

Chapter 8 Case study background and assumptions: a contextual overview

8.1 Introduction

This chapter presents the preparatory work required by the systems framework, as presented in Chapter 7. It contains the first part of the application of the systems framework to the case study. In doing so, it works towards addressing the following research question:

- How can a systems framework based on social autopoiesis be practically applied in a deeply rural community in a developing country?

Part I of the chapter deals with background and contextual information on the community representing the case study. Part II provides background and contextual information on the ICT4D project, or serving system. In Part III, the assumptions and simplifications that are made during the systems description and analysis are discussed.

In Part I, the description of the context commences with a general demographic overview of the community, using information collected by the researcher from third party sources as well as from community members. Following this, the history and current situation of two social systems of interest, namely the Zulu community and the Tugela Ferry mission, are discussed. These systems are of particular interest as ‘systems served’ by the ICT4D project in the case study. The studying of the two respective systems’ turmoiled and problematic pasts as well as historic successes assists with understanding how they came to be as they are. It also gives one a sense of what may be expected with regard to their futures.

Subsequent to the contextual descriptions, CATWOE descriptions are provided for both the Zulu and mission cultures, following Checkland (1999). These descriptions initiate the thinking towards a systems analysis, since it considers the questions of what the social systems are trying to achieve, who the important role-players are, and so forth.

In Part II, the ICT4D project is described in a similar manner as the two systems served, providing historical and contextual information as well as describing the activities of the project. A CATWOE description is subsequently provided.

In Part III, a number of modelling assumptions and simplifications are discussed. When moving from the real world to the abstract systems world, such simplifications are made to assist with focussing on key concepts and their interactions. There is subjectivity and judgement involved in the process, and the aim of the section is to provide the reader with some rationale as to how and why the choices to represent the investigated systems in a particular way are made.

8.1.1 Information collected

It might be expected that a background description will be done on the strength of a literature survey, whereas empirically collected information will form the basis of the analysis that follows. In this study, such a neat separation of background and empirical data is not possible. In the case of the mission, documented sources of its history and demographic context were either not freely available, or at times extremely subjective. Therefore the literature used is heavily supplemented with information collected from local people with a historical knowledge of the community, and again confirmed with other locals. Such triangulation may not remove subjectivity, but is believed to lead to a richer and more representative background description. The researcher's own field notes and interviews documented during field trips are used to enrich the background study. In the case of the Zulu and broader community description, sources with different origins, such as census data and the municipality's Integrated Development Programme, were used and on occasion confirmed with local experts, for example by confirming education figures with the local office of the Department of Education.

Part I: Background and context of the systems served

8.2 Demographic overview

The demographic overview is done to provide a general context of the social landscape in which the study takes place, before focusing on any particular systems. Census data from the 2001 South African census provides a point of departure. This is appended with information from the Msinga local municipality's Integrated Development Plan (IDP), the latest version as personally presented to the researcher by an official from the Msinga municipality (Respondent1) in July 2010.

The area under discussion falls under a dual leadership system. It is Zulu tribal area, as per the Traditional Leadership and Governance Framework Amendment Act of South Africa (41/2003). As such, it is part of the Zulu kingdom, with a hierarchy of tribal leaders under King Goodwill Zwelithini. The Msinga local municipality, which will be used as a unit of analysis, contains six traditional authority areas, namely Qamu, Mchunu, Bomvu, Ngome, Mabaso and Mthembu (Msinga Municipality, 2010). These areas each have a tribal chief. Tribal chiefs can allocate land, act as judges in tribal courts and make decisions concerning tribal matters. People living in this area are also South African citizens. The Msinga local municipality is an institution of the South African government, who governs on three levels, namely at national, provincial and municipal levels. The municipality has an official way of demarcating the area into wards, and any geographical point maps to a traditional leader's area as well as a municipal ward without the boundaries of the traditional areas and the wards necessarily corresponding. When making decisions concerning service delivery, such as building new roads, the municipality is meant to consult with the traditional leadership. According to informal conversations, this does happen in practice although the authority of the traditional leadership is apparently slowly being eroded.

8.2.1 Demographic data from the 2001 census

The Msinga local municipality is a rural area that includes the three small towns of Tugela Ferry, Pomeroy and Keate's Drift (Msinga Municipality, 2010). Msinga is located in the deep gorges of the Tugela and Buffalo rivers, which geographically isolates the municipal area. There is one tarred road that links the area with neighbouring towns.

Msinga is the unit of analysis for which demographic data is readily available, and the observed similarity between the three towns in Msinga municipality leads to the belief that Msinga data will be representative of Tugela Ferry, the focus of this study. The information that follows is obtained from the Statistics South Africa official web site. The data is from the 2001 census, the most recent that is available. The next official census was scheduled for October 2011 (Statistics South Africa, 2011), and that data is only expected to be made public towards the end of 2012.

The total population of Msinga is reported to be 168026. Of these, 99.8% are black Africans, and 99.2% have Zulu as their home language. 99.9% of the people were born in South Africa. To put this into context, the KwaZulu Natal province (the heartland of the Zulu nation) is reported to have 84.9% black Africans, 80.9% Zulu speaking people and 98.9% residents that

were born in South Africa. In South Africa overall, 23.8% of the almost 45 million people have Zulu as their home language, followed by Xhosa and Afrikaans. The population density in Msinga is given as 60 people per square kilometre, compared to 90 provincially and 30 nationally (the latter figure needs to be seen in the light that South Africa includes a few densely populated megacities, as well as desert and other arid areas that are scarcely populated).

The median age of the Msinga population falls in the 5 to 14 years age category, compared to the provincial and national medians that fall in the 15 to 34 age category. The sex ratio of 58% females is somewhat higher than provincial and national averages. Of the people who are aged 20 and older, 68% have received no schooling at all. Provincially and nationally, the majority of people who are 20 and older have received some secondary schooling or higher. The employment rate is 21.3% of the economically active population, compared to 51.2% for the province and 58.4% nationally.

The median household size of 4 people is comparable with provincial and national averages. Regarding dwelling types, 81% of households live in traditional dwellings, whereas formal housing dominates at provincial and national levels. In Msinga, 83.5% of households use wood as their primary energy source for cooking, and only 4.8% of households use electricity. Provincially and nationally, more than 50% of the respective households use electricity for cooking. The dominant energy source for lighting in Msinga is candles, used by 87.9% of households. Provincially and nationally, electricity dominates as lighting source. Regarding access to water, 58.7% of Msinga households have to fetch water from a river or stream. The remaining households mostly have access to shared boreholes or community water stands. Of provincial and national households, the overwhelming majority have piped water inside their house or yard. Regarding toilet facilities, 70.3% have no toilet facility at all, and 22.7% use pit latrines. Provincially and nationally, flush toilets dominate as toilet facilities. Regarding access to telephones, 71.7% of households in Msinga do have access to a telephone (as of 2001), although the majority do not have their own cell phone or land line. Provincially and nationally, the households with no access to phones form a much smaller minority than in Msinga. Table 8.1 below provides a comparative summary of Msinga municipality's demographic data.

	Msinga	Provincial	National
Black Africans as % of population	99.8 %	84.9 %	79.0 %
Zulu home language	99.2 %	80.9 %	23.8 %
Born in SA	99.9 %	99.0 %	97.7 %
Population density (people / km²)	60	90	30
Employment rate	21.3 %	51.2 %	58.4 %
Dominant adult literacy rate	Illiterate (68%)	Some Secondary schooling or higher (55.5%)	Some Secondary schooling or higher (59.7%)
Dominant dwelling type	Traditional (80.9%)	Formal (60.7%)	Formal (68.5%)
Dominant energy source for cooking	Wood (83.5%)	Electricity (48.3%)	Electricity (51.4%)
Dominant access to water	River or stream (58.7%)	Piped water in own yard (49.5%)	Piped water in own yard (61.3%)
Dominant toilet facility	None (70.3%)	Flush toilet (38.1%)	Flush toilet (49.1%)
Lighting source	Candles (87.9%)	Electricity (61.4%)	Electricity (69.7%)

Table 8.1: Comparative summary of selected demographic data for Msinga municipality

8.2.2 Reflection on census data

Population wise, the census data show an extremely homogeneous group of people living in Msinga, basically all Zulu-speaking South African natives. The homogeneity is exceptional even in a country where the most spoken home language is Zulu. The median population age is very young, compared to the rest of the country. The level of education among people of 20 years and older is extremely low, with more than two thirds of adults being illiterate. Only about one in five of those people who are economically active, have formal employment. Roughly four in five households live in traditional dwellings, use wood for cooking and candles for lighting. They also have to walk unknown distances to fetch water that is not sanitised for household purposes. The majority of households do not have access to toilets, but they do have access to telephones.

It needs to be noted that the concepts of ‘economically active’ and subsequently, ‘employment rate’ might be problematic in a deeply rural, subsistence livelihood context. The official definition of economically active refers to someone of employable age (15-65), who is either employed or actively seeking employment (Statistics South Africa, 2001). Someone of employable age involved in subsistence activities during the day, such as fetching wood and water, and tending to a vegetable or maize patch, is working but not employed in a western context. Such a person may be counted as self-employed, even if he/she cannot make ends meet and would prefer a regular source of income. If the person does not have schooling and/or lives in a remote area, there may be no feasible employment opportunities available. According to Statistics South Africa (2001), census data on employment rates in the subsistence agricultural sector may not be reliable. The implication is that people involved in subsistence activities may be counted as (self)employed while they view themselves as unemployed, and they are not actively seeking employment since there are no employment opportunities. In that case, the underlying employment in Msinga may be even lower than the official employment rate of one in five.

8.2.3 Information from Msinga local municipality

The Msinga local municipality has its own Integrated Development Plan (IDP). Each municipality in the country is meant to have an IDP, according to the Municipal Systems Act of South Africa (32/2000). According to the Msinga web site (Msinga Municipality, 2009), the IDP is meant as a strategic five year plan, “informed by the understanding of the needs of the area and tailor made strategic approaches to be adopted by the municipality”, and to be reviewed annually. The demographic data provided in the latest version of the Msinga IDP (Msinga Municipality, 2010) largely confirms census data found at Statistics South Africa (2001). Two different versions of the IDP, Msinga Municipality (2009) and Msinga Municipality (2010), are used in the discussion below, since they differ slightly in focus.

Priority issues identified by the Msinga Municipality (2010) are access to potable water, electrification, improved road infrastructure, addressing the HIV infection rate that is currently over 30%, low levels of economic development and high levels of unemployment.

Some of the education challenges are that most of the schools distributed in the area are in need of maintenance and that there are no tertiary education facilities in Msinga (Msinga Municipality, 2009). There is also difficulty experienced in attracting qualified teachers to this

area with its general lack of resources. According to a source at the Department of Education (Respondent2), only around 60% of teachers in Msinga have the required qualifications.

As mentioned, HIV/AIDS is one of the priority matters of concern of the Msinga Municipality. Currently, there is one hospital in Msinga, 13 distributed satellite clinics as well as 2 mobile clinics. The clinics provide primary health care. (Personal comment: it is perceived by the researcher that a large part of the task of the hospital and clinics relate to the administering of antiretrovirals and tuberculosis medication). Msinga Municipality (2009) mention a large number of orphans, the number being on the increase. The national Department of Welfare has an office in Tugela Ferry, with four welfare workers whose main task is organising foster care.

Regarding employment in Msinga, a member of the municipality (Respondent1) indicates that there are not enough employment opportunities in Tugela Ferry (the largest of the settlements) since there are no industries present. According to Msinga Municipality (2010), a major hindrance to development is the fact that developers are not able to acquire land inside the tribal area. Other hindrances to developers include lack of existing infrastructure, and low skills and income levels of residents. The largest sources of employment in Msinga are Provincial and National government departments and the informal sector. The informal sector consists of subsistence farming and small or micro enterprises (Msinga Municipality, 2010).

Economic opportunities identified in the IDP include increased commercial agriculture and eco-tourism. Most crop and stock farming is currently done at subsistence levels, but the available ground and water from the Tugela river provide potential for farming on much larger scale. Furthermore, the area is “endowed with beautiful scenery and topography that is suitable for eco-tourism” (Msinga Municipality, 2009) although this potential is currently untapped. The Municipality is currently facilitating the development of a game reserve at the junction of the two largest rivers in the area.

The Msinga Municipality is currently unable to collect any levies from people living in the largest town, Tugela Ferry, due to its location in a tribal area. Changes in legislation are underway, which will allow Tugela Ferry to be proclaimed as a town. According to Msinga Municipality, the envisaged tax income will provide a much needed funding source for ongoing development (Msinga Municipality, 2010).

8.2.4 Reflection on background information

The overall picture painted by the demographic data correlates well with personal observations and impressions. The Msinga local municipality in a sense endorses the census data by using it in their IDP. The demographic description of the previous paragraphs is thus held to be fairly representative of the Msinga, and hence Tugela Ferry, community. The Msinga local Municipality's IDP appears to address the most serious developmental challenges highlighted by the demographic data. When comparing different versions of the IDP, it is encouraging to see an increase in sophistication of analysis and planning, and also to see the latest IDP (Msinga Municipality, 2010) reporting progress on development plans announced in the earlier IDP.

8.2.5 Visual representation: Tugela Ferry

A visual representation of Tugela Ferry, with its town as focus, is provided in Figure 8.1 below. This picture indicates where much of the described action is taking place. However, it is not representative of the area or landscape at large – this is the hub of a deeply rural area consisting mostly of rocky hills that are populated with traditional dwellings.

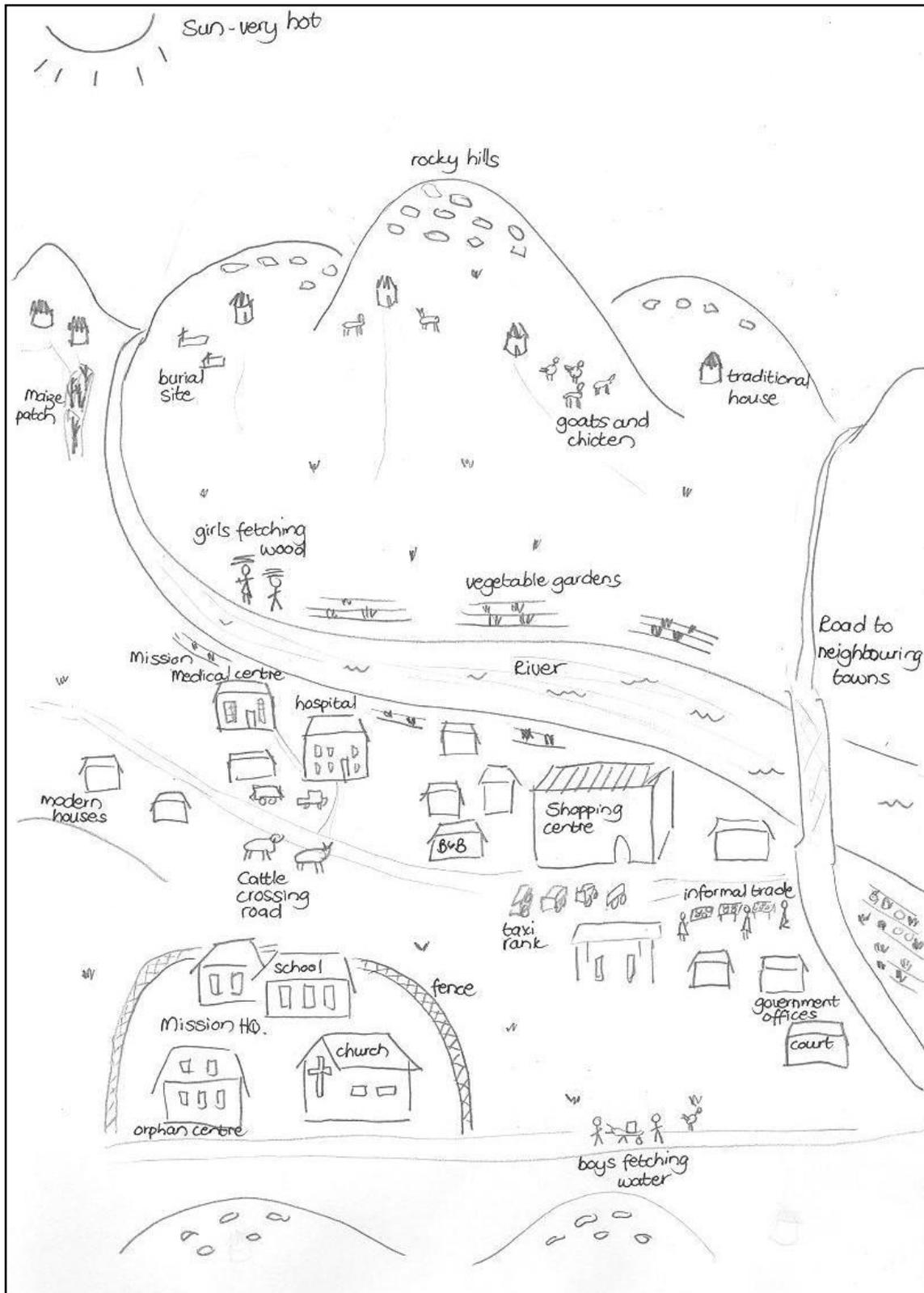


Figure 8.1: Visual representation of Tugela Ferry town

8.3 The Zulu community

The Zulu culture dominates in Tugela Ferry, as is evident from the demographic overview in the previous section. Census data indicates that 99.2% of people in the Msinga Municipality have Zulu as their home language. Msinga is Zulu tribal area and has a traditional leadership system. The geographical remoteness of the area has contributed to the preservation of traditional Zulu culture. The Zulu community is a 'system served' (Checkland and Holwell, 1998) by the ICT4D intervention in the case study. This means that the success of the ICT4D initiative is dependent on its effective engagement with the Zulu community. Moreover, the ICT4D initiative should be able to argue its contribution to the socio-economic development of the Zulu community. Both these criteria require background knowledge on the Zulu community and their socio-economic dynamics. Being a community of interest to the ICT4D project, it is a social system of focus in the case study. The Zulu history and current situation are consequently studied as specified in the pre-work section of the systems framework.

8.3.1 Historical overview

The present-day concerns of the Zulu nation are the result of a turmoiled history that is interwoven with the history of South Africa. The origins and recent influences on the Zulu nation are therefore studied in the South African context. The main source for the Zulu and accompanying South African history is a reference volume edited by Giliomee and Mbenga (2007). This reference presents a comprehensive and recently updated history incorporating the varying viewpoints of 31 co-authors. Giliomee and Mbenga also provide a contextualisation of events that has been found missing from some other sources considered.

The history of the Zulu people is summarised below from the time of the first Bantu arriving from the North, up to their situation in present day South Africa. Considering their history over such a long period assists in understanding their cultural origins as well as their current economic and socio-political situation.

8.3.1.1 Introduction: early farmer settlers

The first African farmers to have migrated down from the North, settled in Southern Africa in the third century (Giliomee and Mbenga, 2007: 22). These farmers, called the Bantu, are to be distinguished from the Khoi and San hunter-gatherers who dwelled in South Africa from a much earlier period. Written history about African farmers is only available after 1500, and archaeology as well as language studies are used to infer details concerning migration

patterns, farming practices and life styles. Farmers used to settle close to water sources with their livestock, namely cattle, sheep, goats and chicken. They planted grains, beans and wild vegetables. In contrast with the hunter-gatherers, African farmers' hunting was limited. Sea trade occurred infrequently between African settlements close to the South East coast, and traders from mainly Indonesia and Madagascar.

Social and cultural practices among the East Bantu grouping, from which the Zulu originated, included a patriarchal system with male lineage and leadership, polygamy, the use of cattle as lobola or bride-gift, and ancestral worship (Giliomee and Mbenga, 2007: 23; Magubane, 1998). They had a distinguishable arrangement of huts and kraals in the household, termed the Central Livestock Pattern. In the centre was the kraal for livestock as well as the gathering area of men. Females were in charge of the sleeping huts, and the multiple wives' huts were built in sequence in an outer circle. (Giliomee and Mbenga, *ibid.*). When Zulus established a separate culture, the arrangement became known as the umuzi, or extended homestead (Magubane, 1998: 38). The umuzi arrangement was also a social one: "a traditional Zulu umuzi was well regulated by strict etiquette and social discipline" (Magubane, 1998: 43). "A clear distinction was made on the basis of age, sex and rank" (p 45). Each age/gender grouping had duties, for example the young boys had to take the cattle to graze and the girls helped with chores such as fetching water. In the section that follows, the influence of Shaka's reign on the strict social arrangement is discussed.

The current Zulu are descendants of the language grouping known as the Northern Nguni, who initially settled close to the coast but later moved further inland in the direction of the Drakensberg. This move is ascribed to climate changes as well as tribal conflict at the time. Before the time of Shaka, the Northern Nguni lived as scattered, relatively independent farming chiefdoms. Besides sharing a language pattern and culture, there was no unifying element.

8.3.1.2 Shaka's reign and the unification of a Zulu kingdom

By the early 1800s, the area between the Drakensberg and the Indian Ocean was populated by over a hundred independent Nguni clans or chiefdoms. South African History Online (n.d.) is the main source for the piece that follows. Its authors acknowledge that some details of Shaka's history are based on oral sources. Shaka was born ca.1787 from the chief of a small clan, the Zulu. His parent's union was not socially accepted and he was brought up in neighbouring clans, where he made his mark as a promising young warrior. When his father

died in 1816, he went to claim the position of ruler of the Zulu clan. His warrior skills as well as his existing relationships with other clans assisted him in conquering surrounding clans. Clans were conquered either by submission or through serious war and bloodshed. Some clans fled from the region, causing a migration movement with major displacement and clashes elsewhere (part of a disruption termed the Mfecane). Shaka was building a new kingdom. Within this kingdom, a new, military, social system was put in place. Young men (the amabutho) were kept separate according to their age groups, in military regiments. They were taught new rules of combat under strict discipline. Shaka put in place a centralised government of the region, although individual clans could manage themselves locally under the authority of the kingdom.

Shaka's first interaction with white traders arriving in Port Natal was in 1824. He treated them well and allocated them land. He wanted to maintain good relations with the Cape colonial government and was interested in the white man's customs. Shaka was an undisputed and mighty ruler, but also cruel to his own people when they did not obey his wishes, leading to increasing resentment. In 1828, Shaka was assassinated by his half brother Dingane, who succeeded him as Zulu ruler. Shaka's influence on military strategy, social structure as well as the arrangement of huts in the household was significant. Much of what is currently viewed as Zulu culture emanates from the time of Shaka.

8.3.1.3 Colonising of the Zulu kingdom

In 1838, the Voortrekkers arrived in the Natal area with the intent to settle. Some murderous clashes followed between the Boers and the Zulus, led by Dingane (Encyclopædia Britannica, 2007; Giliomee and Mbenga, 2007: 146). Among these were the murder of Boer leader Piet Retief and the battle of Blood River. The clashes led to a civil war between Zulu leaders Dingane and Mpande, the latter allocating the Voortrekkers ground. Soon afterward, in 1843, the British annexed Natal but allowed sovereign reign of the Zulus. Civil war continued among the Zulus, until they settled under the reign of Cetshwayo. In 1879, the British decided to invade Zululand in order to assert increased control and to amalgamate colonial territories. The British lost a major battle at Isandlwana, but persevered using their superior resources and eventually annexed Zululand in 1887. During this period, the British started to take over the traditional Zulu government structure and imposed a hut tax, the latter being problematic in a subsistence livelihood arrangement. The Zulu's communal strength was severely weakened during this time (Giliomee and Mbenga, 2007: 165-168).

The discovery of gold and diamonds in the South African colonies in the late nineteenth century increased the motivation and hence the force with which Britain attempted to control the region, as well as the rest of South Africa, leading to the outbreak of the Anglo-Boer war in 1899-1902 (Giliomee and Mbenga, 2007: 158-164). The Zulus were not directly involved, although many skirmishes took place in Natal. Other results of gold and diamond mining were urbanisation and industrialisation, with a need for labour in the mining towns. Labourers were solicited from the now colonised black territories, causing a pattern of migration labour that became a social institution. Black men (including Zulus, many of whom could not afford the hut tax otherwise) travelled long distances to the towns to work and earn money, leaving their families behind and only visiting them a few times a year. Migrant labour had a disruptive effect on traditional family roles and structure. The women who stayed behind in those times were hard working but had no authority, and yet had to be accountable for all household and family matters (Giliomee and Mbenga, 2007: 206).

8.3.1.4 The twentieth century

After the Anglo Boer war, which ended in 1902, South Africa continued to be ruled by a white minority, the power struggle between Brit and Boer continuing over the decades, roughly as an English – Afrikaner divide (Giliomee and Mbenga, 2007: 186 onwards). The black majority's land ownership was confined to native reserves for the various tribes, amounting to 8% (later 13%) of the ground of the Union of South Africa that was proclaimed in 1910. Although many blacks were working in the cities, their stay in urban areas was regarded and managed as temporary. Racial apartheid was in place for most of the twentieth century, although it was more strongly enforced from the 1950s until the 1980s.

During the 1950s, the homeland system, also known as “grand” apartheid, was institutionalised. The Zulu homeland was hosted in the Natal province. On the map shown in Figure 8.2 (Giliomee and Mbenga, 2007: 324) it appears as a fragmented area, its fertile edges eaten away in the nineteenth century by white settlers. The area was relatively densely populated. Zulus were allowed their own traditional leadership structure, although tribal chiefs had to report to the South African government. Prior to 1953, Zulus had the benefit of independent mission education. Thereafter, it was taken over by government with little concern for the local context, leaving homeland education worse off than before. Little or no industrial development ever took place in the area, there was no mineral wealth, and the rocky hills and mountains did not make for fertile farmland. The majority of economically active males lived and worked away from home. In contrast to the economically booming urban and

industrial areas in the country, the homelands with their subsistence livelihoods stagnated or became worse off. In the height of the struggle period (1970s to early 1990s) tribal faction fights increased, further weakening Zulu strength.

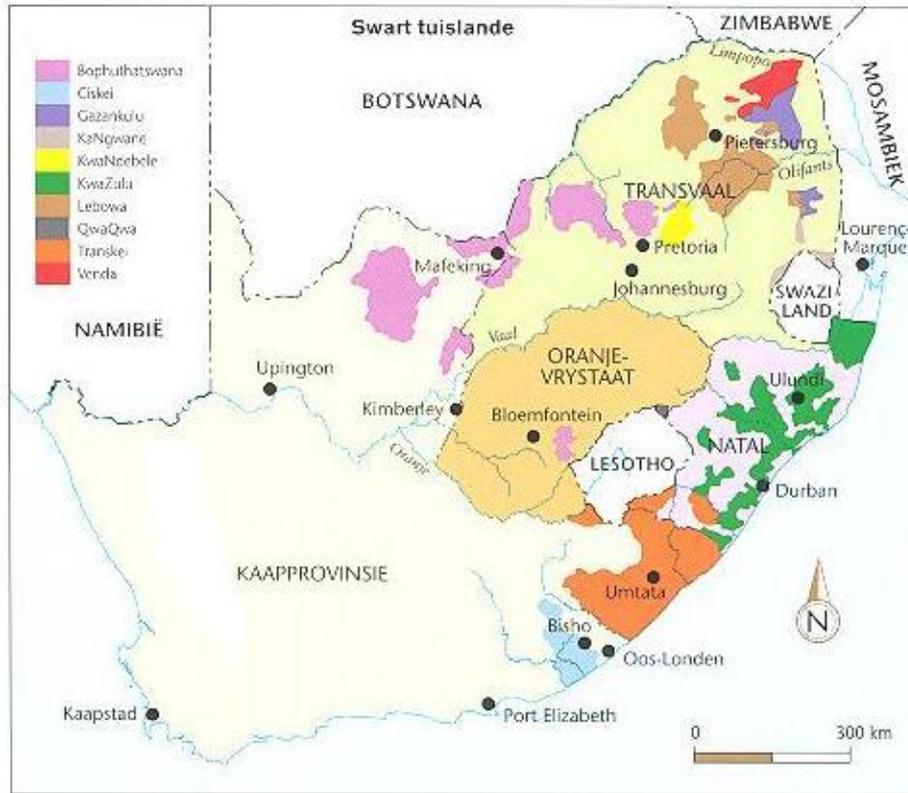


Figure 8.2: Map of South Africa’s homelands in the 1950s
 (Giliomee and Mbenga, 2007: 324)

The new government of 1994 acknowledged the Zulu tribal land ownership and accompanying traditional leadership system, although the Zulu king has a symbolic rather than executive role (Magubane, 1998: 37). At the same time, the government is investing in infrastructure, health, education and administration of towns in these areas. During the 1990s, social welfare grants were instituted for the elderly, disabled and children of needy parents. The latter helped to soften the socio-economic blow of the impact of HIV/AIDS, as well as the decreased employment opportunities for Zulu men because of a downturn in mining activity and smaller need for manual labourers in the cities.

8.3.1.5 Current situation

The historical situation of the Zulus, including the people from the Msinga district, provides a backdrop against which to explain the current demographic situation in Msinga, as discussed in a previous section of this chapter.

The rural Zulu livelihood saw little external social intervention during the homeland times, and still receives limited social influence from outside while land can only be owned by the Traditional Authority's Ingonyama Trust (Msinga Municipality, 2010), on behalf of the Zulus. These isolating factors have led to the relative preservation of Zulu tradition and culture. The overall lack of transport and communication infrastructure assists to retain the status quo.

What has remained in tribal areas of Zulu culture? The East Bantu social practices of a patriarchal system, polygamy, the use of cattle as lobola or bride-gift and ancestral worship are still traditional Zulu practices. The amabutho age grouping system is an example of Shaka's influence that can still be observed, socially rather than in a military context. There is some clan association, visible as surname families: particular groupings of surnames go together and is thus used to socially place a person, although in a familial relation rather than class context. Further details of current social organisation will be dealt with when the Zulu social system is analysed in a following chapter, by means of the devised systems framework.

8.3.2 Discussion: Zulu community

Despite the fast changing international and national environment and existing social influences, the Zulus remain a homogeneous group who manage to maintain their social practices and culture – probably due to their geographical isolation, limited mobility and poverty, which limits options and general access to information. On political and economic fronts, things are problematic. Politically, the tribal leadership system is slowly being eroded. Tribal leaders have social standing, but the development budgets are controlled by the South African government, members of whom may be quite distanced from, and hence unsympathetic towards tribal social structures. As such, government institutions do not necessarily liaise with traditional structures when making decisions that will affect the Zulu community. At the same time, the current land ownership system that prohibits non Zulus from owning property in the tribal area appears to be a structural barrier to economic development, as implied in the Msinga municipality's IDP (Msinga Municipality, 2009). Economically speaking, the Zulu community in Msinga is in dire straits. The historic mode of

subsistence farming has, since the late nineteenth century, not been sustainable within the geographic and other limitations that were imposed by colonial and later apartheid governments. In addition, the traditional, rural livelihood setup is not geared towards generating money, a necessary condition for interaction with the containing western capitalist environment. Furthermore, the proportion of the population who are economically active is being reduced because of HIV/AIDS. The number of ill people and orphans are placing economic pressure on a community who can barely afford it. The population overall is increasingly dependent on the social grant system.

8.4 The Tugela Ferry mission

The Tugela Ferry mission is the second social system of significance to the ICT4D project. The ICT4D project has been planned in cooperation with the mission, the latter who identified a need for their various employees and care workers to receive computer training. Almost all of the people who have attended computer training (including but not limited to mission workers) are Zulu speaking. The ICT4D team required cultural facilitation when engaging with Zulu trainees and a few key individuals at the mission assisted with the facilitation. The mission is accordingly not only a 'system served', but also an entry point for the ICT4D team into the larger system served, namely the Zulu community, who are also the ultimate clients of the mission. The mission, of whom the majority of members are Zulu speaking, is studied as a separate social system, because of their distinguishing set of cultural practices. Figure 8.3 indicates how the two communities overlap, compared with the way they are studied as social systems. The choice of social systems is further discussed and motivated under the section dealing with assumptions and generalisations below.

The historical overview of the mission starts with a general overview of mission life in KwaZulu Natal during the nineteenth century, when missions in this area were established, shaped and most active. From here, the focus moves to the particular German mission movement that formed the foundation of the Tugela Ferry mission, and the revivals, turmoil, changes and recent influences that have evolved the mission to where it is today. The historical overview is followed by a summary of current mission activities at Tugela Ferry, as well as a reflection on the status quo.

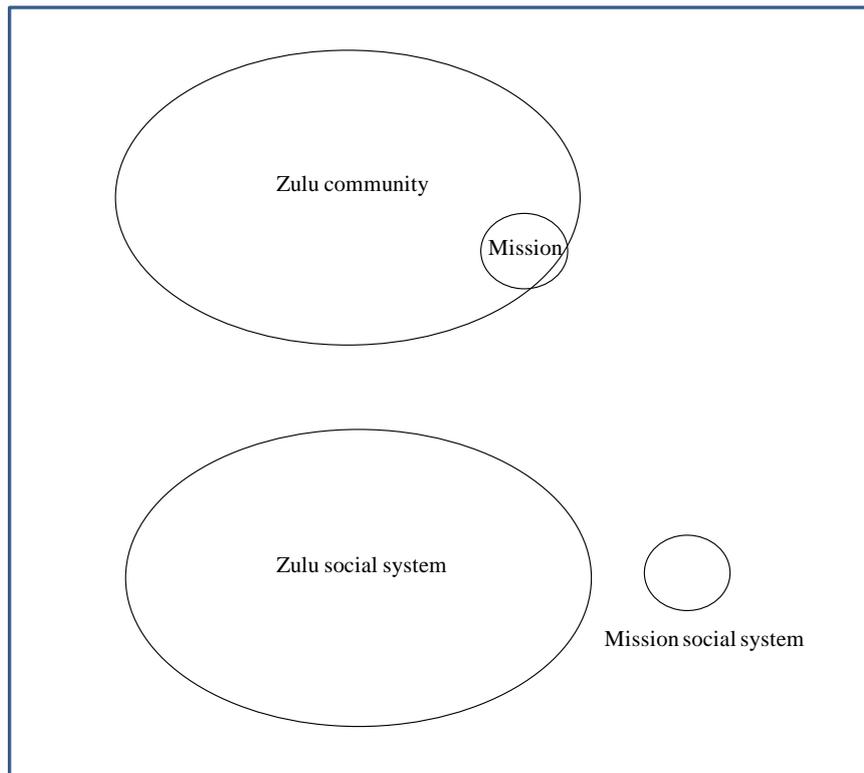


Figure 8.3: The Zulu and mission social systems

8.4.1 Historical overview

8.4.1.1 Christian missions in South Africa

During the nineteenth century, numerous Christian missions were established in Southern Africa, in particular in ‘native areas’ such as Zululand. The most prominent missionary presences in the Natal vicinity were Presbyterian and Congregationalist Americans from New England, Lutheran Germans from Hermannsburg, Anglicans and Methodists from England, and a Catholic grouping from France (Etherington, 1977). The different mission groupings came with very diverse approaches and mindsets, but “African needs and colonial government so shaped mission communities that after fifty years of evangelisation there were few discernible differences in the operations of the various missionary societies” (Etherington, 1977: 35). For example, the security of the preachers as well as their converts necessitated the formation of residential mission stations. A further commonality observed among the missions was the motivation of northern Nguni to join a mission station: an analysis by Etherington (ibid.) of archival records indicates that only 12% of converts had a religious motivation; the remainder came for reasons such as seeking employment, seeking refuge or a place to stay. Etherington argues that the differentiation between life within and

outside mission stations grew so large that missionaries and their converts became, to an extent, socially isolated from the larger community. This became a barrier to the spreading and diffusion of Christianity among the locals.

One real distinction between missionaries was between those from England and the non-English. The Methodists and Anglicans from England tended to cooperate with the British colonial government. In return for furthering colonial aims and acting as “field officers” for the colonial administration, they received special favours for themselves and their converts. On the other hand, most non-British missions, such as the Germans, acted as agents to promote Zulu independence (Etherington, 1977: 36).

Towards the end of the nineteenth century, there were only a few thousand northern Nguni converts to show among the missions in total, despite all their efforts (Etherington, 1977: 35). The real contribution of missionaries appears to have been not so much the conversion of locals, but rather the establishment and transfer of farming skills, the setting up of mission schools and the use of Western medication and health principles (Giliomee and Mbenga, 2007: 99). This may contradict Etherington’s claim of the social isolation of the mission stations, except if the mission people lived separately but indeed laboured among the local people.

8.4.1.2 European origins of the Tugela Ferry mission

With this backdrop to mission origins and influences in KwaZulu Natal, the focus moves to the origins of the Tugela Ferry mission, which can be traced back to a spiritual revival in northern Germany in the 1840s (Kitshoff and Basson, 1985). The evangelical Lutheran church in Hermannsburg, where the revival was experienced, set up a substantial mission initiative. Among others, a ship was built to transport willing missionaries to Africa. During its first voyage in 1853, the ship headed for East Africa, but the eight missionaries on board ended up in Natal, South Africa, where they received a friendly welcome from an existing, small, German community. The group of missionaries settled in the area currently known as the KwaZulu Natal midlands. The work of the missionary initiative in Germany continued and expanded in this region. By the end of the nineteenth century, there were 20 mission stations, 33 satellite stations and 80 preaching stations where the Germans worked among the Zulus (Kitshoff and Basson, 1985: 4). The German community expanded as more Germans arrived to set up farms in the vicinity of the missions, often supporting the mission work. These Germans usually attended and were influenced by the same Lutheran mission church as the

one operating amongst the Zulus. The German community associated with the mission was known for what Greeff (2003) calls their “pragmatism”, meaning that they were highly capable in the practical execution of their endeavours. Not only did they send farmers along with the missionaries, they also sent volunteering females to be companions and brides to the missionaries and farmers. The farmers appeared to be quite successful, skilled in the craftsmanship required for the various farming activities, skilled in managing a business, and with a strong work ethic. As such, these communities thrived and the missionaries had a strong support basis.

8.4.1.3 Local roots

During the 1960s, another spiritual revival was experienced locally in KwaZulu Natal, led by a German missionary born from South African farmer settlers. As part of the revival, a new mission station was set up on the border between South African and Zulu homeland ground, so as to make the location equally accessible to white people and Zulus from the tribal area, since the Zulus’ movement was restricted outside the apartheid Zulu homeland and the white people’s movement restricted within the homeland (Greeff, 2003). The congregation for this new mission grew quickly in what appeared to be a strong revival (Kitshoff and Basson, 1985). The mission soon set up various education institutions, such as a boarding school, teacher education college and adult education centre. It also launched several business initiatives, such as a commercial dairy. By Greeff’s (2003: 22) account, the mission’s initiatives were examples of successful German pragmatism. By the early 1990s, the mission consisted of about 250 full time workers, including volunteers. Their congregation and supporters were estimated at 40000, with satellite branches as far as Europe and Australia. The Tugela Ferry mission, which is the focus of this study, originated as a satellite branch. During the later 1990s, the mother mission went through a period where it was hurt by internal politics and lost individual members as well as some of the satellite branches collectively (Greeff, 2003). The mother mission still operates today and appears to be a spiritual retreat for people who want to withdraw from the secular world.

A notable point about the mother mission and its satellites was that in the height of apartheid times in South Africa, no apartheid was practised here. The mission “...was a rather strange place for we had very little or no apartheid at all” (Greeff, n.d.) The mission was stated to have good relations with the Zulu community, even through times when the KwaZulu Natal province was troubled with political violence among Zulu factions, a situation related to the problematic South African political situation of the late 1980s. The predominantly German

speaking, white people and the Zulu speaking, black Africans at the mission formed an integrated community up to the top management of the mission. The long term benefit of this was that in later years, the relationship between the mission and the surrounding Zulu community did not suffer from inter-racial baggage, as will be referred to again later.

8.4.1.4 Independence

The current Tugela Ferry mission started in the 1960s as a satellite branch of the above mentioned mission. The church building at Tugela Ferry was erected in 1994. It operated as a satellite branch until 2000, when they broke away from the mother mission to become an independent ministry.

The Tugela Ferry mission still holds strong ties with the German mission movement in Europe, although there are currently no Germans who are prominent or in key positions in the Tugela Ferry church, apart from a few volunteer workers from Germany. The church appears to be democratically run by its Zulu leadership, assisted by a handful of Afrikaans-speaking South Africans. Sunday church services are attended by around 600 people at the main church building, plus smaller numbers of people at the 6 satellite branches that are distributed through the rural area (Respondent3, verified by Respondent4).

Soon after they became independent, a Bible School was established at Tugela Ferry (Respondent5). The aim of this school was to educate the congregation in the biblical principles that were needed to guide their daily living and decision-making. The Bible School addressed a need that was identified in the newly independent mission, namely for people to engage with and interpret the values of the Bible themselves, something they were not used to doing. The researcher personally experienced this culture of interpreting the Bible into broader principles. At a prayer meeting attended in July 2010, the pastor discussed the issue of whether women should only wear dresses and skirts. No rules were laid down, but a number of scripture-based and other normative arguments were presented to persuade all members, female, male and youth, to dress conservatively and be mindful of what they communicate with their clothes in the particular (Zulu) culture.

8.4.2 Current activities

The Tugela Ferry mission may be relatively small in numbers, but their influence is widely felt in the region (Respondent2), in particular through mission associated institutions. Amongst these are the mission school, a medical and social services centre and an orphan care

centre. These institutions will be discussed below. Although this description forms part of a background section, most of the information that follows was collected in the field, as it was not readily available in written format.

8.4.2.1 The mission school

The mission school was established to provide bible-based as well as quality education to the children of the congregation. Information from someone involved in the school since its inception in the early 1990s (Respondent5), indicates that the first grounding principle of the school is a normative one. The biblical principles and way of living taught at the mission differ so vastly from the traditional Zulu lifestyle that separating the children from their surroundings during school time makes it easier to reinforce the Christian value system.

Another grounding principle is quality education. The school currently hosts just over 100 children, from preschool to grade 12. They have maintained a 100% matric (final year) pass rate every year since 2001, the first year that they had a matric group. In comparison, the KwaZulu Natal provincial pass rate at the end of 2009 was 61.1% (Department of Basic Education, 2010). The school receives regular awards for outstanding achievement, having the best results in the municipal district. As evidence, the headmistress has a table in her office filled with trophies and awards received by the school. The majority of its school leavers continue their studies at university, an exceptional achievement for a rural school in a disadvantaged area. Grade 11 learners are annually taken on a university tour, visiting a selection of top South African universities. During these trips, they receive career guidance, have the opportunity to visit academic departments of their interest and receive information about application procedures and study funds. Knowledge of funding mechanisms, such as bursaries and loans, is especially important, since these students' families do not have the financial means to support them at university. For the majority of learners, this is their first trip outside their own province, and signifies the bridging of an immense gap between their isolated rural livelihood and exposure to internationally recognised, further education opportunities. Compared with the general demographic situation provided above regarding education in the district, it is clear that the mission school is an outlier with respect to its activities and achievements. Educators at the school receive a small salary compared to what qualified teachers receive at neighbouring government schools, and the success of the learners is an indication of teacher motivation that is not monetary.

From the above, it is clear that the school's aim of quality education is achieved. The first grounding principle, the provision of a normative value system, follows from empirically collected information that will be discussed further in the systems analysis section.

8.4.2.2 Medical and social services centre

The health-related arm of the mission focuses on the medical treatment and continued care-taking of AIDS and Tuberculosis (TB) patients, volunteer nursing and social welfare work in the broader community. Their philosophy is one of holistic care-giving. Successful administering of antiretrovirals and TB medication requires a strict adherence to medication schedules, as well as healthy dietary and lifestyle practices, and these are all promoted. The hospice facility hosts AIDS and TB patients who are too weak to survive on their own, and whom the neighbouring state hospital does not have resources to help any further. These patients receive specialised medical treatment, and 80% of them are reported to leave the hospice able to continue with their lives, provided that they follow a strict regime of frequent medication, regular meals, basic hygiene and well ventilated housing (Respondent5). Home-based care is provided, mostly by volunteer nursing assistants from the community, who visit these patients regularly to ensure they follow the required practises.

The centre also has a social welfare worker who visits families reported to be particularly needy, where for example the parents are not mentally capable of raising their children without assistance. The involvement of the social worker is wide ranging. If, for example, a poor family qualifies for a child grant from the Department of Social Welfare, the social worker will first assist with the registering of the children's births at the Department of Home Affairs, since such children typically do not have birth certificates. Birth dates are estimated in consultation with the illiterate parents. The birth certificates are used to apply for child grants, intended to help poor parents pay for their children's living expenses. They are then in a better position to send their children to school. Again, the social worker needs to interact with the local school to ensure that the children start attending school regularly.

The government's Department of Social Welfare also has an office in the district, but the enormous need in the community means that their reach is limited to only a small portion of people needing it.

Whereas the mission school focuses on the congregation members' children as their client base, the medical and social services centre is open to assist any member of the community.

8.4.2.3 Orphan care centre

The orphan care centre's focus is on the large number of orphans in the community, resulting from the toll of AIDS on the parents of young children. The person heading up the centre (Respondent5) is proud to state that there are no "street children" in the town of Tugela Ferry. Extensive care is taken to ensure that every orphan in the vicinity is placed with family or in foster care. In order to reduce the burden on impoverished families taking in additional children, a feeding scheme was introduced. The scheme delivers food parcels on a monthly basis, currently to around 600 families caring for orphans. Since a number of the orphans are on antiretroviral medication, it also helps to ensure that they receive the regular meals required by the medication programme.

Some orphans cannot, for various reasons, be placed and a live-in care centre has been established for them. The care centre hosts about 15 children at a time. Another problem identified in the community is that of child-headed households. The care-giving burden on older children often means that they do not have the freedom to attend school and give attention to their studies at home. The orphan centre is in the process of establishing a number of geographically distributed day care centres to look after the younger siblings while the older ones attend school. School going siblings will be provided with homework facilities as well as a meal in the afternoons.

As with the medical and social services centre, the orphan care centre assists with orphan related matters in the community at large.

8.4.3 Reflection: mission community

The mission has an interesting history of living alongside the Zulus. From the original German mission, it has inherited high skills levels, a strong work ethic, and a strict value system. The current mission has a strong service motive, realising that they show themselves through their sustained deeds rather than what they say (Respondent3). In conversations with people from outside the mission (Respondent2), it is clear that the mission has made a name for itself through the sustained and well-organised care giving functions of its institutions, within the wider community.

Their value system is uncompromising, and provides a clearly defined alternative to the ancestral belief system and the aspects of traditional Zulu practices that the mission views as

incompatible with biblical belief. However, there is a deep respect for Zulus and their social practices overall. The mission provides a haven for members who have committed themselves to a different lifestyle, as well as for local and international volunteer workers who frequent the mission and in this way create meaning in their own lives.

Similarities with descriptions of historical missions of the nineteenth century can be observed. Of the Zulu population of nearly 200 000 in the Msinga local municipality, only a few thousand are members of the Tugela Ferry mission; thus, the number of converts remain low. The residential mission station is fenced off with a security guard, and the mission school inside is evidence of a deliberate attempt to separate the congregation children from the general community so that the radically different value system of the mission can be entrenched there. Like the missions in the nineteenth century, the real influence of the Tugela Ferry mission is not so much in the number of Zulu converts, but rather in their education, health care and outreach programmes.

8.5 Rich picture of current situation

Checkland (1999) suggests the drawing of a rich picture as a means to summarise a situation before proceeding to analyse it. Figure 8.4 below presents a rich picture representation of the communities studied in Msinga. It attempts to convey something of the overall demographic context, as well as the traditional Zulu and mission communities. The drawing on the traditional hut presents the situation of the 80% sector of the community that is very poor, as indicated by the census data as well as personal observation by the researcher. The part in the door of the hut represents the more affluent 20% of the community. The mission church and buildings are located in the same geographical area as the more affluent sector of the community. The picture is not comprehensive – it is a concise summary of the researcher's impression. Checkland (1999: 165) advocates for developing “the richest picture possible” as the first step in expressing a problem situation. In this study, the verbal background description of the community presented in this chapter aims to contribute to a rich picture. While the demographical overview is done for the entire community, the background studies of the Zulu and mission communities are done for two pre-selected social systems of interest, and as such are rich pictures only for those two systems.

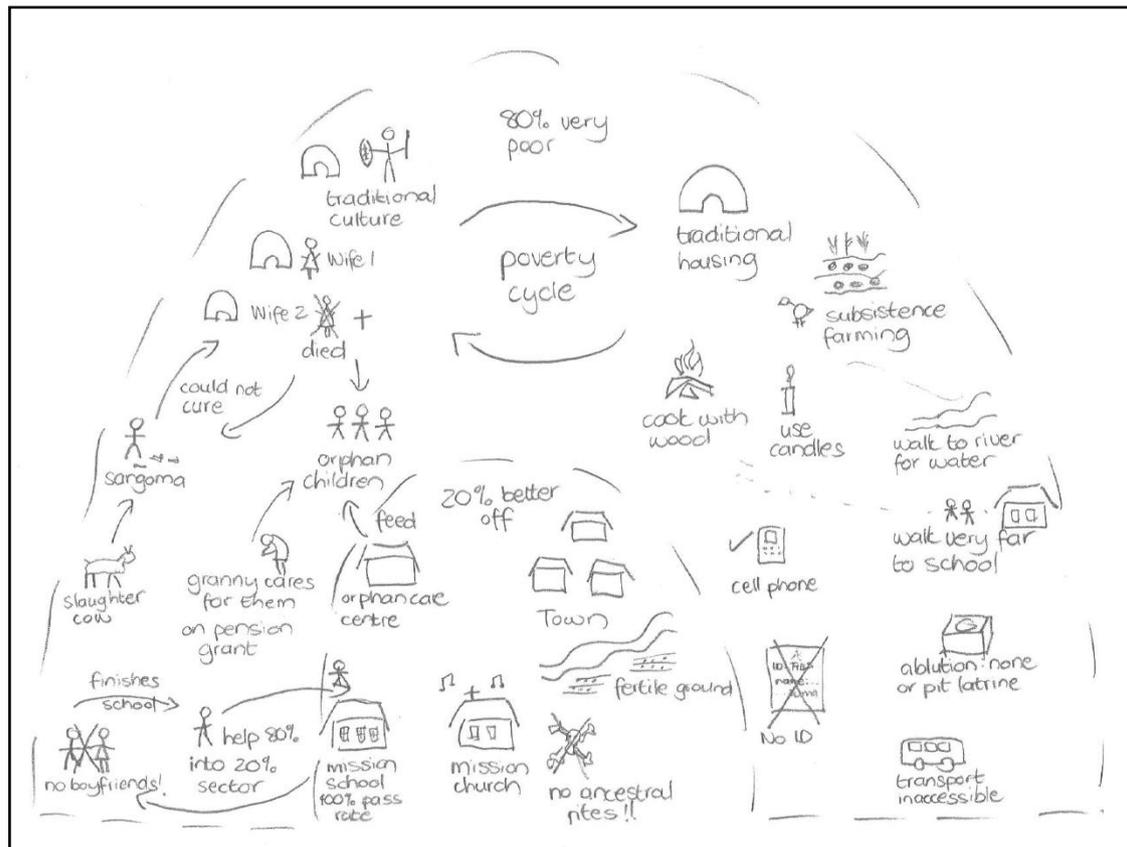


Figure 8.4: Rich picture of Zulu and mission communities in Msinga

8.6 CATWOE descriptions

In Checkland’s Soft Systems Methodology (SSM), a general summary of a problem situation is followed by the selection of a number of possible views on the situation, each of which is expanded into a “root definition” (Checkland 1999: 223). This root definition is summarised by the mnemonic CATWOE, as explained in Section 4.5.1, in the overview of SSM. The root definition is an in-between step, following the problem summary and informing a systems modelling exercise. It is informed by the general background description, and thus could be regarded as part of the problem formulation, as per Daellenbach and McNickle (2005: 176). However, it already requires some degree of analysis. For example, it forces one to surface assumptions about what is required by the system (Environmental constraints) and to categorise role-players according to their influence or association, as Owners, Customers or Actors. “Asking these questions, based directly on the CATWOE elements, itself opens up the analysis...” (Checkland 1999: 226)

The CATWOE description is therefore seen as a useful step following a background summary and as an aid to define a system of focus, before proceeding to analyse or model it. Since the two selected systems of focus are the Zulu and mission social systems, a CATWOE description will be provided for the communities associated with each. As is the case with all system related descriptions (see following section on Assumptions), these are to some extent simplified or “ideal type” descriptions, but attempting to reflect reality. Please refer to section 4.5.1.2 for an explanation of the CATWOE terms.

8.6.1 CATWOE description of Zulu community

Customers:	Zulus residing in the area (>99% of residents)
Actors:	Zulu residents within local municipality Local tribal chief, plus his group of elders Government (all levels) that interact with Zulu community Prominent businesses, as employers and influential actors
Transformation:	Short term: survival, in the face of poverty, AIDS etc Enact and maintain Zulu identity and culture Ensure continuing future of Zulu tribe, and the furthering of tribal interests Adapt to changing circumstances
World view:	Traditional Zulu collectivist culture, social norms and religious views Small western capitalist influence
Owners:	Zulu traditional leader structure: king, tribal chiefs, indoenas Government, who can override traditional structure
Environmental constraints:	Authority of tribal leadership system Increasing influence of government, with developmental rather than traditional interests Livelihood constraints (poverty, lack of marketable skills, HIV/AIDS, TB, orphans) threatening traditional subsistence livelihood

8.6.2 CATWOE description of mission community

Customers:	Members of congregation Broadly, all people in the area where the mission operates
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- Actors: Head pastor, who is the leader of the mission church and also an influential
 businessman
 Other pastors
 Leaders of institutions e.g. orphan care centre, school, medical centre
 All active members, assisting with Transformation
 Donors and benefactors
- Transformation: Converting people to Christianity
 Spiritual, emotional and physical care giving
 Promoting mission value system
- World view: Converting people by means of their deeds and lived example
 Particular version of Christianity preached by mission church
 Strong practice based value system associated with the above
- Owners: Head pastor, in terms of spiritual, individual and financial influence
 Church leadership: group of pastors and elders
- Environmental constraints (assumptions):
 Harmonious relationship with Zulu community at large
 Blessing of tribal chief, required for continued activities
 Availability of volunteers and people receiving a calling to work at mission
 Funding or donations to sustain projects

Herewith the background and contextual description of the social community of Tugela Ferry at large, as well as the two social systems served, are concluded. In Part II of Chapter 8 that follows, a similar contextual description is done for the serving system, which is the ICT4D project.

Part II: The serving system

8.7 Contextual background on the ICT4D project

8.7.1 Introduction

In this case study, the ‘serving system’ is a project team from the Department of Informatics, University of Pretoria. As with the ‘systems served’, a short historical context is provided. Following this, the current ICT4D project is described. Two CATWOE descriptions are provided, one for the short-term training initiative by the ‘serving system’, and another for the longer-term initiative of assisting with the establishment of a local training centre.

8.7.2 Historical context

The Department of Informatics at the University of Pretoria (UP) has a historical profile of interest and involvement in ICT4D. One of their key initiatives in this regard has been a partnership with the Siyabuswa Educational Improvement and Development Trust (SEIDET). SEIDET was founded in 1992 in a rural area about 130 km North East of Pretoria, in the Mpumalanga province (Phahlamohlaka and Friend, 2004). SEIDET was established to provide supplementary mathematics and science education to historically disadvantaged high school learners. SEIDET is a community initiative and run by volunteers, although a number of non-local stakeholders have been enrolled as contributing partners. One of these partners has been the Informatics Department at UP. The Informatics Department assisted with the setting up of a computer centre at Siyabuswa in 1998, and with providing IT literacy training. The Department has in turn benefitted from a number of students who were able to complete their honours, Masters and PhD research as part of joint projects with SEIDET. Many of the current faculty members of the Informatics Department have been involved with SEIDET in some way or another. Current involvement is low, but the SEIDET trust itself is still active and remains a benchmark example of a locally initiated, successful socio-economic development initiative.

Other ICT4D research at the Informatics Department includes Health Information Systems (e.g. Byrne and Sahay, 2007), e-government (e.g. Twinomurinzi and Ghartey-Tagoe, 2011) and ICT in education research (e.g. Fourie and Krauss, 2011). A new ICT4D development is the national e-skills institute that the Informatics Department is setting up on behalf of the

government's Department of Communication. Of the past and current ICT4D initiatives of the Informatics Department, SEIDET remains the initiative that has seen the largest number of research projects and associated publications. Research outputs related to SEIDET are estimated at 20 (including De Villiers and Scheepers, 2000; Phahlamohlaka and Lotriet, 2002; Phahlamohlaka and Friend, 2004; Phahlamohlaka et al., 2008).

The Tugela Ferry project to be introduced below is, apart from SEIDET, the Informatics Department's only other multi-year ICT4D partnership that has a reciprocal relationship and multiple research projects in progress. However, the earlier SEIDET experience never directly affected the establishment of the ICT4D project at Tugela Ferry. The Tugela Ferry project was initiated shortly after a new lecturer with historical ties at Tugela Ferry joined the faculty of the Informatics Department in 2008. The lecturer, Kirstin Krauss, had close personal ties with the mission staff at Tugela Ferry and was familiar with the settlement and their socio-economic challenges. Krauss became aware of the ICT4D research at UP, and invited a representative from Tugela Ferry to present an overview of the mission's work to the UP faculty. The visit took place in August 2008. The representative included as part of her talk the ICT training and infrastructural needs of the mission. Some of the UP faculty became enthusiastic about possible involvement in Tugela Ferry. The UP Head of Department approved a reconnaissance visit to Tugela Ferry, which took place in February 2009. This researcher formed part of the first group of four UP staff members to visit Tugela Ferry. She realised that a Tugela Ferry ICT4D project, still to be formulated at that stage, would provide a personally meaningful, socio-economically relevant and academically interesting research setting.

During the February 2009 visit, the UP team had interviews with respective people from the mission's school, medical centre and orphan care centre. This visit assisted with the scoping of UP's Tugela Ferry ICT4D project. After the visit, the research team, led by Krauss, started to search for project funding. The team was fortunate to obtain funding from UNESCO for the first phase of the planned ICT literacy training project. In liaison with the mission staff, the first training sessions were scheduled for July 2009.

8.7.3 The Tugela Ferry ICT4D project

8.7.3.1 Establishing community entry

The establishment of a relationship with key stakeholders at the Tugela Ferry community was far from self-evident. Although the UP project leader had personal ties at the mission, these ties were with Afrikaans speaking people and not with the key Zulu stakeholders that needed to, by themselves, express an interest in ICT training for their staff. The UP project leader, sensitised by a friend at the mission who acted as cultural interpreter, had to wait for an invitation from the head of a mission institution. It was important that the local community considered the training project to be initiated and managed by themselves. The UP project leader was patient as well as persistent, and continued to give the head of the institution regular courtesy telephone calls, without ever forcing himself or the intended project on the person. His patience was rewarded when, after some time, he received a phone call with a request for training, and associated terms of reference. This signalled the first of a number of ICT4D initiatives in the community, each requiring cultural sensitivity and similar persistence. The above is an oversimplified version of the process of community entry at Tugela Ferry, the details of which form part of the PhD of Krauss, the UP project leader, currently in progress.

8.7.3.2 The first series of IT literacy courses

During the July 2009 winter school holidays, three IT literacy courses were presented at the Tugela Ferry mission, at the computer centre of the mission school (Department of Informatics, 2009). The computer centre was established by the school shortly before, when they received 10 personal computers from the Department of Education as an award for excellent academic performance.

The first two IT literacy courses each took the format of a five day course that covered introductions to Microsoft Word and Microsoft Excel. In total, 24 people completed the Word and Excel courses. Of these, the majority were teachers. Also included in the 24 people were a handful of mission workers who were keen to develop their computer literacy. The course presenters were two faculty members of the University of Pretoria's Informatics Department, assisted by a colleague from the University of KwaZulu Natal.

The third course was aimed at basic computer appreciation for semi-literate mission staff and community members. It was presented more informally, in the afternoons after work, over a

period of two weeks. The presenter was a Zulu speaking colleague from the University of KwaZulu Natal. Five people associated with the mission completed this training.

Parallel to the second teacher training course, the most promising candidates that completed the first course received train-the-trainer instruction (Department of Informatics, *ibid.*). These candidates, mostly teachers, also helped to train the semi-literate course attendants, further assisting them in Zulu.

The majority of the people who attended training in July 2009 were school teachers. The word processing component of the training was meant to assist them in, among others, setting up question and papers in a professionally presented format. The spreadsheet training was meant to assist them in record-keeping and the processing of marks. The assignments for the first two courses were developed around such real-life applications.

Based on the success and feedback received from the first series of IT literacy training courses, another 10 people associated with the mission received MS Word and Excel training in April 2010, presented by the Informatics Department, UP.

8.7.3.3 Courses presented in partnership with the first trainees

One of the needs identified by the mission was IT literacy training for nurses at the mission medical centre. The nurses had a large administrative component to their work. The medication regime for the numerous TB and HIV/AIDS patients had to be meticulously recorded, not only for the benefit of the patients but also for the sake of ongoing multinational research projects based at the medical centre. As such, the nurses could greatly benefit from tools such as spreadsheet software.

The first part of the nurses' computer training was done by some of the newly trained teachers, after having received additional train-the-trainer instruction during a visit by the UP project leader in August 2009 (Department of Informatics, 2009). The UP team returned again later, to do final revision with the nurses, as well as course assessment and certification. The UP certified courses could only be assessed by UP staff members and not by local trainers. Ten nurses completed the IT literacy training, doing their MS Word exams in November 2009 and their Excel exams in July 2010.

Another round of IT literacy training was done at the mission school during the June/July 2010 school holidays, mainly for the teachers, and at their request focusing on presentation skills and Microsoft Powerpoint. Eight people attended a two day training course that was not formally assessed. Some of the previously trained teachers again assisted in presenting this course.

8.7.3.4 Financial and other resource constraints

The University team started to realise that the time, travel and cost involved for them to present training was not sustainable in the long run. They had to travel about 600 km from Pretoria every time along badly maintained roads, and had to incur costs associated with time away from work and home, travelling, accommodation and meals as well as the certification of the courses. The mission's own budgets were very tight and they did not have the resources to pay for the training, although they helped as far as they could, for example by heavily subsidising accommodation and meals. The University of Pretoria helped to finance the project, and the team was fortunate to receive money from UNESCO for the training presented in July 2009. However, they could not keep on depending on such income sources in the long term. A number of funding proposals were written, of which only the UNESCO proposal was successful. The ideal would be to establish a local IT literacy training centre that could sustain itself. A number of the mission people who were involved with the training up to this point, in particular the new local trainers, shared an ideal of helping to empower the larger Zulu community in this way. However, they were not sure how to realise this ideal.

8.7.3.5 To the next level: a locally owned and managed ICT training centre

During the UP training and research visit of June/July 2010, a research interview with a local community member affiliated with the mission, revealed that this community member had a vision to set up a computer training centre. Follow-up talks were held with the community member, who was also a local businessman. The joint planning between the businessman and the university required a very pragmatic approach and flexibility around the details. The university's certification arm was not used to work with local community agents, and the memorandum of understanding drawn up between them and the businessman required some innovation.

By early 2011, the businessman located a venue for a computer training centre, as well as a number of computers. In April 2011, a train-the-trainer workshop was presented by UP at the newly established computer centre in the Tugela Ferry town, to seven potential trainers, again

mostly teachers and mission members. Since this date, two computer literacy courses were presented by local trainers. 23 local people from the Msinga district completed the first training course, and 17 people completed the second course. A third course is in progress in October 2011, at the time of writing, with 18 local people attending.

The funding model for the training centre is currently a combination of local philanthropy, limited investment by the University of Pretoria, and course attendants who pay. The local businessman has put a significant amount of his own capital into the centre, to pay for rent and equipment. The return on investment will be slow, and his own passion to help develop the community as well as the trainers' commitment to work for a small salary, has helped to make the initiative financially viable. Local trainers had to go through a learning curve as to the most effective manner to present the course, in terms of the time schedule and presentation format. Trainees require substantial time to practise the exercises. If the trainers spend too many hours with trainees, it becomes unsustainable to the trainers. A balance had to be achieved and it appears that the training schedule has stabilised.

The setting up of the local training centre was a significant event to the UP team. It was something they envisioned but could not set up by themselves; local ownership was required. The reach of the training centre is already more than what they would have been able to achieve by themselves: 58 local people have already been trained or are currently enrolled, compared to the 34 that the university staff managed to train. Most of the people trained at the local training centre are from outside the mission. The UP team was keen for the wider community to benefit from an ICT training facility, and not just the mission staff. Although the training facility is not totally self-sustaining yet, and still requires advice and assistance from the university's project team, it has the potential to become fully self-sustainable.

8.7.3.6 Enabling a successful process: a reciprocal relationship

It was mentioned earlier that successful community entry was dependent on the assistance of local cultural interpreters, and by the cultural sensitivity of the ICT4D team, especially their project leader. Among others, the ICT4D team had to learn to accept Zulu hospitality outside of the project, and to give it as well. When visiting in Tugela Ferry, local people were always keen to receive project team members at their homes, and team members were often invited for dinner. This researcher at times felt awkward to receive this hospitality from people who were poor compared to her own standards. Yet, the team came to realise that community

members felt honoured to invite them and that these events were important to community members.

The UP team had the opportunity to also receive people from Tugela Ferry at their homes during the mission school's annual visit to universities, organised for their grade 11 scholars. During the mission school's campus trips of 2009, 2010 and 2011, university staff had the opportunity to receive the learners and their teachers, arrange a campus trip that entailed career education, and house the Zulu teachers and learners in the researchers' homes. The reciprocated hospitality became meaningful to the success of the IT training back in Tugela Ferry.

8.7.3.7 The 'C' in the ICT4D project

Although it is referred to as an 'ICT4D' project, it is evident from the discussion above that the intervention was limited to predominantly IT literacy training. The 'C' in 'ICT4D' did not receive explicit attention, as internet reception was not generally available in Tugela Ferry at the time of training. The handful of dial-up connections that were established by institutions were slow, costly and not generally accessible to staff. While the ICT4D team explored possibilities to establish internet access, the estimated initial and maintenance costs were far beyond the scope of their own funding, and funding proposals to large role-players were not successful.

The widespread uptake of mobile phones in the community, despite barriers of unreliable reception, cost and lack of access to electricity, indicate the importance that is locally attached to communication. At the time of writing, the use of mobile phones in the community was limited to voice communication only. Potential future availability of bandwidth and smartphone handsets would open promising opportunities for future ICT4D work with a communications emphasis.

8.7.4 CATWOE description: serving system

The serving system's ICT4D initiative has a short term focus of performing a number of training courses themselves, and a longer term train-the-trainer focus. The latter involves a partnership with local entrepreneurs and assistance with the setting up of a local training centre. The CATWOE descriptions are different for the short term and longer term initiatives.

CATWOE description for short term initiative: UP team provides IT literacy training to Tugela Ferry mission staff.

Customers: Mission staff: school teachers, nurses and other care givers
Actors: UP Department of Informatics project team
Champions at mission as local organising team
Transformation: Majority of mission staff not computer literate, transformed to majority of mission staff being computer literate
World view: ICT literacy as enabler of socio-economic development, via mission staff
Owners: Joint ownership between UP project leader and mission champions
UP as institution who underwrites training certificates
Environmental constraints:
Buy-in and commitment of key mission stakeholders
Social acceptance of UP training staff
Availability of training facility with electricity

CATWOE description for longer term initiative: UP team facilitates setting up of local training facility.

Customers: Local residents of Msinga district
Actors: Local entrepreneurs/visionaries to set up training facility
UP Department of Informatics as facilitator
Transformation: Setting up locally managed ICT accredited training facility
World view: Local economic development via a sustainable ICT training facility
Owners: Joint ownership between UP project leader local entrepreneurs
UP as institution who underwrites training certificates
Environmental constraints:
Local entrepreneurs with ownership and perseverance
Sustainable local client base

8.7.5 Conclusion

The 'serving system' has successfully completed a number of training courses to one of the social 'systems served', namely the Tugela Ferry mission. In the longer term, the local



training facility is expected to have a direct impact on the larger ‘system served’, namely the Zulu community.

With this, the contextual descriptions of the social systems of interest on the ICT4D project are concluded. In Part III that follows, an entirely different aspect of the preparation for a systems description is provided, namely the modelling assumptions and simplifications.

Part III: Modelling preparation

8.8 Assumptions and simplifications

In Part III, the remaining aspect of the preparatory work is discussed: the stating of assumptions and simplifications that are made as part of the systems description and the application of theory. The assumptions and simplifications are informed by the contextual descriptions in Parts I and II, and also indicates the way that systems thinking in general and the systems framework in particular is being applied to model the social environment in the study.

8.8.1 Being functionalist or interpretive

The research philosophy of this study is interpretive. The research methodology chapter discusses and motivates the choice of an interpretive philosophy (see section 3.2.6). An interpretive approach is suited to ICT4D case study research within the “social embeddedness” stream of assumptions, and Klein and Myers’ (1999) principles of interpretive field work is accordingly applied. The theoretical framework of the study is a social systems framework, where the definition of a system, namely a subjective mental construct, is in line with interpretive thinking. The two underlying theories of the framework are Giddens’ structuration theory and autopoiesis theory. In section 3.2.6, it was argued that Giddens’ (1984) structuration theory as well as Maturana and Varela’s (1987) autopoiesis theory each contain aspects of interpretive as well as positivist thinking, but can be largely classified as interpretive.

When systems thinking is applied by means of a biologically based model, it retains functional aspects. In the systems framework of this study, social systems of interest are modelled as ideal types, with assumptions about boundaries, and generalisations about the social behaviour that characterise social systems. Biological concepts are subsequently applied to the modelled systems. Giddens, an outspoken non-functionalist, is critical towards studies that regard communities as “easily distinguishable ... as biological organisms are”, and where there is a “fascination with ‘value-consensus’ ... at the expense of the more mundane, practical aspects of social activity” (Giddens, 1984: xxxvii). Giddens’ view is acknowledged but not shared by the researcher. In this study, the functional aspects are meant to complement the interpretive stance rather than counter it, making use of the social as well

as natural sciences, as possibly intended by Checkland (1999) in his claim that a social system has aspects of a natural system as well as a human activity system.

8.8.2 Selecting the Zulu and mission communities as systems of interest

The Zulu and mission communities are selected as systems of interest because they represent the key stakeholders of the ICT4D project. Both communities are ‘systems served’ in Checkland and Holwell’s (1998) definition of an information system.

The mission community is a direct client and co-initiator of the ICT4D project. The ICT4D team had to successfully engage with mission workers, and take effort to understand and respect their biblical value system in the process. The latter point was especially important given the mission’s aim of practically living out their value system rather than just preaching it. ICT4D team members were the guests of the mission and were seen as belonging to the mission while undertaking their project. As such, they had to live the value system of the mission. For example, female ICT4D team members had to wear loose fitting, long dresses or skirts, as this is the required dress code for mission workers.

The Zulu community is the ‘system served’ of the mission. The ICT4D project assisted the mission with the eventual aim of helping its members to better assist the Zulu community, in areas such as education, medical and social care. In addition to being an indirect ‘system served’ of the ICT4D project, almost all mission members and the majority of mission workers are Zulus. These people have abandoned some aspects of Zulu culture such as ancestral worship, but their daily social interactions are still based in their Zulu culture overall. For this reason, the ICT4D members had to learn to engage with Zulu people. Also, the ICT4D team was in Zulu tribal territory while doing their project and had to socially interface with Zulus outside of the project.

The eventual aim of the ICT4D intervention is not only the successful interaction with the two mentioned communities; it is the socio-economic development of the Zulu community at large. As such, the Zulu community and their dynamics had to be understood, to ascertain how the ICT4D project could influence these dynamics towards socio-economic development. The dynamics within the mission had to be understood, as well as its influence on the Zulu community, in order to ascertain how an ICT intervention at the mission could affect the Zulu community at large.

8.8.3 Zulus and the mission: separate social systems or not

Since almost all mission congregation members are native Zulus, the mission is strictly speaking contained within the Zulu community. However, the mission culture and mission values are very distinct from (although to an extent influenced by) traditional Zulu culture with its ancestral belief system, patriarchal system and polygamy. Zulus joining the Tugela Ferry mission church are requested to totally renounce the ancestral belief system and to take on new family values that exclude total male domination and polygamy. This also differentiates the Tugela Ferry mission from some other Christian churches operating among the Zulus, who accommodate more of the traditional Zulu practices and the practice of syncretism. The Tugela Ferry mission is thus at great pains to differentiate themselves from traditional Zulu cultural, belief and social practices. At the same time, some Zulu social practices are continued and accepted within the mission congregation, because they do not clash with biblical values. Examples are social habits not involving ancestral worship, and the implicit age related social hierarchy of the Zulus.

Since the way that social systems are defined in this study, is in terms of social and cultural practices, the mission is by implication a separate social system.

Initial exposure to the Tugela Ferry community made the researcher realise that if IT training is to be performed in association with the mission, for congregation members and possibly later non members, it will be necessary to understand mission culture and practices as well as traditional Zulu culture and social practices. Even if Zulus at the mission have moved away from their deeply traditional culture and beliefs, they still retain a certain way of thinking that can only be understood by studying the deeply traditional Zulu culture as well.

As such, it makes sense to the researcher to define the mission and traditional Zulu cultures as two distinct social systems, for purposes of analysis.

8.8.4 The question of boundaries

Mingers (2006) indicates that as systems move from the physical to the social, their boundaries become less easy to discern. The only clear boundaries are those of “ideal type” systems.

In autopoiesis theory, the boundaries of a system are created as part of the self-production process. The two systems investigated here are social systems, identified by respective sets of cultural practices. As such, the exercising of the social and cultural practices would serve to identify what is inside the system. By implication or inference, these boundaries can then be drawn around people as well. However, when it comes to classifying people of the community into these systems (or not), things are not so clear cut.

Ideally, the members of the mission church are identified by their behaviour. The leadership of the mission church have realised that in the Zulu community, where people's personal lives are very transparent and not very private, one's deeds carry a stronger message than one's words (Respondent3, Respondent5). The "counter" value system preached by the mission church is constantly reinforced, in preaching, bible studies and so forth. The leadership as well as church members that were observed, make a conscious effort to enact that behaviour. It is important to the identity of the church that people do not send mixed messages into the community. However, people are human beings and one cannot extrapolate from the most active members of the church. It is acknowledged that the value system of the church is not (and cannot possibly be) in practice enacted consistently. However, the value system of the mission remains their identifying characteristic. It is also the case that the Christian church allows for error, provided that it is followed by some acknowledgement or confession, and attempts to rectify or improve the behaviour. The assumption will be made that the mission's value system is generally enacted within the mission, forming a boundary by distinguishing what is part of the mission and what not.

In the Zulu system, the situation is that one is born into a Zulu tribe. It is seldom if ever the case that a person not born Zulu is accepted as a Zulu. In practice, Zulus who migrate from the area into a more multicultural environment, can marry into other South African cultures or even non South Africans. Zulus moving into the cities may also choose to leave behind their social practices. However, the demographic data for Msinga shows the homogeneous character of the community, where over 99% of the population consist of Zulu speaking black Africans, and virtually no migration of other cultural and language groups into the area. According to Respondent5, the Zulu habits (as a whole) may be changing over time, but the people in the Msinga area remain a homogeneous group even today.

8.8.5 Organisational closure and autopoietic nature of systems

Before applying autopoiesis concepts to a social system, is it necessary to assume that the social system of concern is self-producing, has its own boundary and is organisationally closed, in other words, that it is autopoietic? These questions form part of the controversy around the social application of autopoiesis, and is discussed in detail in Chapter 6. In section 6.3, it is shown that there are different camps in the literature. It is noted that Varela himself does not believe that autopoiesis can be directly applied to social systems (Varela, 1981: 38), while according to Luisi (2003), Maturana is more open to the idea. Some scholars argue that social systems are autopoietic and autopoiesis principles can be applied to them directly (e.g. Zeleny and Hufford, 1992). Some scholars argue that social systems can only be autopoietic in the metaphorical sense (Morgan, 1986). Yet another group of scholars argue that social systems have to be defined in a special manner in order to arrive at an autopoietic construct (Luhmann, 1990; Mingers, 2004). Of the suggested social conceptualisations of autopoiesis, there are currently none that can withstand a strict assessment of their propositions against autopoiesis theory.

Section 6.3 also refers to a substantial group of scholars who socially apply the principles of autopoiesis and derive benefits from it, without indicating a need to claim that a social system is autopoietic or even organisationally closed. In this study, the latter group of scholars are followed, and autopoiesis principles are applied without claiming or even making assumptions upfront such as that a system is organisationally closed. While the restrictions are lifted in this manner, it is still believed necessary to have a proper social conceptualisation of autopoiesis, that is internally coherent and adequately reflecting the social nature of the social system. This is provided with the structuration based conceptualisation of a system presented in Chapter 7.

8.8.6 Homogeneity in the Zulu and mission communities

The demographic data in section 8.2 indicates that more than 99% of residents in the Msinga local municipality are Zulu speaking black Africans. Of these, roughly 80% have deeply rural subsistence livelihoods, including that they live in traditional dwellings, do not have access to electricity or running water inside their yards, and that the adults in the household are illiterate. Children walk long distances to school. A large amount of household members' productive time goes towards fetching wood and water, in addition to household chores such as preparing meals, washing clothes, and perhaps tending to livestock and a vegetable garden.

These people often live so far from main access roads that they are not able to commute to a daily job, the latter of which there are not many available. Their typical means of income are estimated to be a combination of social welfare grants, the income of a family member who is a migration labourer, and informal trade. Based on personal observation and informal discussions, most traditional Zulus are assumed to have ancestral rites as part of their cultural practices, which do not necessarily preclude them from also belonging to a religious institution such as the Zionist Christian Church or Shembe church.

Roughly 20% of people live in modern brick houses, have electricity in their houses and running water nearby, not necessarily inside their house. They live adjacent to a small town or have a means to access it. It is estimated that at least one of the adult family members are literate and have formal employment. Children have access to better resourced schools. These people do not participate in ancestral practices as actively as their more rural counterparts.

Since the mission headquarters is on the outskirts of the town, and walking distance from the town centre, it is estimated that the majority of congregation members fall in the 20% category of Zulus who are relatively speaking more affluent. Families who send their children to the mission school fall in this category, since they manage to afford the schools fees that are higher than at government schools. Mission staff also falls into this category. The mission does have satellite church buildings distributed throughout the remote areas, and the people involved at the satellites would be from the 80% of Zulus who live remotely and are financially speaking more poor.

Although the two social systems are defined in terms of their social practices and not groups of people, there is a mapping to real communities. The Zulu social system will map largely to the 80% of Zulus with a rural, traditional lifestyle. The mission social system will map largely to the 20% of more affluent Zulus who are also members of the mission church.

8.8.7 An assumption related to the serving system

The research approach followed in this research project is, in the ICT4D context, a “social embeddedness” approach (Avgerou, 2009), similar to Silva and Westrup’s (2009) “emerging understanding” approach, which is sensitive to the local context and its needs. It is assumed that the whole ‘serving system’ follows this ICT4D approach. This is not entirely true, since the ICT4D project leader follows a combination of an interpretive, context sensitive and a critical approach in his research. However, the project team as a whole makes an effort to

individually and jointly learn to understand and respect the local Zulu as well as mission culture. Mission church services are jointly attended and after-hours social interaction with community members is encouraged.

8.9 Conclusion

With the use of the systems framework, this chapter has laid the basis for a systems modelling exercise. It has simultaneously presented a thorough description of the overall social context of the ICT4D project. The research proceeds in the next chapter with analysing the case study data to perform a systems description and analysis. The systems description and analysis will work towards showing the impact of the serving system, the ICT4D project, on the systems served, namely the Zulu and mission social systems.