships have defined the commercial activity of the EFO members?” The events observed over the three years of data collection were either formal steps or associated activities of a loosely connected project partnership between academic scientists committed to partnering and

individual research agendas, farmers who consciously chose to re-allocate scarce resources towards the growing of commercial crops and a market that was sympathetic towards commercial farmers within the context of communally owned land.

For the farmers who were members of a community structure called the EFO, commercialisation was a deliberate shaping of a new reality. This reality was implied in the EFO constitution as a shared set of values and beliefs and made explicit in the re-allocation of scarce resources in response to the market and learning opportunities offered.

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Appendix 4-2

Data Log of Field Interactions (2006-2009)

Nodes: refer to how many open codes are linked to this document

Memo Link: indicates how many memos refer to this document

Citation Reference	Identification of interaction (digitised version of raw field notes stored in NVIVO data base)	Memo Link	Nodes
FN231005	20051023_FN_23 Oct 2005_First Visit_Sisi Khanyisile, Gogo, Makhanye, Mabide		0
FN180406	Workshop Notes_18 April_FN_Marketing Workshop_	Yes	7
FN260606	20060626_FN Mr Maphumulo House Visit (CM Notes)		21
FN010806	20060801_1 Aug 2006_Interview With Modi	Yes	19
FN061106	20061106_EFOFM_6 Nov 2006-Decision Making Cycle		1
FN221106	20061122_FN_Talk At Trial Site (Fielde Mkhize's)		19
FN281106	20061128_Miscellaneous Notes Incl End Of Year Party		32
FN140307	20070314_FN_14 March 2007-Ndlovu Visit	Yes	39
FN260407	20070426_26 April (Thursday)_HH Visit To Lelephi And Z Mkhize		25
FN260407	20070426_26 April 2007_Zmkhize HH Visit		28
FN010507	20070501_FN_1 May 2007_Z Mkhize		7
FN070507	20070507_EFOFM_7 May 2007 Interview With Charity		17
FN190607	20070619_FV_19 June 2007_Maphumulo_Fencing Issues		16
FN190607	20070619_FV_Bhengu_19 June 2007		13
FN020807	20070802_FN_2 Aug 2007_Community Gardens		26
FN060807	20070806_EFOFM6 August 2007_Problems For New Members		19
FN051107	20071105_EFOFM_5 Nov 2007		6
FN061207	20071206_EFOFM_6 Dec 2007		13
FN121207	20071212_EFOFM_12 Dec 2007		44
FN070108	20080107_EFOFM_7 Jan 2008		17
FN100108	20080110_FN INTQ_Nomusa's Focus Group	Yes	36
FN100108	20080110_FN_Nomusa Efo Performance Questions		30
FN101108	20080110_FN_Nomusa_Visitors Interviewed		19
FN080208	20080208_EFOFM_8 Feb 2008		40
FN070408	20080407_EFOFM_7 April 2008		47
FN190508	20080519_FN_19 May 2008_Hevos Training	Yes	33
FN020608	20080602_EFOFM_2 Jun 2008		35
FN120908	20080912_INTQ_12 Sept 2008_Mkhize Wives_Miya_Group Discussion		58
FN021008	Value Adding Training		0
FN291108	20081129_29 November 2008_Feedback To FM		5
FN291108	20081129_EFOFM_29 Nov 2008		39
FN291108	29 Nov 2008_First Meeting With Ants		2
FN130309	20090313_FN_13 Mar 2009_Meeting With Ants		3
FN130309	20090313_FN_13 Mar 2009_Meeting With Ants_Charity's Notes		19

Citation Reference	Identification of interaction (digitised versions of raw field notes stored in NVIVO data base)	Memo Link	Nodes
FN130309	20090313_FN_13 Mar 2009_technology transfer	Yes	57
FN190809	20090819_FN 19 Aug 2009_ANTs tunnels_Miya_Wanda interviews		54
Reflection	Bank Loan Bureaucracy– what farmers have to supply		5
Document	email_20061129_farmers of year awards		0
Document	email_20063011_modi instructions		0
Document	EMBO WARDS and vocabulary		0
Document	Interview with Modi		25
Reflection	Assets and the Zulu World View, December 2009		0
Reflection	Michael Patton_Research Design_Ramblings based on readings	Yes	0
Reflection	Ubuntu/Harambee and African Ethics notes from readings (Murove/Nyerere)	Yes	0

Appendix 4-3

Open Coding of digitized field notes (Extract only)

NVIVO RECORD NAME: 20080110_FN_Nomusa EFO Performance Questions

Citation Reference: FN101108

(source) R:\KKK\K.Files\A_karen PhD DATA\DATA\Field Notes\Word versions of field notes\10 Jan 08_Nomusa_EFO performance questions.docx

Raw Data : Field Notes from Group survey at Mrs Thuli Mkhize's homestead, Lower Ezageni - 10 January 2008 - 09h00. Pics for this data were taken by Karen and are labeled: 10 January, MaThuli. NOMUSA_Raw data and Nomusa_visitors for complementary notes.

How well did the EFO go last year for you?

Mama Gumede

Poor yield of amadumbe – the reason was late planting (just b4 christmas)

17 “bhavs” (+- 14kg)(?check weight) of amadumbe returned. (*note: Mrs Mkhize explained later that the reason for this was that the market was saturated*)

She planted sweet potato which was also not taken. Therefore she resorted to local markets and then word of mouth to her neighbours.....she has lots left which she is still eating!

. She was asked to plant sweet potato and was promised it would go to the Pack House.

Mrs Mbili

She is heart broken about her sweet potato crop.

Modi told them to plant, took samples – but ‘nothing’ [*note: it is only committee members who respond to questions about Woolworths “market” Mrs Mkhize interrupted and explained that the guys at Woolworths did come and encourage them, but that that particular man who was negotiating and resigned and didn't hand over. The new people did not know about the sweet potatoes and it is not Modi's fault, even though he asked the farmers to grow sweet potatoes. In fact, the problem is not even Woolworths, but originates from the market which was saturated with amadumbe*]

A diagram of what was being said (conflicts of interest) follows: see diagram

Patata – grown for WW

Additional crops that they hope to grow now are butternut .

What are the challenges for next year (2008)

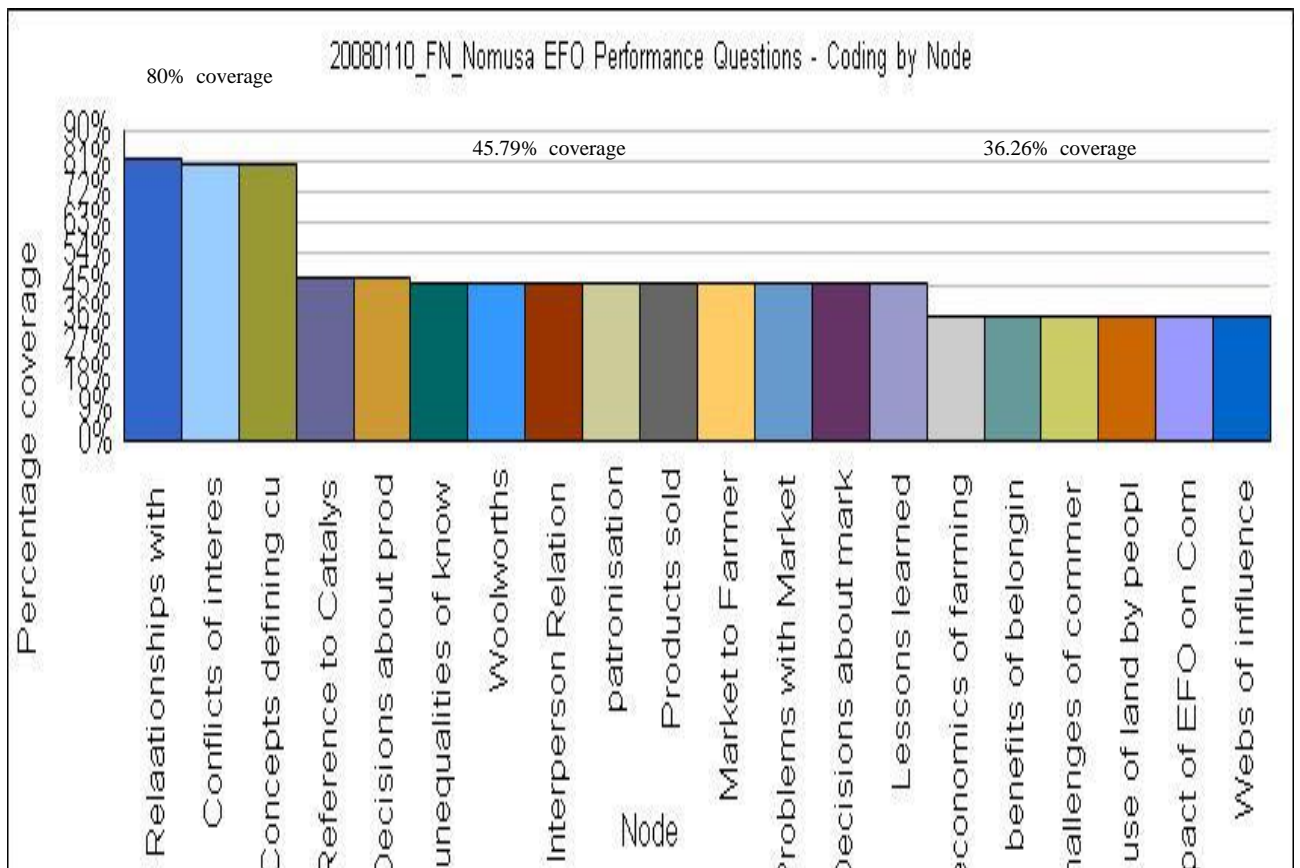
- New members who don't have access to cattle manure
 - We can ask from our neighbours
 - We can purchase from our neighbours at R6 a bag to R12/bag plus transport costs

The farmers asked: are there no sources of funding?

We asked what for?

They are looking for funding to plant and for formal planting.[*my notes do not say how we responded to them – oops – big slip up!*)]*Why do these wives of the Mkhize valley want funding? have they had training, do they feel they are entitled to funding because they are growing commercially over and above their socially given duties? - Do their husbands express any interest in thier farming? (note Lilephi's husbands response to her success) I had originally thought that these wives were different from the other groups especially because they are all related and it seems as though their husbands work (no one is at home looking after cattle because they hire tractors) The cattle are a nuisance belonging to others - some hh do have cattle, but the area is quite densely populated for grazing to be allowed.*

Chart showing open coding of the above notes using NVIVO (Automatic chart function)



Free Nodes: Full names from left to right not displayed in chart above (see also Appendix 4-4)

- Relationships with externals
- Conflicts of interest
- Concepts defining culture of the EFO rural lifestyle
- Reference to Catalyst
- Decisions about production
- Unequalities of knowledge
- Woolworths
- Interpersonal relationships
- Patronisation
- Products sold
- Market to Farmer
- Problems with Market
- Decisions about marketing
- Lessons learned
- Economics of farming
- Benefits of belonging to EFO
- Challenges of commercialisation
- Use of land by people
- Impact of EFO on community
- Webs of influence

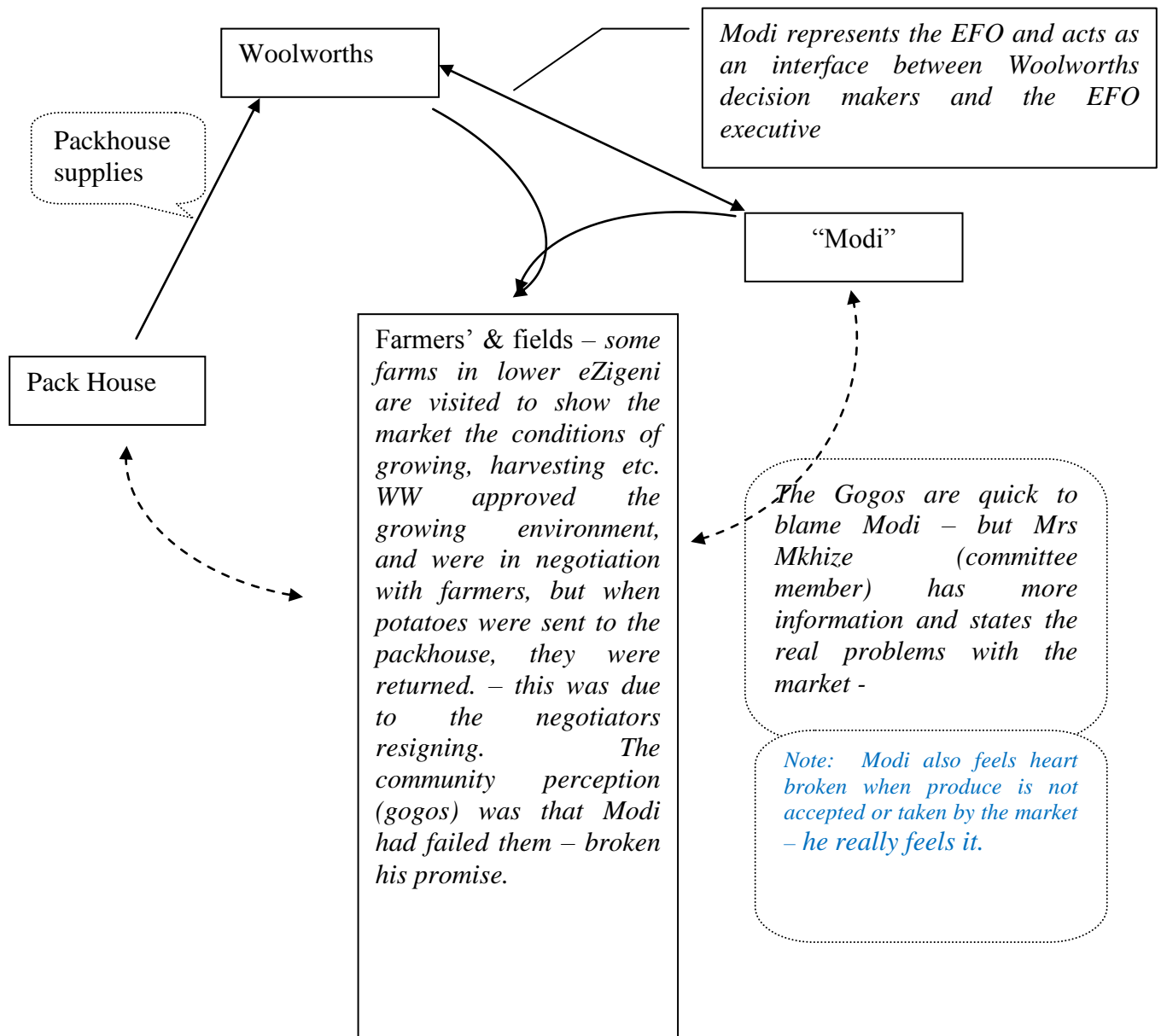
“MY HEART WAS BROKEN”

DIAGRAMMING THE TENSIONS OBSERVED IN THE FIELD EXPERIENCE ABOVE

Decision making and resulting conflict about the decision to plant sweet potato for the market.

See 10 Jan Ma Thuli’s homestead – for field notes.

(Information gleaned from extra questions asked at a group survey for Nomusa’s indigenous soil knowledge – lower eZigeni).



Appendix 4-4

Free Nodes (NVIVO), as coded categories. Examples were drawn from the range of field notes as they were added to the data base. Sources refer to the “examples from field notes”. References refers to how many times information was allocated (coded) to the node

Table 1. Summary of Coded categories referred to as Nodes (Open Codes) in NVIVO

Name of Node (open code)	Sources	References
Webs of influence	44	178
Challenges of commercialisation	35	108
Concepts defining culture of the EFO_rural lifestyle	35	124
Use of land by people vs use of land by professionals	34	129
Decisions about production	33	119
Farmers perceptions of self	33	119
Reference to Catalyst	32	52
Farmers visioning	30	74
Group decisions	30	67
Farmers beliefs	29	77
Relationships with externals	29	58
Unequalities of knowledge	29	87
Impact of being organically certified	28	54
Decisions about marketing	27	49
Interpersonal relationships	27	63
Cases_ personalities & their stories	25	41
Successful technology transfer	25	52
Benefits of belonging to EFO	24	51
Data Log of events	23	35
Examples of farming technology	22	66
Problems with Market supply	21	40
Farming technology_traditional	20	61
Homestead crops	18	62
Behaviour of farmers in forum meetings	17	49
Economics of farming	17	61
Household_allocations of labour k& resources etc	16	36
Concepts for ARD Posters	15	58
Decisions about seed	15	31
Questions that have not been answered	15	16
Reasons for Research	15	20
Constraints on growing amadume	14	21
Hierarchy-choice of who benefits	14	25
Impact of EFO on Community	14	36
Problems with extension officer	14	26
Lessons learned	13	18
Market to Farmer	13	19
Conflicts of interest	12	30
Face saving, admitting ignorance or not	12	14
Patronisation	12	16

Extension officer	11	18
Justification for counter movement	11	17
History of the EFO	10	20
Implications for policy delivery	10	16
Indigenous resources	10	18
Karen's identity	10	14
Tractor	10	12
Farmer to Farmer transmission (or not)	9	14
Environmental knowledge known by farmers	8	19
Indigenous knowledge	8	19
Interhousehold_clan relationships	8	19
New Technologies and practices	8	12
Non delivery	8	12
Problems with tractor	8	10
Products sold	8	11
Research opportunities	8	10
Woolworths	8	12
Bakkie issues	7	7
Decisions about leadership	7	11
Description of area	7	13
Organic certification process	7	11
Land Bank funding	6	6
Spinach project	6	6
Farmer innovations	5	9
Impact of community on EFO	5	15
References to Photos	5	5
Amadumbe sales	4	4
Ants	4	7
Cattle_livestock issues	4	4
Challenges with methodology	4	8
Farmer Flexibility & innovation	4	12
HH demographics	4	4
Impact of municipal attention	4	7
Alternative markets	4	4
Soils	4	8
Sugar cane	4	4
Tensions between externals	4	5
Access to water	3	4
Feedback to EFO re research	3	3
Fills his ~green sack~	3	6
Impact of Crop Trial on HH farming	3	3
Market innovations	3	3
Amadumbe price	2	2
Information about infrastructure	2	2
Jealousies	2	2
Patterns	2	7
Q. 2 production steps of amadumbe or equivalent	2	3
Deaths of members	1	1

Educating the public	1	1
Farmer of the year awards	1	1
Impact of EFO on SA	1	2
Mechanisms of EFO external relationships	1	1
Old mutual bank (ants)	1	1
Q.1 traditional crops produced	1	1
Worms	1	1

In the figure below, is a chart of the Node “Decisions about leadership”. The chart shows the sources used (7) and how many times, in that source, a selection of text (reference) was coded to this node.

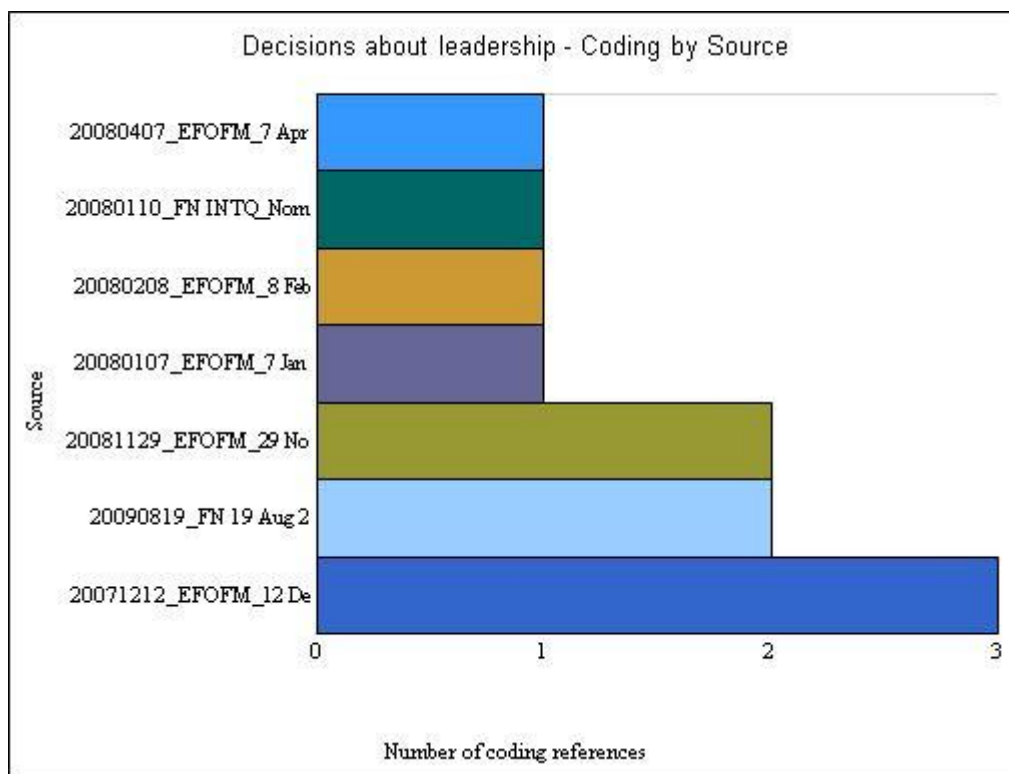


Figure 1 Node (open code) for Decisions About Leadership (automatic chart using NVIVO).

Appendix 4-5 Poster 1

Farmer-researcher partnership: towards commercialisation of homestead farming

Caister, Karen¹, Modi, Albert¹, Maphumalo, Charity¹, Ndlovu, Mfundo², Green, Maryann³, Hebinck, Paul⁴, with the Farmers of the Ezemvilo Farmers Organisation, ¹Community Resource Management, University of KwaZulu-Natal, ²Crop Science, University of KwaZulu-Natal, ³Agriculture Research Council, ⁴Center for Environment and Development University of KwaZulu-Natal, ⁵Community Resource Management, University of KwaZulu-Natal, ⁶Wageningen University

INTRODUCTION

Through participation in research and appraisal, farmers analyse their own situations and engage in productive dialogue with research scientists and extension workers. Reported here are research and learning processes which have contributed to the initial phase of an ongoing action research in social-agronomy. Learning processes are shared by multiple stakeholders including members of the Ezemvilo Farmers Organisation (homestead farmers), research organisations and private enterprise. Learning informs planning, action and evaluation for stakeholders and scientists in the process of developing sustainable commercialisation of homestead agriculture. The purpose of this study was to identify research questions for a participatory technology development approach for production of organic traditional crops in Umbumbulu, KwaZulu-Natal.

"...It is important at this moment that I tell you that our organisation has a motto: *Sifundela ukwenza; senzela ukuphila* (Learning to do; doing to live). To live up to the motto, this year we embarked on a participatory research with the University of KwaZulu-Natal. We, EFO members, at a workshop held early in the year with Professor Modi and his students, identified the objectives of the research. The aim of the research is to show that homestead farming can be a successful model for rural agricultural development. We already have many experimental trials established everywhere, and from the trials we shall learn about improving soil fertility using earthworms and traditional crops from Mrs. Charity Maphumalo. For the next two years, Mrs. Karen Caister will help us to determine the impact of the research on our homesteads, the EFO and the markets..."
(Extracted from Address by the Chairman of Ezemvilo Farmers Organisation, Mr D Mya, 2006 Annual General Meeting)



METHODOLOGY



Meeting with SANPAD and EFO representatives at start up workshop, UKZN, October 2005



SANPAD Project team invited to Umbumbulu and visited with members of the EFO, District road D1001, the entrance gate, eZweneni

STEP 1: Introduction of the research project, its participatory nature explained and approval requested from EFO farmers by



Individual homesteads were visited and informal discussions were held with individuals and small groups in the fields and at homesteads of the farmers.



Lunch meeting with EFO farmers. Farmers were asked to initiate research questions which would be explored together. Prof. Modi promised that we would report back on the questions raised in a workshop.

STEP 3: A one day workshop, at eZagani Community Hall, clarified researchers' interpretations, using an interactive, dialogical approach. Prof. Modi's relationship with the community allowed him to be the catalyst for discussion. Although discussions occurred as one large group, much interaction occurred between the men, between the women, and between the men and women.

STEP 2: Farmers questions were collected and translated into English.

EFO members responded very positively and by the end of February 2006, 63 individuals returned questions regarding problems they encountered within the context of their farming practices.

Researchers grouped related problems with soil, problems with crops, problems with pests and other problems including equipment and access to materials.

Table 1: Ranking of most important problems (by group consensus)

1. Transport for harvest to markets. (Researchable problem)
2. Fencing. (Researchable problem)
3. Tractor. (Researchable problem - model for community tractor system)
4. Identifying planting dates for new crop varieties, planting dates for these and predicting changing rain patterns. (Researchable problem)
5. Use of indigenous plants for weed control. (Researchable problem)
6. Amadumbe Blight (leaf burn). (Researchable problem)
7. Water. (Researchable problem)



The Research Team in action

OUTCOMES of Farmer - Researcher relationship for YEAR 2006



Twelve homesteads volunteered to participate in crop trials. At six of these, farmers and researchers, prepared and planted amadumbe intercropped with cowpeas. Scholars were encouraged to 'apply' theoretical maths in the lay out of 1m x 18m plots. Commercially prepared worm compost was used as the organic fertilizer. Farmers selected high quality amadumbe tubers from their own stock.



KwaZulu-Natal's first 'organic pumpkin fair' was initiated by the EFO on September 11, 2006. Indigenous pumpkins were identified as a potential crop. Seeds from display pumpkins were extracted and returned to farmers for on farm trials aimed at marketing to Woolworths in 2007. Traditional knowledge for growing and utilizing pumpkin and melon was recorded and recipes tested in a consumer sensory panel held at UKZN.



Participants in crop trials were introduced to the technology of using red wiggler worms to produce high quality organic fertilizer from waste materials. Participating homesteads were supplied with starter worm bins and focus groups discussed the technology and value of worm farming in organic vegetable production.



Linkage to commercial markets, technological support for irrigation options accompanied by potential funding have been achieved. "We are thankful to Woolworths for funding our certification this year...and the compliments on the quality of our amadumbe... We achieved more than a good working relationship with Farmwise Packhouse... We thank Mr. Bhebe for his kindness... for making this year the smoothest we've had in our relations with the market..." (Extract from the EFO Chairman's report, 2006 Annual General Meeting)


Training sessions for financial planning and record keeping address the issue of ensuring cash flow when times are tight.

ACKNOWLEDGEMENTS

The research project is funded by SANPAD Project Number 05-321. Woolworths and Farmwise Packhouse, KwaZulu-Natal, have guaranteed a vital access to commercial markets for EFO products. Crop Science, UKZN, provided hands-on working knowledge. In our fellow letters to EFO farmers, we gratefully acknowledge your enthusiasm, hospitality and partnership.



Appendix 4-6 Poster 2




Affirming life and diversity: commercial farming strategies in Umbumbulu

Maphumulo, Charity¹, Caister, Karen², Modi, Albert³, Green, Maryann⁴, with the Farmers of the Ezemvilo Farmers Organisation, Woolworths, Hertzog Pack House, Ndllovu, Mfundo⁵, Hebinck, Paul⁶, Agriculture Research Council, Center for Environment and Development University of KwaZulu-Natal, ⁷Crop Science, University of KwaZulu-Natal, ⁸Wageningen University

INTRODUCTION

Participatory action research has afforded us an opportunity to observe and understand farmers' activities in their entirety. Despite their involvement in our research which focuses on the main crop (taro), many farmers have other intense farming enterprises that are of equal importance to their survival strategy. As researchers (we) came to understand a farmers point of view with regards to their resource (time, money, effort) allocation and the process of decision making in their endless attempts to sustain farming at homestead scale.

Affirming Life



Family

Farmers who commit all of their time, effort and resources into subsistence farming are perceived as the poorest/illiterate because of their inability to see beyond the soil/land to face life's challenges

Farmers who do other things alongside of farming have a higher social status

EFO farmers have a good image

Perception of self

We have food security and excess food can be sold for money for schooling and other cash-dependent essentials

Farmers have the benefit of excess food, use of time and flexibility


A city job compared to farming will generally not provide self esteem. The salary is too small relative to social standing, and the ability to be in command of ones time and flexibility.

Perception by others


Farmers have better nutrition, excess harvest and are able to barter and exchange with others

Farmers are perceived by our farmers as clever people who can manipulate rural resources to their own return


EFO Farmers, have shorter turn around on their crops and have support as well as established markets



Sharing and combining inherited knowledge for application in agriculture

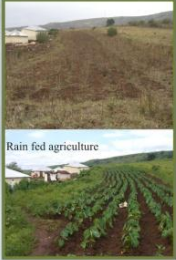


- Cassava from relatives in Zimbabwe
- Sweet potatoes from Mozambique
- Tree tomatoes from 'someone'




Farmers have used locally sourced variety of processed foods


Working with our environment and replacing what we take out



Rain fed agriculture




Crop rotation



Maintaining human content


Preserving rather than curing

Adding well rotted manure



Passing down seeds adapted to our environment from one generation to the next

Embracing Change



Vehicles purchased by the EFO for farming activities

Organic certification requires a lot of paper work

Individual Farmer records

Field 1	12 September 2007
Plough	8:00
Planting	10:00 - 12:00
Planting material	20 bags (10kg)
Planting	2 x 2 rows x 8.00 = 16.00
1 st Weeding	2 x 8 rows x 8.00 = 128.00
2 nd Weeding	2 x 8 rows x 8.00 = 128.00

Internal assessors collect & return documents for certification

Experimental learning raises consciousness of the rhizosphere and looks at the impacts of polyculture on soil fertility and yield

Market oriented agriculture in the Ezemvilo Farmers Organisation is characterized by diverse and complex strategies for the production and marketing of familiar crops

Mixed Farming
Organic and non-organic crops
(highly diverse strategies)

Amadumbe
(certified organic or in transitional phase)

Field production of market vegetables
(organic but not certified)

Tunnel production of vegetables
(organic but not certified)

Sugar cane
(not organic)

Timber

Focused production of commercial amadumbe crop through the following strategies

Re-allocate land for amadumbe


Monocrop amadumbe in rotation with subsistence crops







Increase portion of land for market crop

Selling excess production as livelihood strategy (highly diverse or focused only on land and subsistence production)

Subsistence production of grain, tubers and vegetables through field production, tunnels, household gardens and community gardens

Business management students from UKZN introduce vegetable tunnels as an in-service training development project. The young female farmers (who call themselves ANTS) have championed this agribusiness.



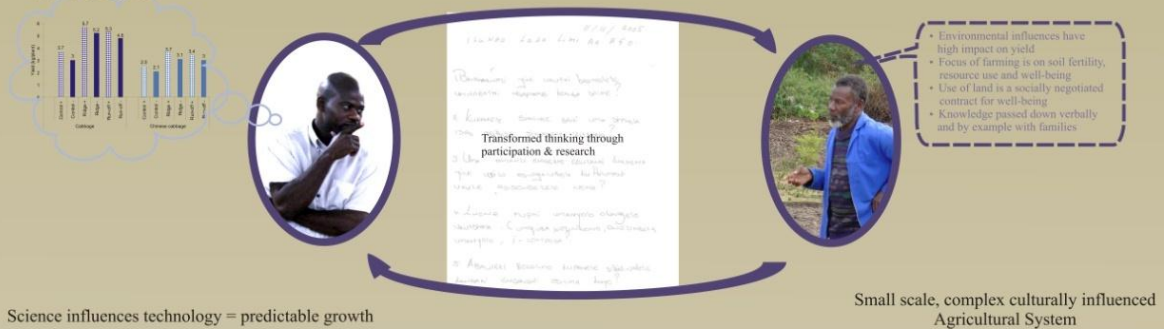
Appendix 4-7 Poster 3

Encultured, Embodied, Embedded: A new discourse within commercial agriculture

Caister, Karen¹, Maphumulo, Charity², Modi, Albert³, Green, Maryann⁴, with the Farmers of the Ezemvelo Farmers Organisation, Woolworths, Hertzog Pack House, Ndlovu, Mfundo⁵, Hebinck, Paul⁶. ¹Center for Environment and Development University of KwaZulu-Natal, ²Agriculture Research Council, ³Crop Science, University of KwaZulu-Natal, ⁴Wageningen University

Over a period of three years (2006-2008) University of KwaZulu-Natal Researchers, Woolworths, Ezemelo Farmers, a commercial pack house and an extension officer, engaged with each other to resolve the challenges of commercializing homestead traditional crop production. Organic certification of traditional crop production was being used as an intervention to access a national market. Identifying specific researchable questions and participating together in establishing norms and agendas for production and the organisation itself, has resulted in what is for us, a 'new' way of being 'together' in the world. The theory of participation assumes the inclusion of non-academic participants in knowledge production. Through a variety of shared experiences, different disciplines and sectors have integrated knowledge production with indigenous farming capabilities. This poster presents what we have learned to date about being rural, economically active and sustainable.

A unique relationship: science and indigenous knowledge coming together within the local economic environment



Overcoming resistance through determining agendas and establishing norms



Stakeholder learning transforms thinking and values

