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*Information Development* 2010 26: 265

DOI: 10.1177/0266666910385374

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# A baseline study of a Dwesa rural community for the Siyakhula Information and Communication Technology for Development project: understanding the reality on the ground

Information Development  
26(4) 265–288  
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DOI: 10.1177/0266666910385374  
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## Abstract

A necessary foundation for implementing Information and Communication Technology for Development (ICT4D) projects is an understanding of the existing status of a rural community, in terms of its socio-economic status and its readiness to uptake innovative development activities supported by ICT. A Baseline Study of the Mpume rural community in the Dwesa-Cwebe area of the Wild Coast in Eastern Cape Province, South Africa was conducted as part of an initiating component of the newly adopted Living Lab concept for the Siyakhula ICT project. The Siyakhula Living Lab exists as a collaboration between public-private-civic partnerships to co-create innovative solutions for development. An understanding of the targeted rural community was essential to set a foundation for building on existing living lab activities, and a new Village Connection project aimed at offering affordable mobile phone services in rural contexts. This paper presents the Baseline Study findings, including a summary of the existing local economy and quality of life of the targeted community, and a detailed discussion of the readiness of the communities to be or become partners in the living lab. The findings illustrate the reality and need for development in a typical rural area of South Africa; not only highlighting targeted areas for development that can be supported by information access, but also informing and guiding project stakeholders on how best to implement living lab activities.

## Keywords

rural development, rural communities, baseline studies, information and communication technologies for development, ICT4D, living lab, innovative development, rural information needs, evaluation, mobile phone services, Siyakhula project, Mpume, Dwesa-Cwebe, Wild Coast, Eastern Cape Province, South Africa

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**A baseline study of Mpume village provided a general understanding of local information needs needs that ICTs can support through new and existing development programmes.**

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## Introduction

In initiating any Information and Communication Technology (ICT) project it is essential to understand the development status of a community, so as to introduce relevant ICT programmes that support local development needs while also being sensitive to the

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various rural environments (Hudson, 2001; Gigler, 2004; Rossi, Lipsey, and Freeman, 2004). This fact underpins the development of a Living Lab, which is a fairly new concept emerging in southern Africa. A platform for collaboration called Living Labs in Southern Africa (LLiSA), coordinated by the Meraka Institute, was officially launched in February 2009 to serve joint development and test user cases, solutions and prototypes that would cater for rural areas countrywide. The Siyakhula Living Lab (a member of LLiSA), previously known as the Siyakhula ICT project, had already begun work on the same lines in February 2008 and now in 2009 has adopted the Living Lab concept in collaboration with Rhodes University, the University of Fort Hare, the Technology and Human Resources for Industry Programme (THRIP) of the South African Department of Trade and Industry, COFISA (Cooperation Framework on Innovation Systems between Finland and South Africa), the Meraka Institute and the Nokia Siemens Networks.

In initiating the Siyakhula Living Lab concept, a Baseline Study evaluation was conducted between March 2008 and April 2009 to assess the existing status of the community. A Baseline Study is a knowledge-oriented evaluation (Rossi, Lipsey, and Freeman, 2004: 36), which is centred on the generation and contribution of knowledge through describing the nature of a project's environment, to *inform* external and local stakeholders. The evaluation does not focus on factors associated with the new ICT project's technology, but aims to understand the existing status of a community without any influence from the potential technology that will be implemented. This paper presents the findings of the study, and recommendations for the development and implementation of the Siyakhula Living Lab. The discussion presents a summary of the findings on the local economy and quality of life of the targeted rural community, and elaborates on the findings of the readiness of the targeted community to become partners in development initiatives supported by ICT.

### The Siyakhula Living Lab

The Siyakhula Living Lab (SLL), previously known as the Siyakhula ICT project, exists to provide new technology and skills to the rural community of the Mbashe municipality, specifically in Dwesa on the Transkei wild-coast. In essence, a Living Lab exists as "collaborations of public-private-civic partnerships in

which stakeholders co-create new products, services, businesses and technologies in real life environments and virtual networks in multi-contextual spheres" (Schumacher and Niitamo, 2008: 2). The Siyakhula Living Lab has essentially grown to exist as a collaboration between academia, industry, government, and the Dwesa/Cwebe and Nkwalini communities. Each entity plays a key role in shaping the activities and functions of the SLL within the communities it targets in the Mbashe Municipality. Siyakhula is a Xhosa word that means 'We are growing', as the project would desire: it aims to grow in its innovation and sustainability. The SLL, since its inception in 2005, has been running in five schools that are its base in the community. These schools are Mpume Junior Secondary School, Ngwane Senior Secondary School, Mtokwane Junior Secondary School, Nondobo Junior Secondary School and Nqabara Secondary School.

The primary objective of the SLL is to develop and field-test a distributed, multifunctional community communication platform, to deploy in marginalized and semi-marginalized communities in South Africa, where a large number of the South African population live. The second objective of this project is to equip people with technical skills in the field of e-commerce, particularly (but by no means only) to support e-commerce activities. Tertiary level students would also gain skills through exposure to the processes of applied research and by experiencing actual ICT projects in their area. This second objective would in turn support the first.

The SLL exists as a collaboration of research projects that aim to widen and add to the vision of the Living Lab, and essentially support new and existing rural development programmes in the Mbashe Municipality. Examples of sub-projects include software engineering of a robust, cost-effective e-commerce platform for disadvantaged communities; an assessment of adoption barriers to ICT; project management techniques for sustainable rural ICT; and backhaul connectivity options for ICT deployment. The local wireless connectivity and connect to the Internet aim to potentially support e-health, e-government and e-learning in the future development of the Living lab. The focus of service delivery in the SLL so far has been via desktop computers and fixed line telephony. However, there is a move to introduce mobile phone technology through a Village Connection platform, which offers affordable voice and SMS services specially designed for rural communities. (Pade et al., 2010)

Key to the progressive development of the Living Lab is to develop and implement the project appropriately, with good awareness of the livelihood and development needs, wants and challenges of the community. The SLL Baseline Study serves the initial stages of the Living Lab concept by informing all stakeholders of the current status of the community. The research questions that have guided the activities to fulfil the objectives of the Baseline Study are as follows:

1. What is the status of the local economy and what directions can it take?
2. What is the quality of life in the communities?
3. What is the readiness of the communities to be or become partners?

### The baseline study methodology

The research process and methodology was developed collaboratively with Rhodes University and Fort Hare University, and industry input from Nokia Siemens Networks. The Baseline Study team consisted of the following individuals and expertise: Caroline Khene (Information Systems), Robin Palmer (Anthropology), Hannah Thinyane (Computer Science), Mitchell Kavhai (Communications), Sibukele Gumbo (Computer Science), Handsome Mpofo (Computer Science), and Stephan Martin (Nokia Siemens Networks in Singapore). The Baseline Study process comprised of two focus areas:

1. *A socio-economic assessment of a sample community:* The community of Mpume in Dwesa is representative of the rural communities of the area, but it is also the first community to have been involved in the research, and therefore the site that has been longest exposed to the new technology. Two stages were used to collect data. For the first stage, a survey was conducted using a questionnaire to assess all Mpume households (80 households). The second stage followed on a filtering process of the first stage to select appropriate representatives of the community for an in-depth qualitative investigation using data collection instruments such as interviews, focus groups, and participant observation.
2. *An assessment of current users of computers in the community:* a survey was conducted using a questionnaire to assess people in the Mpume community who had already received computer

literacy training and the general outcome/outputs of the ICT project in the community.

Pade and Sewry (2009) present an elaboration of the Baseline Study research methodology and the lessons learned from its application in the Siyakhula Living Lab.

### Background: The Wild Coast and the Dwesa-Cwebe area

The Wild Coast is the least developed area of the Eastern Cape Province despite having the highest rainfall for agricultural potential. As part of the former Transkei, which was first declared a labour reserve and later an 'independent' Bantustan, the area was subjected to decades of war and related trauma and then systematically underdeveloped to 'encourage' labour migration to the whites' farms, mines and cities (Palmer, Timmermans and Fay, 2002). However, 'underdeveloped' also means 'unspoilt' and this combined with the area's physical beauty means it has great ecotourism potential that has hardly been realized.

Currently there are about 15,000 people in the area, in roughly 2000 households divided among eight settlements recently consolidated into seven Community Property Associations. The villages are on the landward side of the Dwesa-Cwebe Nature and Marine Reserve, an area of about 6000 hectares of indigenous forest, grasslands, dune forests and shoreline. The forests were proclaimed as early as the 1880s by the colonial government, which by 1903 had annexed the entire Transkei Territories (Hammond-Tooke, 1975). Rule by magistrate and acquiescent traditional leaders was immediately imposed, and this was to continue largely unchanged for most of the 20th century, even though the apartheid regime after 1948 was grooming the Transkei (and other 'native reserves') for a form of self-rule as 'independent' Bantustans. In preparation for this change, the Dwesa-Cwebe Nature and Marine Reserve was proclaimed in 1975, and whereas only the forests were protected before (and then not to the entire exclusion of local people, who were allowed to gather fallen timber and saplings and other forest products) now the entire area up to 12 nautical miles into the sea was fenced and the residents entirely excluded (Village Planner, 1998).

As the local subsistence economy was heavily dependent on these and other natural resources, the residents experienced immediate and severe hardship (Shackleton et al., 2007). Their representations to the Bantustan

government for relief fell on deaf ears and, after 7 years of such efforts, in 1994, they combined in a series of mass invasions of the reserve that the conservation authority was powerless to resist. Afterwards, the still-forming provincial government of this new province permitted limited access to the reserve and negotiations towards joint management of the reserve, but already the newly formed conservation committees were being made aware (by the Transkei Land Service Organisation (TRALSO) NGO) of their possible eligibility to claim the reserve land. In 1996 they lodged their claim and by 2001 the reserve was formally transferred, along with R14 million in compensation and grants to seed the development of the area (Palmer, Timmermans, and Fay, 2002).

Unfortunately, the claim coincided with the final failure of the Wild Coast Spatial Development Initiative (SDI), in which Dwesa-Cwebe was to be a key node; the decline of provincial government; the inclusion of the area into new structures at local and regional level; and uncertainties at national level about land tenure on communal land (Mitchell, 2003: 46–62; Kepe, 2001). All of this has retarded the implementation of the Development Plan for Dwesa-Cwebe, and the only tangible improvements have been water-reticulation throughout the area, some new schools and a few poverty-relief schemes providing some temporary employment and assistance.

### **Local political economy and socio-economic status**

Endemic and seemingly intractable poverty on the Wild Coast is linked to the history of the area as part of a deliberately underdeveloped labour reserve. Until the advent of democracy in 1994, rule by magistrate and traditional leaders who were prepared to accept white and later Bantustan domination was the prevailing system that had hardly changed since the Transkei was annexed a century before (Hendricks, 1990). Democracy at national level brought in a new system of delegated power to provincial, district- and local-municipal levels that proved most difficult to implement in the Bantustan-heavy new province of Eastern Cape (Kepe, 2001). Reforms in land tenure (linked to land restitution in the case of Dwesa-Cwebe) that were part of the preparation for development under the failed Wild Coast SDI have been frozen since the passing of the Communal Land Rights Act of 2004 that replaces previous attempts at land reform (Kingwill, 2005). Until especially the relationship

between the new democratic and traditional systems of land administration is sorted out, meaningful development remains suspended. Only really essential infrastructure such as reticulated water and a few stopgap poverty relief projects have emerged in the interim.

Stasis in the political economy at regional level and little in the way of successful intervention from the state and foreign funders has meant that certain long-term socio-economic trends persist at the local level. The traditional three-generation extended family residential unit continues to fragment, most frequently into female-headed households composed largely (but not always) of adult women and minors of both sexes. The middle-generation is absent, either employed or work-seeking in town, accompanied by their children or those of relatives finishing high school there. With a severely depleted local labour force, field cultivation has long since given way to enlarged gardens next to the homestead that can be more easily managed by women and children. Surveys of two villages at opposite ends of Dwesa-Cwebe in 1998 and 2003–2004 revealed the economic stagnation of the area over a recent 5-year period. Household cash incomes were tiny, with few households having more than R375 a month. Any increases in the availability of casual employment through poverty relief projects were largely negated by retrenchments – and return – of breadwinners in town. Increased dependency on ‘free’ local natural resources caused many to regret the deal whereby the integrity of the nature reserve was guaranteed by the settlement in return for ecotourism-related revenues and employment opportunities that had not materialized.

Comparison of these findings with sample surveys of the entire Wild Coast in 1997 and 2000 (Palmer, Timmermans and Fay, 2002) reveals that Dwesa-Cwebe is not exceptional in its socio-economic status, especially after the Wild Coast SDI had failed. Nor within Dwesa-Cwebe is Mpume any different from the general situation, even 5 years further on (as the Baseline Study household survey of 2008 reveals). The household survey undertaken in 2008 reveals the familiar picture of gender imbalance in favour of women; demographic imbalance with the majority of residents over 65 and under 15; a local unemployment rate of nearly 90 percent; urbanization of the middle generation, who frequently leave their children until senior high school age with parents in Mpume; dependency of more than half the locals on pensions and grants and a quarter on support from children and other relatives in town. Not much has actually changed,

comparing the 1998 and 2003–2004 surveys, and the latest Baseline Study survey of 2008. Mpume has yielded no surprises – poverty has still persisted.

Addressing the problem of poverty requires much more than the interim poverty relief projects implemented in Dwesa. Development in these terms should include:

1. Realizing the tourism potential of the nature reserve and its infrastructure as a matter of urgency in order to enhance employment in the area and provide a market for crafts and tourism-related SMMEs such as homestead-based agritourism initiatives and guided trails.
2. Related to this is the need to secure income for female-headed and female-dominated households, to maximize their ability to nurture the next generation.
3. Quality local education is needed, especially at the primary and junior high levels that embrace most local children, with a curriculum that will best accommodate the realities of their life; this includes equipping them for the likely range of local employment as well as for jobs in town.

### Quality of life

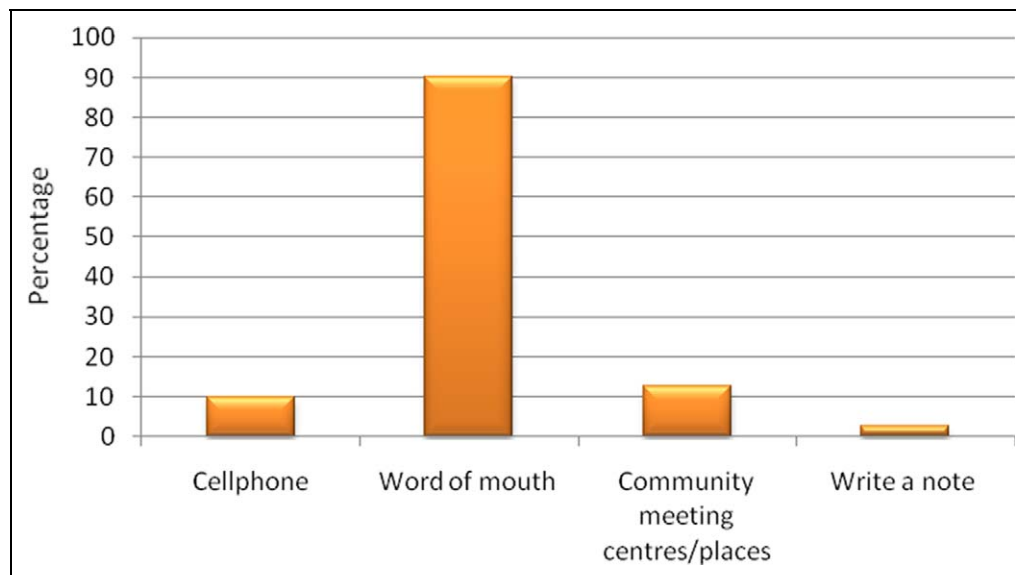
Quality of life can be discerned from statistical indicators and can thus be extrapolated through quantitative research (Rapley, 2003; Møller, 2007), but in the case of a small community such as Mpume there was an opportunity to do quantitative research via the household survey and then also test it in focus groups. These groups were drawn from five significant social categories in Mpume: the teachers, crafters, unemployed, elderly and youth. Together, the groups spanned the age-range present and reflected both the local gender bias in favour of females and local class distinctions, such as they are. All groups were asked to discuss what they were proud of or enjoyed about Mpume and then what they saw as problems or challenges. Finally, all groups except the elderly were asked what they would change and how they would change it. The focus groups study provided insights into the varied interests and attitudes prevalent in even a small community such as Mpume. Focus group participants were well aware of the linkages between the underdevelopment of the area and their sectional frustrations.

The focus groups also yielded detail on the challenges of a low quality of life and its associated

problems, such as the lack of infrastructure and essential services, low incomes, high unemployment, disease and various social pathologies. The persistence of poverty and unemployment, especially following the raised hopes of the transition to democracy and in a still-patriarchal community with few senior men, a missing middle-generation and plenty of children and youths, has led to unacceptable levels of anti-social behaviour including drunkenness, coercive sex or teenage pregnancy and theft. Such social differentiation as has occurred may be a stimulus to destructive behaviour out of jealousy. Yet the groups also revealed that, despite these factors, their presence in Mpume was not entirely involuntary – some had even returned to the village of their own free will. They valued family life and being close to supportive extended kin and old friends. Even with the escalating problems and lack of development, local people still value their accustomed way of life. For instance, the retention of traditional community values persuades even professionals such as teachers to stay in the village, and in some instances draws out-migrants to return voluntarily. Quality of life is not, however, what it was, and there was a sense of desperation in the casting around for ‘quick fixes’ (for example a hair salon suggested by one of the youth) and major and unlikely modernization projects as a means of restoring and perhaps enhancing it. Genuine development is urgently needed to halt a slide into dysfunction that threatens the community values that persist in Mpume. It may not bring back all those who have left but would provide more income boosting and community enhancing activities for those who remain and might return, whether voluntarily or through retrenchment.

### Readiness of the community

The emerging information society presents new opportunities for supporting rural development, with information and knowledge taking on a strategic role in both social and economic activities. As well as providing these new opportunities, this reliance on information includes various risks in society, depending on users’ ability to harness and utilize information effectively (Pade, Mallinson and Sewry, 2006). Information gives rural people the ability to expand their choices through knowing what works best for them, hence contributing to development, competitiveness and productivity (Canadian International Development Agency, 2003). According to Dutta, Lanvin and Paua (2003: 2), the readiness of the community to take



**Figure 1.** Methods of communication within Mpume.

up ICTs as supportive tools is defined as ‘the ability to use ICT to develop one’s economy and to foster one’s welfare’. If the Mpume community are to use information effectively as a supportive tool for rural development, it is essential to ensure that they are ready to become active members in the information society. This section describes the readiness of the Mpume community in terms of existing communication patterns, priorities and information needs, and current technology and media use.

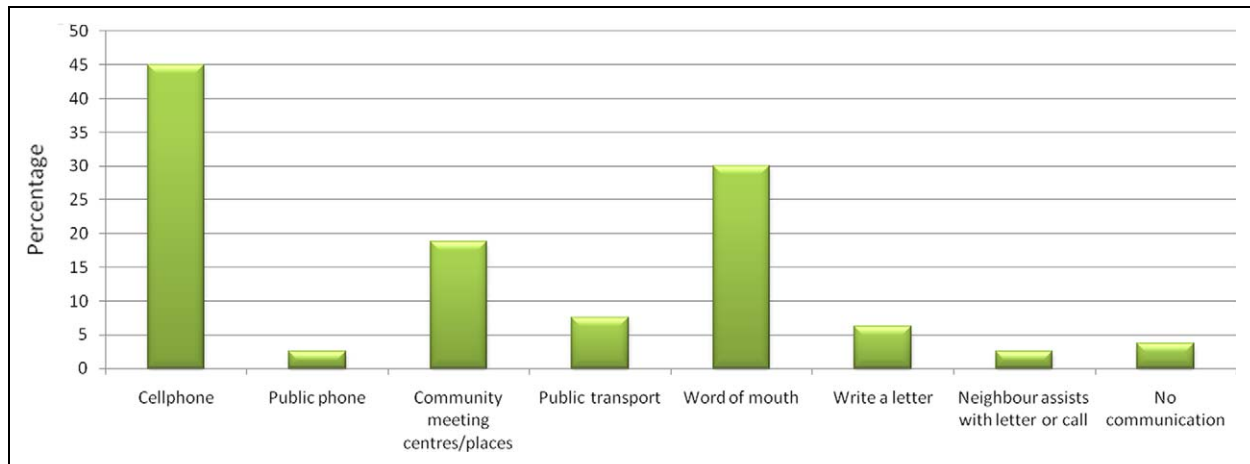
#### *Existing communication patterns and methods*

The existing communication patterns provide baseline information for future impact assessment of the Living Lab project. They also help in identifying possible ways to improve or integrate traditional communication patterns by introducing new communication methods through the Living Lab. Across this study, we have noted that communication patterns vary depending on the distance involved, in terms of those within Mpume, between surrounding villages, across South Africa, and internationally. In Mpume, only one resident had ever communicated with someone outside South Africa. We therefore limit discussion to the other three ranges of communication.

*Within Mpume.* As shown in Figure 1, word of mouth is overwhelmingly how people communicate (90 percent) as opposed to community meetings or meeting places (13 percent), speaking on a mobile phone (10 percent) or writing a note (3 percent).

When asked why they prefer word of mouth, people noted the small distance between houses, the closeness of communities, and the expense of airtime. When asked to elaborate, they said they always walk around in the community and their homes are close together, so word of mouth is the most natural way for them; and as there are close community ties, villagers are willing to share information with one another. The only exception to this is where residents are elderly, and cannot walk long distances, preferring to send children with messages (or a note) for neighbouring households. Finally, and perhaps most importantly, people alluded to the expense of airtime. They felt that, except in emergencies, they would not phone someone in their own village. As we have noted, not all households in Mpume have a mobile phone. Without one, a resident wanting to speak to someone within the village would rather walk to find the person than walk to a neighbour to borrow a mobile phone and then make a call, which could take more time and would also cost money.

Community meeting places, which 13 percent of households consider as essential for communication, also provide a good information base, especially for discussing the rural development agenda and progress in Mpume. These places (churches, the clinic, a school, or at a funeral or a traditional community event) also keep people informed about the current affairs in Mpume, providing them with a platform to communicate and discuss their views, which can shape the social-cultural and economic status of the community.



**Figure 2.** Methods of communication with surrounding villages.

*Between surrounding villages.* Figure 2 shows the diverse means of communication between surrounding villages in Dwesa. The terrain in Dwesa-Cwebe is mountainous, with deep valleys and high rolling hills. As in most rural areas, roads are constantly in need of repair, and public transport is sporadic and unreliable. Travelling between the villages can thus take a lot of time and effort.

In Mpume, communicating with people in surrounding villages is usually by mobile phone (45 percent) or word of mouth (30 percent), but otherwise in community meeting centres and places (19 percent), using public transport (8 percent), writing a letter (6 percent), using a public phone (3 percent), or getting a neighbour to assist with writing a letter (3 percent). Four percent of households do not communicate with surrounding villages at all. As we have said, the villages are quite far apart and travel conditions are unfavourable. This is why mobile phones are preferred. Many people in Mpume felt they were either too old to walk these long distances, or too young to be sent out by themselves. In these cases, people would resort to using a mobile phone to contact neighbouring villages. Where the person to be contacted does not have a mobile phone, a child is sent to deliver either a handwritten or verbal message.

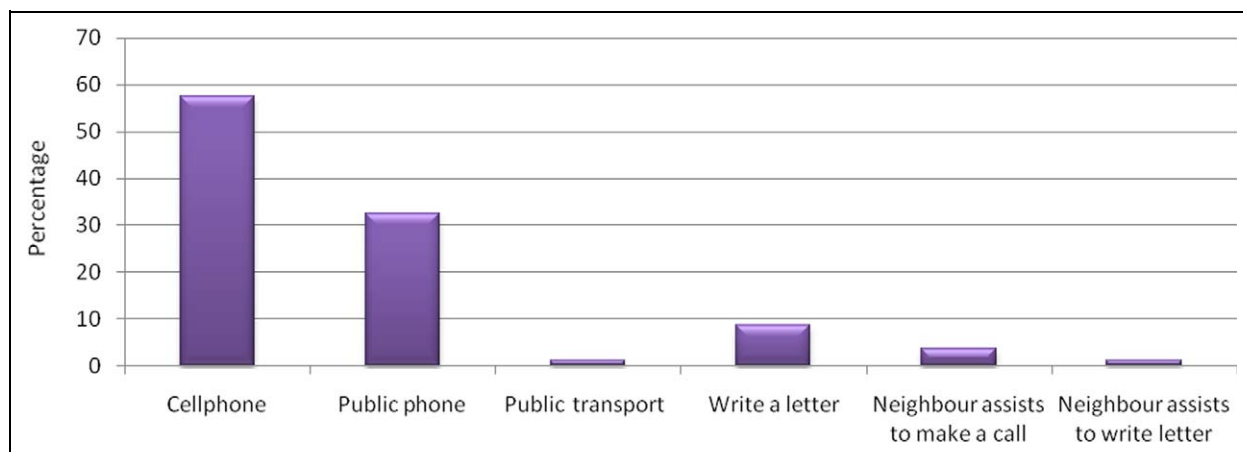
The second and third options for communicating with surrounding villages are word of mouth and community meetings (including inter-community meetings) respectively – unpopular choices because of the relative expense and lack of access to mobile phones and public transport. Also, 3 percent of households indicated that they would prefer to use a public phone. Unfortunately, all public phones in Mpume have been vandalized and no longer work; but an

entrepreneurial teacher in the area at some point has provided a public telephone service by charging customers for use of a phone that can be connected to a cellular network. With so few mobile phones in the area, some households communicate through writing letters, which a child is sent to deliver. Where an individual is illiterate, a neighbour assists in writing a letter. Four percent of households stated that they do not communicate with anyone outside Mpume, as the household occupants are too sick to find a way of passing on or receiving messages. This can pose a serious health risk for them as they then lack access to health information and services.

*Across South Africa.* Figure 3 shows the most frequently used methods of communicating with people across South Africa. As this figure illustrates, residents mainly use mobile phones (58 percent). The second most popular method is to use a public phone (33 percent) – either the ones provided by the entrepreneurial teacher described in the previous section, or public phones found in the nearest town (after travelling by public transport for up to 2 hours).

The third most popular method of communicating with people around South Africa is by writing a letter and posting it (9 percent). However, due to the cost of transport to the nearest town with a post office, this form of communication is rarely used. Where the household does not have access to a mobile phone, they can ask to use a neighbour's (at a cost possibly), or where people cannot read or write, the neighbour may make the call on their behalf. Interestingly, 1 percent of Mpume residents use public transport to communicate with friends and relatives, which may indicate that they travel to visit their families that live





**Figure 3.** Methods of communication with people around South Africa.

around South Africa. A community development representative also mentioned that public transport is required to make occasional visits to the municipality to ask for community development assistance.

#### *Information needs and village priorities*

Understanding what information the local people need and what other computer-related interests they might have is fundamental before implementing an ICT programme. Eliciting these interests in a rural community is not a clear-cut exercise, as villagers do not start by understanding the potential of ICTs in their daily livelihood activities. The community is not always particularly aware of what their information needs may be, even though it is quite evident in the community that there is a great need of information for development and poverty alleviation. Nevertheless, it has been suggested (Mulder et al., 2008) that rich insights can be gained for understanding a rural community through eliciting what they value and challenges in the community that they are more familiar with, rather than focusing on the potential of innovation and technology. Information needs can be elicited from what is said; and from there, it should be possible to understand the kind of information that people would want to share with nearby villages, around South Africa, and globally. The information needs analysed are categorized into the key uses of ICT for development as highlighted by Pade, Mallinson and Sewry (2006), with extra ones added that are specific to Mpume and Dwesa. This analysis provides a general macro-level view, which we recommend be supplemented with a micro-level analysis during the planning stage of the ICT project to determine how ICT may be used to

support the local needs. Furthermore, as the community interacts with the technology, a local demand-driven needs analysis should be carried out to pinpoint emerging information needs in the community, so as to promote the sustainability of the ICT programme in the long term.

#### *Entrepreneurial activity and tourism development*

Economic activity in rural development highlights the importance of market access and business development in rural areas. The livelihood of rural people in developing countries depends greatly on opportunities to participate in product and service markets; in fact the extent to which they can do so in agriculture, labour, tourism or credit markets determines their poverty rates (Mwabu and Thorbecke, 2001: 13).

The Dwesa nature reserve is a key asset for rural development in Dwesa, with its contribution through tourism. Yet this potential is hampered by a scarcity of knowledge and experience of tourism locally, and so there is limited community involvement. Some residents (especially the youth and elderly) feel the reserve has not made a significant contribution to rural development (this was even mentioned by an individual who works at the nature reserve). Nevertheless, according to Palmer, Timmermans and Fay (2002: 273), potential exists in authentic cultural and heritage tourism, associated with Dwesa-Cwebe's rich Xhosa tradition and recent historical background as a former designated homeland. Discussions with the community indicate that they do value aspects of their local culture such as traditional dancing, arts and crafts, local music and local gospel choirs, and the youth especially appreciate being close to the seaside.



**Figure 4.** A traditional dance demonstration.

This appears to signify an interest in tourism; various ideas for entrepreneurial activity and tourism were raised, especially by the youth who keenly suggested, among other things, opening a franchise store to create employment, building a hotel, and building hair salons. The youth and artists also believe that local arts and crafts can contribute to tourism and community involvement. They want to develop this market; for instance, through building a craft centre where individual artists can work together to make and sell their products.

Potential support for entrepreneurial activity could take these forms, particularly for tourism:

*Promoting heritage and cultural tourism through music and dance.* The community is proud of their local Xhosa tradition of musical talent, particularly in dancing, which could attract the tourism market. One of the ways in which they now value ICTs is for advertising themselves on the Internet. In earlier research too, it was learnt that the Xhosa traditional dancers approached a project champion with the same idea, arguing that 'when they find [other traditional dancers] on the TV, they find out they are better than those ... [and say they] have been born doing these things.' Mpume residents feel they could attract tourists with their more *indigenous* dance and heritage directly passed on down the generations. National and global exposure is essential to promote local tradition and music for tourism development. Figure 4 depicts traditional dancers from Mpume at work as they recorded their music in 2006 for research and promotion purposes.

*Supporting local arts and crafts.* Local arts and crafts people can benefit from ICT support locally,

nationally and internationally. Tourists tend to buy products only from villages near the nature reserve. If artists in Mpume and other villages that lie further away can access tourist numbers and perhaps communicate with potential customers, they could enter the market. In the Easter or December holidays, for example, these artists could check how many tourists were expected in the reserve and when; and then they could plan what to design and how much to produce, and sell their wares along the coast. If tourism grows in the area, some residents plan to promote heritage tourism in ventures such as traditional cafés that offer traditional meals and drinks. Local artists also feel it is essential to learn from arts and crafts around South Africa, as well as find out where they could sell their products for a reasonable price, in order to make a good profit in the tourism market. Essentially, they could learn how to market and advertise their products effectively.

*Creating a communication infrastructure for business development.* Evidently, the community value business development and opportunities in the community for job creation. The rural market holds considerable potential for a variety of businesses, where information and communication are significant factors to connect remote rural communities to businesses in urban areas and even other rural communities. Access to information can provide better prices, high-level decisions on product movement, imports and exports, and qualities and quantities demanded, strengthening the forward linkage to markets (Mansell and When, 1998). External businesses can learn of rural market characteristics as well as opportunities for intervention and rural development. And when rural entrepreneurs have direct access to markets and new awareness of product prices and market conditions, they will depend less on middlemen and have greater leverage for negotiation.

#### *Access to formal education and general knowledge*

Education, so fundamental to growth in developing countries, has been seen as key to building a dynamic labour force, one that is capable of accessing and integrating knowledge into their economic and social livelihood activities, and thus able to participate in the global economy (McNamara, 2003: 50). At the local level, once rural people have access to information and expertise, they can address impediments and vulnerabilities that previously blocked them from



**Figure 5.** Local craftspeople at work.



**Figure 6.** A sparsely stocked rural classroom.

opportunities to improve their lives. They should then be able to participate in sectors that require greater skills and therefore offer new or higher income.

Areas calling for development include:

**Educational research.** The teachers at Mpume value access to educational material that can support teaching and enhance classroom activity. Research can yield a diverse range of educational material that teachers can use to design lessons and curricula that suit the needs of their students. Students too can access information to support insightful research and learning. Research interests indicated include

learning about cultures, science, general economic aspects, politics, the weather, and so on. This extra information is essential in rural schools, where educational material tends to be in poor condition and is always severely limited in supply (Figure 6).

**School management.** Information flow can help to improve the administration of schools in rural areas. Access to information can enable education bureaucracies to become more efficient, effective and responsive by enhancing communication within the schools and between them and various constituencies, as well as increasing global access to knowledge and best practice in education (McNamara, 2003: 51). The teachers in Mpume say that communication is lacking at the school and thus appropriate mechanisms are not in place to deal with the poor classroom infrastructure and teaching resources. They also require updated information on teaching requirements or curriculum requirements set by the Department of Education.

**School collaboration.** When rural teachers are connected locally, nationally and globally to other educational institutions, they can share customized knowledge, materials, and databases quickly and cheaply. The local teachers want to know how other schools are dealing with the new national curriculum and would especially like to coordinate on this with other schools in similar circumstances. They would also like to be informed of concerts, fundraising events, and sports and cultural activities in neighbouring schools and collaborate to encourage student interaction and development.

*Teacher training.* Education quality in rural areas of developing countries is low, as teachers are faced with inadequate resources for teacher training and curriculum development. It is apparent that teachers in Mpume would like to learn how to teach more effectively. They specifically mentioned that they wish to learn from other teachers and educational institutions nationally and globally, and would be interested in adapting methodologies to suit their own teaching.

*Initiatives for development projects.* Education is not limited to children and the youth, but can also benefit other villagers. The community values development projects that can alleviate poverty in areas such as fighting hunger and upgrading systems to do with water and agriculture (as in the Siyazondla project). For example, the land in Dwesa is rich for farming but it is difficult to grow crops there because wild pigs tend to destroy them. It is not easy for the community to discuss this openly with government, since the law prohibits the killing of wild animals in the reserve. The residents thus need to learn of other, eco-friendly, ways to fend off the pigs and so protect their crops. But it is not only current activities that the villagers want information for. They also seek information to start new development projects.

### *Addressing health challenges*

The medical and social nets of developing countries are often weak; shortages in medical personnel, medicines and health infrastructure hamper the ability of rural communities to preserve good health and treat illness (McNamara, 2003: 54). Unlike some other villages in the area, Mpume has the advantage of having a clinic on the spot. Yet the clinic's work is still limited by a lack of information and appropriate communication channels.

Areas for development include:

*Awareness programmes.* A key problem highlighted by the clinic nurse, teachers and local migrants is the lack of health awareness in the community, especially among the youth. Improving hygiene and other health-related behaviours depends a great deal on disseminating what is known about the relationship between hygiene and health, and providing specific information on disease prevention strategies and behaviours, and on how to respond to epidemics (McNamara, 2003: 55). Some of the key challenges

in Mpume are a high rate of teenage pregnancy, ignorance of HIV/AIDS, prevalent tuberculosis (TB), and unhygienic behaviour generally. Villagers say the youth need guidance, in some cases about things that are not easily discussed with older people, who then cannot readily convey the information that is needed. Another challenge is how to disseminate information to the community as a whole; the clinic nurse needs informative posters to guide health workers in conducting health talks on any new health aspects, for example. This is all the more of an issue because apparently the committee members linking the clinic to the residents are not as effective as they could be.

*Remote medical consultation, diagnosis, and treatment.* The Mpume clinic is some 49 km from the nearest hospital. In an emergency the clinic nurse usually calls the ambulance, but it can take up to 4 hours to arrive (and she usually has to use her own mobile phone at her own cost when the clinic phone does not work). To make matters worse, the clinic is closed at weekends. Each village has trained health workers who deal with common ailments, but there are only a few of them and their skills are limited. They need to be able to consult with senior practitioners in the case of medical complications including outbreaks of disease.

*Communication with neighbouring clinics and villages.* The nurse at Mpume needs to keep in touch with health workers roundabout, to disseminate and receive current and new health or medical information. At present, the best that can be done is that health workers are required to visit the closest clinic once a week to receive information. The clinic nurse at Mpume also phones them at need (on her own mobile phone if the clinic phone is out of order), or she asks a patient to pass on a letter or message to the health worker in their village. This is sometimes adequate for individual needs but is not good enough as a basis for healthcare.

*Maintaining communication with chronic patients for disease control.* The clinic nurse expressed a need to disseminate new information to chronic and extremely sick patients – for example, to those diagnosed with HIV or TB, or to those who have stopped coming for treatment. HIV patients need to be contacted about their monthly programmes at the clinic. When they do not come or refuse to attend because they feel that the treatment is not working, the clinic needs to know

what is going on and then intervene. Disease control is another case where communication is vital. A TB patient who leaves the area without being treated in time, for example, needs to be told what to do for their own health and others'.

*Access to new treatment methodologies.* The Mpume clinic needs access to new treatment methodologies, nationally and globally, to use in the area. For instance, the nurse mentioned there is a new treatment available in South Africa for diarrhoea, which the local clinics are still waiting to receive.

### *Rural empowerment and participation*

Rural empowerment implies the participation of rural people in economic, social and political matters. The government, private sector and civil society should therefore work together to manage development in a way that is not only equitable, gender-balanced, transparent, efficient and accountable, but also truly participatory. This approach is key to reducing poverty in a sustainable way (Gerster and Zimmermann, 2003: 22). Mpume needs government support to tackle its development challenges, and this also means village liaison to convey what is required and to hold government accountable. Inefficient or nonexistent service delivery by government is a major problem identified in the household survey and focus groups discussions. The issues most cited were the need for a community hall and a raised bridge (against times of flood that cut the village off from the outer world) and the facts of no electricity, no police station, poor roads, and no toilets and sanitation. The youth and migrated residents also highlighted the need for a secondary school (nonexistent in most Dwesa villages).

Areas for development include:

*Information for civic education.* Villagers need to be informed of their human and constitutional rights, laws, and regulations and voting procedures (Gerster and Zimmermann, 2003: 27; UNDP, Accenture and Markle Foundation, 2001: 15). This can empower the people of Dwesa to monitor election processes – as they do show an interest in national and international politics. Villagers would also be informed of what they are entitled to require of government and so expand the reach and accessibility of services and public infrastructure.

*Strengthening the public voice of rural people.* Rural representatives in Dwesa need access to direct communication channels for effectively and continuously conveying their development challenges to government bodies and participating in the democratic process of their country. In fact, direct liaison with the administration to keep officials accountable is the only likely way to improve the quality and responsiveness of government services.

### *Establishing community networks*

The cultural heritage of a community – its social norms, values, attitudes and social networks – is accepted as a key source for economic growth and development (Mwabu and Thorbecke, 2001: 13). It influences how people understand their environment and the strategies they use to cope within it. Mpume villagers value the harmony of their lives, also known as *Ubuntu*, which leads them to collaborate together with nearby villages in Dwesa, for cultural events and sharing ideas and solutions for rural development. The residents also value keeping in touch with relatives who have migrated elsewhere.

Areas for development include:

*Establishing networks among communities in Dwesa.* Villagers (and migrated people) want to be informed of key community upgrade developments around Dwesa and cultural events in other communities, such as traditional ceremonies, weddings, funerals, sports events and church activities. Villagers also believe it is important to know the crime levels in other villages, and communicate with communities about how they deal with the crime. A police forum is seen as needed to control the increasing crime levels in certain communities.

*Communicating with family.* The villagers value family ties and need to keep in touch with family members, especially as there is a significant level of out-migration in search of better job opportunities and standards of living. This will keep them abreast of their relatives' lives, health and wellbeing, and about safe journeys or road accidents when they travel. The migrants will be able to stay up to date about other family and friends who have migrated too, perhaps to the same area as they have, and about the status of property and livestock in Mpume. The migrants can also sometimes relay information about job



**Figure 7.** These computers are in constant use by the youth.

opportunities in Cape Town, for example, for the youth in their families.

### Entertainment

Comments from the youth highlight a few information needs for local entertainment. They, and the teachers too, see some of the youth tending towards drunkenness and criminal activity because of boredom and a high level of unemployment. Entertainment is obviously not a panacea, but the youth feel that information on national and global entertainment trends would keep them occupied. For instance, they would like to know about the latest music, fashion, celebrities visiting the country; and they would like to e-mail friends, do online dating, and so on (Figure 7 records the great interest shown by the youth). The teachers, youth and migrated people also mentioned that there is good football talent in Dwesa. The enthusiasm about football may, of course, be due partly to the 2010 World Cup held in South Africa – but the community do feel they can contribute to sports in South Africa, and cultural talent too, and for this to happen they need to get the right exposure nationally, and be informed of how to do so.

### Current technology and media use in Mpume

**Traditional ICTs.** Traditional ICTs – the basic kind that would be found in many a home (McNamara, 2003) – are radio, television and to some extent newspapers. They are usually the most common and probably most affordable for ordinary people. In Mpume, the most commonly used ICT is the radio, which is available

in most households. Televisions also exist there, but only a few, and newspapers are also rare. In Figure 8, 94 percent of households do not have any form of electricity, with only a few households having the alternatives of solar power and generators. This fact limits the use of traditional ICTs, although they are more common than modern ICTs.

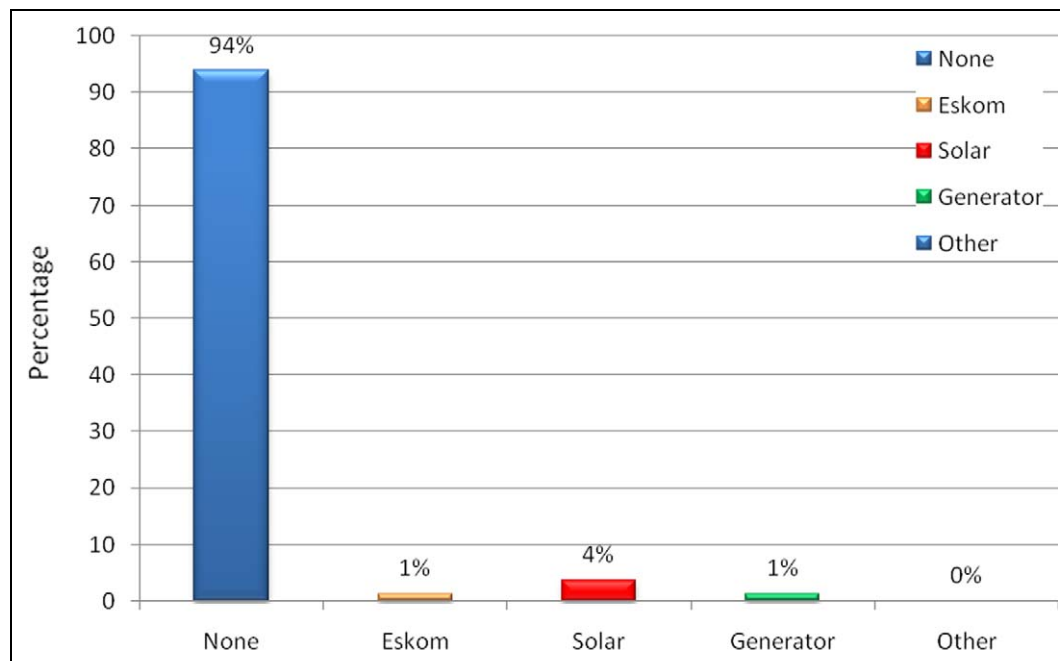
Of the 80 households total surveyed, 57.5 percent either have a radio of their own or have access to radio. The reachable band within Dwesa gives news and some other information, and entertainment in the form of sport, music shows, chats and general talk show discussions. All these are popular. Radio is the most used of the traditional ICTs in Mpume; respondents explain that radios are cheap to buy and maintain. Most are battery powered, with batteries available at the local 'Yizo Yizo' Shop in Dwesa. There are a few wind-up radios as well.

Only 6.25 percent of the households own or have access to a television set. Traditionally television is for viewing in the home. The only exception is at the local Yizo Yizo Shop, which allows public viewing during business hours. Some households are known to own televisions and DVD players just as status symbols; they cannot use them because they have no kind of electricity available. Most viewers follow the news in various languages, and sports and documentaries where viewing is permissible.

Newspapers are rare in Dwesa, where there is a limited market, and a problem of accessibility. They are only available at the nearest town, Willowvale, which means paying for transport as well as the newspaper itself. Those privileged with Internet in schools are able to view the newspapers online and read news of interest (including occasional mention of their own Mpume School!). The main paper of interest is the *Daily Dispatch* of East London, as the nearest local publication.

**Modern ICTs.** Modern ICTs are more sophisticated and require special skills to use them (Thioune, 2003). In some cases, one would need formal training first. These ICTs range from computers to related products such as automated teller machines (ATMs), mobile phones and video games.

Computers were first introduced to the Mpume community through the Siyakhula Living Lab in February 2006. The computers that have been established in the schools are for formal teaching and some broader training for the students, teachers and members of the community. Extensive training for



**Figure 8.** Power availability in Mpume.

computer use has been based on the Open Office, Edubuntu software. Those who have been trained are mostly familiar with Open Office Writer, Calc and Presentation (identified in Microsoft Office as Word, Excel and PowerPoint respectively). They have also learnt how to use the Internet. Use of e-mail has soared as a communication tool, and there is great interest in browsing for information on various websites; most users, especially the teachers and other adults, are likely to read news online about subjects such as sports and the world economy (Wilson, 1999, whose comment still holds true today).

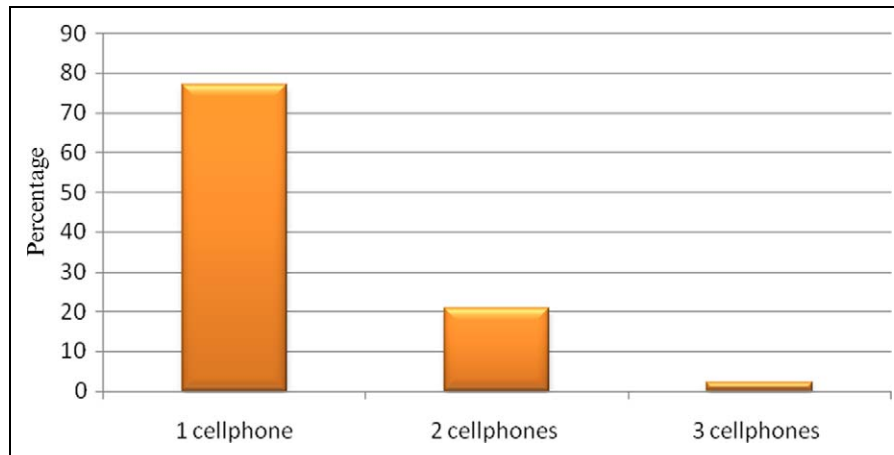
The present survey finds that some people use the Internet to register for free online services like sending short messages on the MTN network. Some users who have seriously enhanced their Internet skills are able to download forms and apply for such services as the South African Revenue Service. Both teachers and students use the Internet to seek academic information for their studies, and this has greatly compensated for the lack of libraries in Mpume schools. Wikipedia and Google are used as search tools, among others. The teachers search mainly for information to use as teaching material, while the students tend to use the Internet to research a given assignment.

The Siyakhula Living Lab offers Mpume the opportunity to become computer literate; yet at the time of the 2008 survey only 53 percent of the villagers actually believed they had access to these

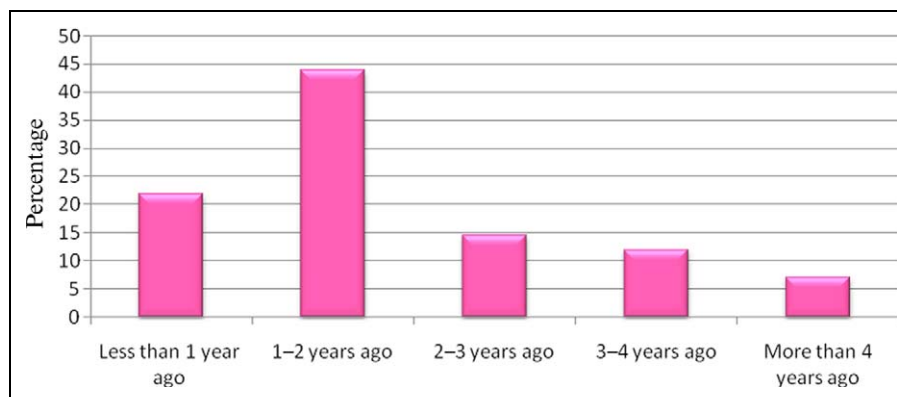
computers. The rest are either still unaware of the project, or perceive the computers as only available for students and the younger population (a popular perception among the middle-aged to older population); and of those who believe they have access, 89 percent still do not know how to use a computer. Only 11 percent are confident they can use a computer. Appropriate mechanisms need to be put in place to create awareness of the Living Lab and its significance in supporting local livelihoods.

Mobile phones are the prevailing modern ICT in rural areas, and so they are targeted by our study as a tool that could support development there (a view generally shared by other researchers in the field of ICT for development). However, even though mobile phone use has soared and proved its worth in developing countries, network providers often appear sceptical about rollout in rural areas (Siochrú and Girard, 2005: 9). They do serve some rural areas, but 'coverage does not necessarily mean access to poorer sections of the community' (Siochrú and Girard, 2005: 9). Mpume is a case in point, where only 23 percent of the residents actually own a mobile phone and only 27 percent more can borrow one. Per household, this averages out at 0.7 people owning a mobile phone and about one person having access to one.

Most of the owners (77 percent) have only one handset (or have only ever owned one mobile phone, limited to one network), as shown in Figure 9.



**Figure 9.** Number of mobile phones owned.



**Figure 10.** When did you first get your mobile phone.

Having just one handset appears to be good enough for their limited communication needs, but about 21 percent had two. This could imply that those with money to spare simply chose to buy a second handset, but it is also a fact that some residents have relatives working outside Mpume who could buy them a mobile phone as a gift. Only one person actually owns three mobile phones.

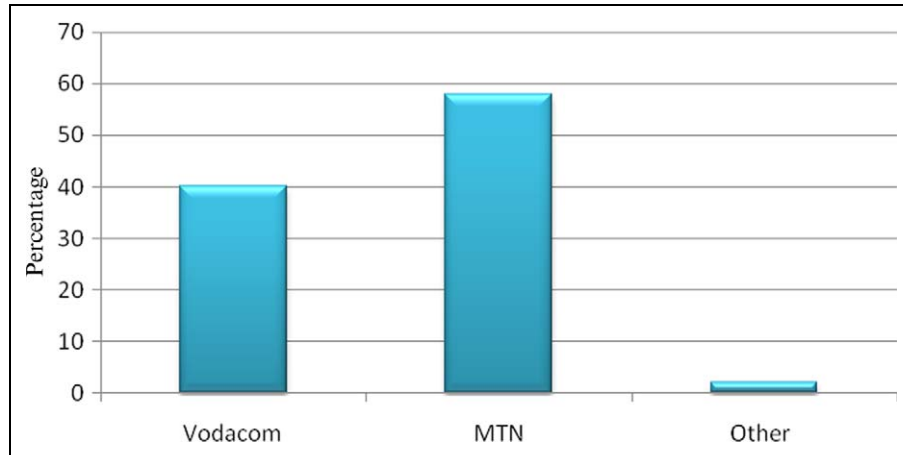
Figure 10 shows that 22 percent of those with mobile phones have owned them for less than a year. Few mobile phones were owned for 2 to more than 4 years, perhaps because of the very low levels of income in Dwesa, with an economy that has little surplus to spare on such assets (Kavhai, 2007). But why the quite remarkable percentage (44 percent) who have owned their phones for 1 to 2 years? Our findings suggest that most mobile phones are gifts

from migrated residents who leave Dwesa in search of employment (Palmer, Timmermans and Fay, 2002). Other factors could be that mobile phones have got cheaper over the years, and more affordable network packages have become available. Further research may reveal more.

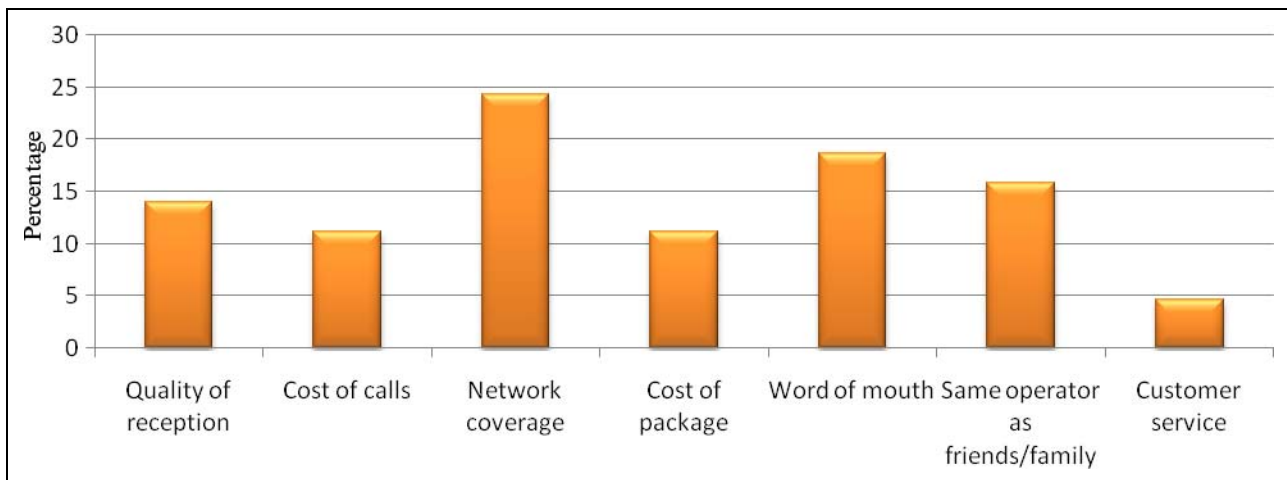
Most local owners use the MTN network (58 percent), with the rest on Vodacom (40 percent) except for one person on a third network, Cell C (Figure 11). MTN is preferred even though the Vodacom network tower was built within Mpume, giving a better signal; but the Vodacom tower suffers from frequent electrical blackouts. Figure 12 shows a range of factors influencing the choice of network in Mpume.

Figure 12 shows that users weigh up the network coverage (24 percent) and consider the options of word of mouth (19 percent), having the same operator





**Figure 11.** Cellular network use.

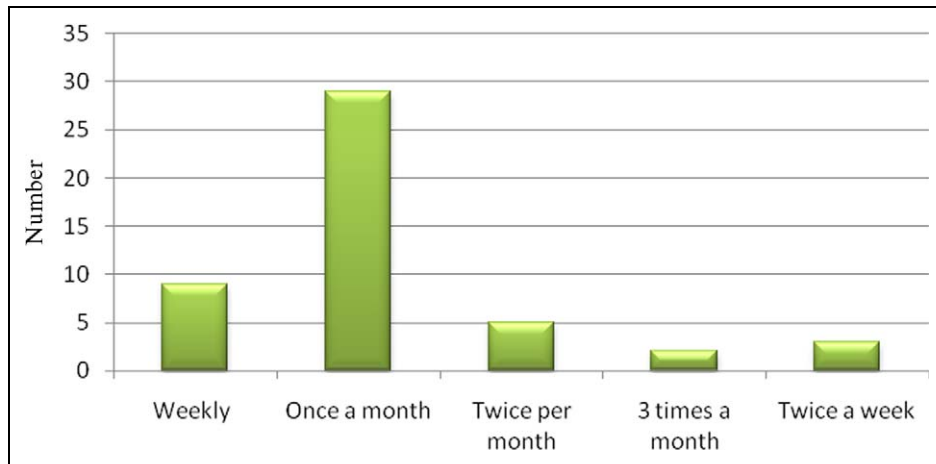


**Figure 12.** Factors which influence network choice.

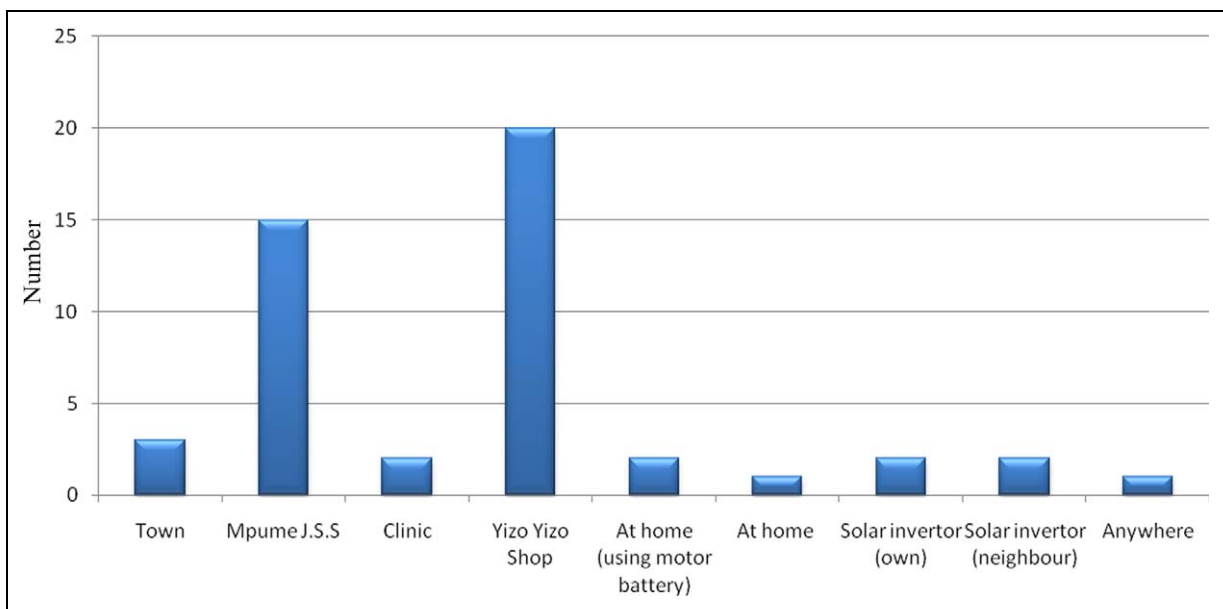
as family and friends (16 percent), quality of reception (14 percent), cost of calls (11 percent), cost of package (11 percent), and customer service (5 percent). Network coverage and quality of the reception both limit the access of users according to where they are; some areas are remote, and the mountainous terrain blocks some parts. More MTN users (57 percent) than Vodacom users (43 percent) say that lack of network coverage is a problem. Villagers are also influenced by which network a friends or relatives use. Since word of mouth plays such a big part in people's lives, this is a major factor in itself – perhaps MTN is popular because that network was the first to arrive in Mpume and people feel more comfortable with it and encourage others to use it too. The cost of calls and package also

sway the choice, given the general low income of households. Lastly, although not a significant factor, the quality of customer service also influences the choice of 5 percent of mobile phone owners.

The cost of airtime hugely affects how mobile phones are used in Mpume. The few shops and individuals have a near-monopoly in selling airtime, so they raise the price. On average, most subscribers pay between R2 and R6 (South African Rands) extra for vouchers valued between R12 and R30. According to a local shop owner, the lower the price of the voucher, the less the difference in extra money paid. This extra fee also has a bearing on mobile phone use, when people cannot afford the extra. Frequency of purchase is about three times a month, and for small



**Figure 13.** Frequency of airtime voucher purchase.

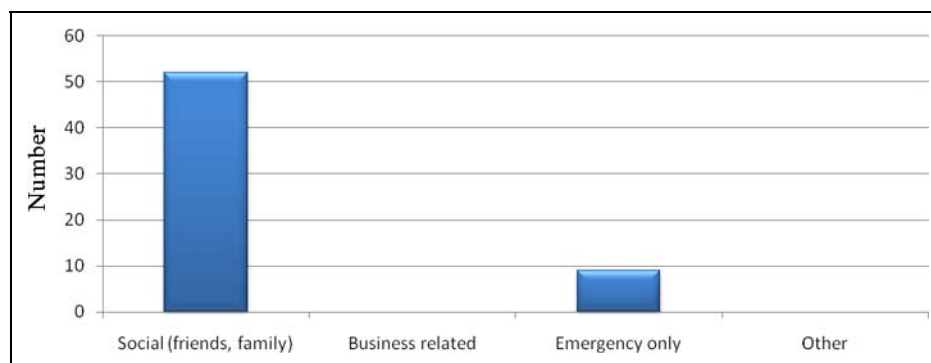


**Figure 14.** Local places to recharge mobile phone batteries.

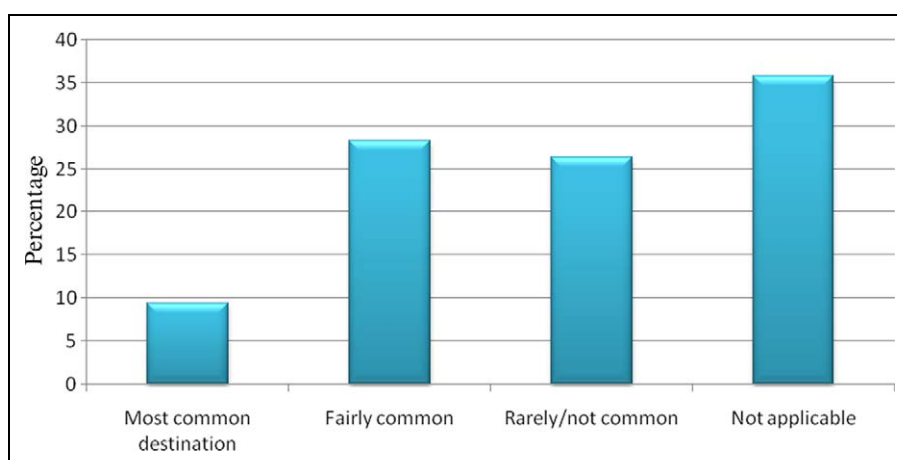
vouchers of between R10 and R15. As is apparent in Figure 13, most customers can only afford to buy airtime once a month, and in special cases weekly or twice a month.

Since 94 percent of households do not have any form of electricity, villagers rely on other places or ways to charge their batteries. Most people use the nearest power source – the schools, the local shops, home setups where solar power is available – and the nearest town, Willowvale (Figure 14). The local Yizo

shop is the most popular of these options, perhaps because it is more accessible than the school, especially at weekends and during the school holidays. The shop, like the school, is seen as central and hence accessible. Mpume Junior Secondary School is the other main source. Available electricity is not the only factor; there is also what it costs, which ranges from about R3 to R5. These figures may look small, but they come on top of the extra that users have to pay on buying airtime. The accumulated costs pose



**Figure 15.** The uses of mobile phones in Mpume.



**Figure 16.** Local calls/SMSs in village or nearby villages.

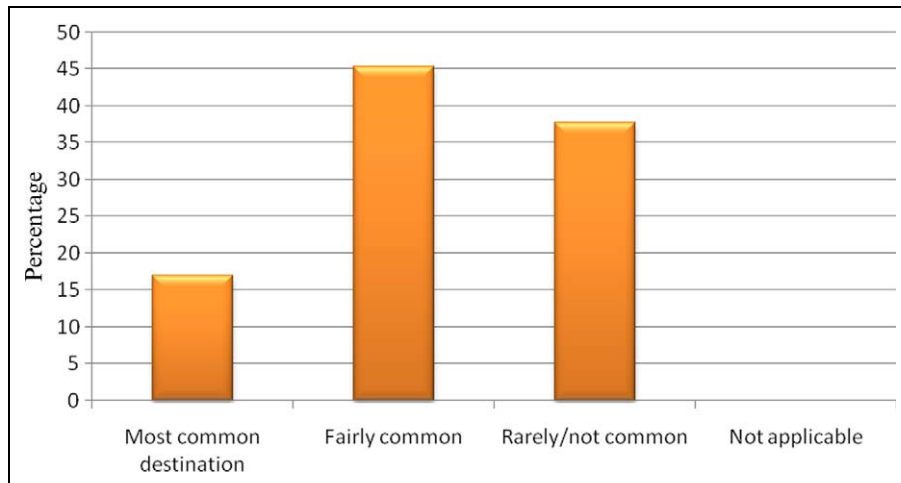
a challenge for households with low income and high unemployment (Kavhai, 2007). Any one of the costs may be too much, and this affects consistent use of mobile phones.

Mobile phones in Mpume are used typically for social or emergency purposes. Figure 15 shows that social reasons predominated, mostly to promote social ties and family bonds. A marginal use is for emergencies such as calling for medical help and or any other alerts of concern. Apart from this, mobile phones are not used for anything else. Business is so limited in Dwesa, word of mouth is enough for it (Kavhai, 2007). Villagers are not aware of extra information a mobile phone can provide, such as access to government information, banking services and the Internet. Some people own 3G mobile phones but apparently do not use them for anything but SMSs and phone calls. These 3G phones are thus a status symbol rather than a tool to access information.

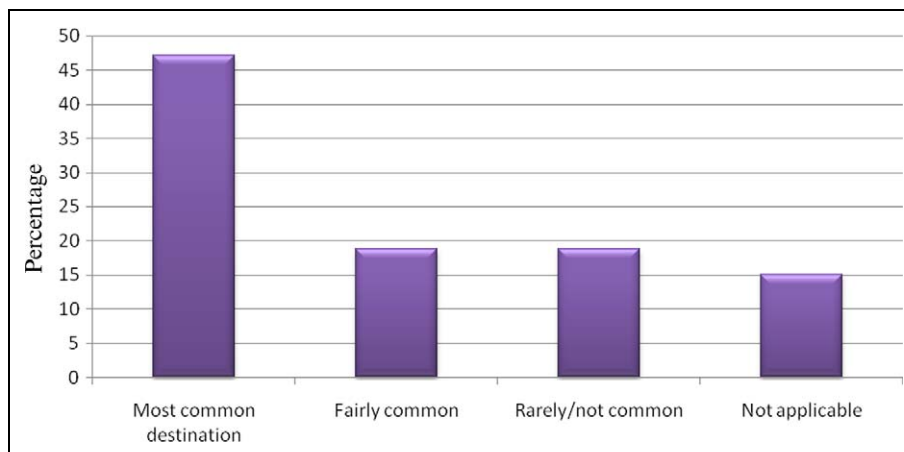
Clearly there is usage of mobile phones, but what is the most common destination for the calls and SMSs? The four destinations observed are: within Mpume or nearby villages, the closest town, across South Africa, and international. Choice of calls and SMSs vary depending on their destination. Only 9 percent of the respondents used their mobile phones for contact within Mpume, since word of mouth and other traditional systems were preferred and were free (Figure 16). As we have noted, usage may be more frequent, and fairly common, for communicating with nearby villages.

Usage patterns become more apparent in contacts with the closest town (Figure 17). This destination is viewed as a most common (17 percent) to fairly common (45 percent) destination of calls and SMSs. In fact, every respondent had made such calls.

Communication across the rest of South Africa appears to be the most common destination (47 percent) (Figure 18). This may also confirm the high levels of



**Figure 17.** Calls/SMSs to peoples in the closest town.



**Figure 18.** Calls/SMSs to peoples through out South Africa.

migration that result in relatives residing in towns and cities across South Africa. Families and friends keep in touch across South Africa a great deal with mobile phones, as confirmed in Figure 3. Yet some people do not make calls to the rest of South Africa, either because they have nobody to communicate with or they prefer to wait for their relatives and friends to call them.

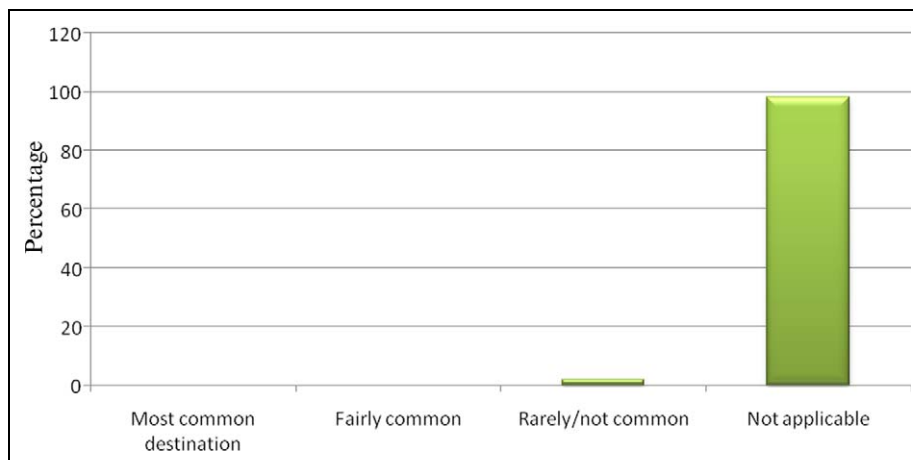
Within Mpume, there is no significant use of mobile phones to contact people outside South Africa (Figure 19). Only about 4 percent confirmed making such calls, and then only rarely. A significant 96 percent see them as unnecessary; apart from the expense, most people do not have anyone to contact outside South Africa anyway – the village has no real international ties.

## Challenges and recommendations

In considering the challenges facing the Siyakhula Living Lab project – which are many and for the most part technical – we restrict ourselves here to those uncovered by the Baseline Study. They are largely *social* and *economic* in nature, and could be generalized as applicable beyond Mpume. The challenges are discussed one by one below, with recommendations on how to address them.

### Challenge 1: Linking technology to livelihoods

Mobile phones are most commonly limited to social use. Yet there are other potential uses, especially with the spread of 3G. The Internet may also be accessed



**Figure 19.** Calls/SMSs to people outside of South Africa.

via the school computers by people other than learners, but not much use is currently being made of this service.

**Recommendations.** *Appropriate* structured training should be introduced plus awareness programmes on accessing and using the Internet via both computers and mobile phones. All courses should be accredited as qualifications within the South African grid. The Siyakhula Living Lab has no formal computer literacy course yet, and training is quite sporadic. Under such conditions, villagers quickly lose interest. For example, the craft women were told that they could use the Internet to market their products, but they have not been trained for this and they have not seen any results, so they have not made the project part of their working life. There has been a lack of motivation to continue with training anyway because there is no structure, and there is no accredited certification and thus no proof of computer literacy to assist trainees when they apply for jobs. If the Village Connection project is to succeed, and services associated with it (such as banking, education, and dealing with government) are to be accessed, then formal training needs to be set up that is relevant, for this kind of community, and delivered in isiXhosa.

### Challenge 2: Expertise and knowledge

Some residents were unaware of the potential of their mobile phones, especially the middle-aged to older population.

**Recommendation.** While *certified* training and awareness programmes such as those recommended above may not be necessary for older people who are unlikely to become job-seekers beyond Mpumbe, all mobile phone users could benefit from training to show what their mobile phones can do and to familiarize them with these functions. Influential individuals and groups in the village should be identified and trained; they in turn may encourage others to use such technology. This groundswell of convinced users will also help the Living Lab to become more meaningful locally and so strengthen its capacity to help people.

### Challenge 3: Affordability

Mobile phone ownership and use is limited because of low levels of income. The Village Connection project aims to address this challenge by offering cheaper connections *locally*. There will still be some costs, however, and the Village Connection will not cover national connections. Most households only buy airtime once a month at a cost of about R12 plus R3 that the schools (the only source of mains electricity) levy for recharging a mobile phone.

**Recommendation.** Residents need to be informed that, if they can access services such as banking and government business via mobile phones, they save on transportation costs to Willowvale or Idutywa, which cost more than the airtime. Once this is known and experienced locally, residents may be willing to spend more on mobile phone services.

#### **Challenge 4: Limited use of mobile phones and computers not connected to affordability**

Residents are accustomed to using methods of communication besides phones and texting when communicating within Mpume. Most people said the main advantage of living in the village was having everyone within walking distance and being close to family and friends. Yet mobile phones are valuable for those who are too sick or disabled to inter-visit; for emergencies and contact with distant relatives and friends the mobile phone supplements traditional methods of communication. Unfortunately, frequent and unnecessary use of the latest mobile phones is a major marker of modernity and therefore social standing in the village, and may displace direct communication, especially among younger people; but the benefits to others who really need mobile phones within Mpume remain.

**Recommendation.** Create awareness of mobile phones and e-mail and the Internet as a *complement* to traditional communication within Mpume. Get the message across that mobile phone and Internet technologies are best employed for distance communication (including business) and in emergency, and should not displace traditional methods of communication. Frivolous use should not be admired.

#### **Challenge 5: Jealousy**

Associated with Challenge 4 is the ‘tall poppy’ syndrome in poor rural communities where there is little or no development: people who appear to prosper more than others may be seen as benefiting at the expense of others. This belief can inspire strong envy, leading to jealous and in some cases punitive action. The household that embraced the chicken-raising project early on and is now enjoying success may find all its chickens stolen, for example, with no one keen to identify a culprit. Development projects frequently fail for this reason. Those who acquire computing or 3G skills to improve their lives and fortunes may also provoke jealousy and destructive reactions.

**Recommendation.** Anticipate the problem at an early stage by getting as many people involved in the project as possible. Spread the benefits widely and quickly. If the Village Connection project is to be managed and operated by a local entrepreneur, it would be wise to hold a community meeting to propose a certain individual and motivate the choice, or the villagers

should choose an appropriate candidate. The benefits of privatizing the service and of locating it in the schools should be spelt out, preferably by the entrepreneur; it would certainly be in the entrepreneur’s interests that local people have a good experience of their Internet café and want to support it.

#### **Concluding remarks**

The Baseline Study proved informative on how to possibly use ICT through the Living Lab concept to aid development in marginalized areas. A collaboration of diverse local interest groups helped to frame the study so that it would not only advise external stakeholders of the current status of the community but also raise a general awareness in the Mpume community of ongoing challenges and involve the villagers in identifying possible solutions to alleviate local poverty. Altogether, the report has endeavoured to respond on the key research questions posed. Here follow concluding remarks from our findings.

A sad but not unexpected finding of our household survey and focus groups in Mpume was of no significant change in the local socio-economic situation when compared with findings from other villages in the general Dwesa-Cwebe area 5 years before, and even 5 years before that. Considering that Dwesa-Cwebe is *not* representative of the whole region in terms of development potential, having won a historic land claim and grant on a unique protected area as at least the basis of a development plan and incentive for development partnerships, this finding is indeed an indictment of those responsible for developing the area. Measures already in place consist mainly of interim poverty relief projects. Addressing the problem of poverty requires much more than that.

Quality of life in non-material terms still approximates to what one expects of small rural communities, but it is severely threatened by pathologies linked to economic stagnation and partial modernization. Nevertheless professionals such as teachers and out-migrated individuals still value particular ways of life in Mpume. If this trait of Mpume has persisted through historic and deliberate underdevelopment and the severe disappointments of the post-1994 period, then the minimum scale of development that will secure its persistence into the future may be quite modest and, as such, entirely obtainable.

We can gauge the readiness of residents to use ICT to develop their economy and foster their own welfare by examining the existing communication patterns in

the village, priorities, information needs, and current technology and media use. Both traditional and modern communication methodologies have been used, the choice depending a lot on the distance involved. People rely most on traditional ways (word of mouth, community meetings and so on) for local contact, and on the modern mobile phone and public phone for surrounding villages and across South Africa. A general review revealed local information needs which provide a general understanding of needs that ICTs can support through new and existing development programmes. The list is not exhaustive, though, and each priority and information need should be explored as the Living Lab progresses, to lead on to other development programmes. The introduction of the Siyakhula Living lab has nevertheless enabled information access and production through computers. Some residents should still be encouraged to use the computers, which could now be a task for the Village Connection (VC) component of the project. Other challenges to community involvement may also need identifying; they should be addressed with sensitivity. Mobile phones are the prevailing modern ICT in use, although only a quarter of the residents actually own one. Several factors influence the choice of network (Vodacom or MTN), and not just connectivity or coverage; this means that the VC project must be alert to local thinking if they are to promote their own VC service. People weigh up word of mouth, peer influence, and the cost of the package, for instance. Affordability is a key factor, especially the cost of airtime, so an affordable service fee should be considered. Mobile phones are mainly used for social purposes, but perhaps the community will be prepared to spend more on airtime if they learn of other services and functions the mobile phone can provide. In a range of ways, the villagers have indicated that they are ready to become ICT partners. However, the VC project needs to work closely with them to build involvement and understand the obstacles that can limit project success or sustainability. We believe that this report provides a foundation on which all stakeholders in the Living Lab can build.

### Future research

The Baseline Study is only the first stage of evaluation in the ICT project. Evaluation should be a continuous iterative process to elaborate on and develop key aspects highlighted in the baseline study. Subsequent to the Baseline Study, future evaluation domains that will be applied in the Siyakhula Living Lab include a

needs assessment, programme theory assessment, process assessment, outcome/impact assessment, and scalability assessment; all essential for the comprehensive evaluation of ICT4D projects.

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