



ICT for Sustainable Development: Evidence from Nguruman Community Knowledge Centre, Kajiado County, Kenya

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ABSTRACT

For over a decade, development partners have advocated the application of ICTs as tools for poverty alleviation especially targeting the agricultural sector. To provide an in-depth analysis of the impact of the CKC on the Nguruman community, the participatory ethnographic research methodology, combining participatory techniques and ethnographic approaches, was used. The use of this approach with the potential to feed into action research. I selected certain elements of the Ethnographic Action Research (EAR) developed by Tacchi and others. This research was undertaken in Nguruman, a rural Sub-location situated in arid and semi-arid land within the Olkiramatian Group ranch about 40 kilometers from Magadi town at the foot of the Nguruman escarpment in Kenya. The findings show a general view of Nguruman as being relatively developed. Participants originally from Nguruman compared its current state of development to earlier years and said it is developed. However, participants who are not originally from Nguruman say the area has considerable development when they compare it with other communities in Kenya. Like the participants from the focus groups, those from the interviews described development in terms of infrastructure such as roads, communication services, community institutions, and socio-economic conditions such as an increase in population, cultural issues, and education. Most of the participants, especially those originally from Nguruman, mentioned that the infrastructure of Nguruman has improved when compared to its former state some years back. For all the participants, the perceived influencers of the development of Nguruman were commonalities in the emerging issues such as gender and cultural issues, illiteracy, and the value of education. A comparison of the participants' communicative ecologies reveals different communication and information patterns and activities unique to each individual. Each individual uses different ICTs and links these ICTs to his/her social network to enhance communication and information patterns. Based on the findings, it is recommended that development communication that emerges from successful rural development calls for the conscious and active participation of the intended recipients at each phase of the development process. Rural development cannot occur without changes in the attitudes and behaviors of the people concerned. Emphasis should be on the planning of communication initiatives, focusing on dialogue rather than one-way communication as support to development initiatives.

Keywords: ICT, Sustainable Development, Rural Development, Digital Divide, SDGs, Communicative Ecologies

I. INTRODUCTION

The expansion of information and communications technology has the potential to accelerate human progress, close the digital divide, and create knowledge societies. According to Vyas-Doorgapersad (2022), ICT improves the implementation of the SDGs by encouraging global coordination and cooperation, supporting technology transfer and capacity building, enhancing multi-stakeholder partnerships, and facilitating data monitoring and accountability. As a result, there is increasing evidence of the potential benefits accruing to the use of ICTs (Gendall, 2008; African Partnership Forum, 2008; Zhao, 2008; Chapman & Slaymaker, 2002) as a strategic component within the field of Development Communication (Melkote & Steeves, 2001; Servaes, 2007) for alleviating poverty.

Globally, there has been a growing consensus on the positive role ICTs play in development, particularly in developing countries. This highlights India's ICT success story. India is the second-fastest-growing economy globally and much of its growth attributes to the rapid expansion of the export-oriented ICT sector however, research into ICTs in the rural sector is at a rudimentary stage (Tiwari & Sharmistha, 2008). In the Global South, successful ICT projects contribute



to strong initial and sustained training, accessibility of necessary resources, help in expanding the market, offer government and societal support and create good networks in rural communities (Maier, & Nair-Reichert, 2007).

The lack of sustained per capita income has therefore been the major contribution to poverty in Kenya (World Bank, 2010c). Half of the population in Kenya is below 15 years of age and as a result, there are high dependency ratios that have placed high demands on social services such as health care and primary education. In addition, increased fertility rates, high mortality, and death rates, especially among infants, low and declining life expectancy, and declining growth rates, due to the HIV/AIDS epidemic characterize Kenya's population (Government of Kenya, 2005a).

Presently, Kenya has been experiencing an economic, social, and political transition with positive indicators in its many sectors. These changes have been boosted by the political shift, which started after the new government – the National Rainbow Coalition (NARC)- took office in 2002 when multi-party democracy was introduced that saw the exit from power of the Kenya African National Union (KANU) that had ruled for 40 years. This resulted in unprecedented optimism that has expanded the democratic space giving Kenyans the ability to enjoy freedoms. The establishment of a new constitution in August 2010, marked the “birth of the second Kenyan Republic” which in many ways was laid in 2008 during the post-election violence that left many dead and a peace agreement forged between the two leaders⁷. The former constitution was in place since 1963 after Kenya gained its independence. Kenyans viewed it as a remnant of the colonial epoch. Many provisions in the new constitution will take effect immediately, changes to the governing structure will gradually be phased and the new set of laws will not be operationalized fully until the 2012 presidential elections have taken place (Onyiengo, 2010).

II. Problem Statement

For over a decade, development partners have advocated the application of ICTs as tools for poverty alleviation especially targeting the agricultural sector. Recommendation and implementation of different approaches such as the establishment of ICT initiatives like the Nguruman CKC (Kariuki, 2009). The establishment of Nguruman CKC was to bridge the digital divide and deal with infrastructural issues in the remote rural community of Nguruman. There was the need to address such issues by providing information on markets, and prices of commodities, streamlining communication between buyers and sellers and generally encouraging the use of modern technologies.

While the argument stands, ICTs remain an important component of development in developing countries, calling for consideration of their effective application in rural areas. Due to this, the focus of this research project is to determine the impact ICTs for development have in Nguruman a remote, rural community in Kenya, through the Nguruman Community Knowledge Centre (CKC). Nguruman CKC is a telecentre established in 2003 by World Corps Kenya, a development organization aiming at bridging the digital divide by providing access to information and resources including ICTs for the development of the community (World Corps Kenya, 2007).

II. LITERATURE REVIEW

2.1 Sustainable Development

Development describes social, economic, and political changes at individual and group levels, and at other times it describes social and economic indicators such as GDP, GNP, life expectancy, and income levels, among others (Fonchingong, 2005; Melkote & Steeves, 2001). Development is usually understood to involve concepts of ‘progress’ and of ‘growth’ (Unwin, 2009). Further, Melkote & Steeves (2001) state that understandings of development differ significantly. However, most agree that development means improving society's living conditions. On the contrary, there is much debate as to what constitutes ‘improved’ and how these conditions are achievable.

Since WWII, development came to be synonymous with an increased (per capita) income, Gross National Product (GNP), or growth and achieving standards of living equivalent to those of the industrialized nations. National unity, cultural sovereignty and identity, and, the development of social infrastructure (in health, agriculture, education, transportation, and communication) were integral parts of achieving development in the newly independent developing nations (Servaes, 2007; Melkote & Steeves, 2001; Banerjee & Loo, 2002).

Sen, (1999) defines development as freedom. Freedom in his view is vital to the process of development. Freedom (substantive) is the capabilities an individual has and enjoys to lead a kind of life that is of value (Otiso & Moseley, 2009). Development in this view is a process of increasing the real freedoms people benefit from and this is in contrast with the narrower understanding of development as industrialization, rise in personal incomes, social modernization, or



technological advance. In this view, issues such as poverty, poor economic opportunities, tyranny, and, systematic social deprivation among other cases deny basic freedoms to a vast number of people (Sen, 1999; Banerjee & Loo, 2002).

2.2 Theoretical Perspective

During the 1970s, critics of the modernization and diffusion theories proposed a range of development models that emphasized understanding the specific cultural environments of intended beneficiaries. These development models are collectively called the “participatory approach” (Nobuya, 2007, p.7; Ritchie, 2007) to development communication. These approaches emerged from the multiplicity or ‘another’ theory (Servaes & Malikhao, 2005; Servaes & Malikhao, 2007a; Servaes & Malikhao, 2007b; Servaes, 2000; Ritchie, 2007). The model is more rooted in cultural realities of development rather than in the political-economic dimension (Mefalopulos, 2008; Servaes, 2000; Servaes & Malikhao, 2007a; Servaes & Malikhao, 2007b). Development in this viewpoint is seen as the “...examination of changes from ‘bottom-up’, from the self-development of the local community [...] (Servaes & Malikhao, 2007a, p.14).

Emphasis is on the facilitation of exchange of opinions among the various stakeholders involved in the development project and aims at taking into account the grassroots perceptions in the planning of the project and mobilizing them in the development activities. Including opinions of the marginalized, underprivileged, and poorest sectors ensures that communication processes are more inclusive and open-ended and provides a setting to address not only immediate issues but also structural problems (Bessette, & Rajasunderam, 1996; Nobuya, 2007; Servaes, 2008; Tufle, 2009).

The participatory theory has also been subject to criticism. Despite its benefits, participation has remained a highly praised term but a poorly adopted one owing to controversial issues surrounding the concept of ‘participation’ (Waisbord, 2000; Nobuya, 2007; Mefalopulos, 2008; Singh, 2005; Morris, 2005; Tufle, 2009). An abundance of the literature shows a general agreement that there is a lack of a standard definition of the term ‘participation’ (Mefalopulos, 2008; Nobuya, 2007; Singh, 2005; Melkote, & Steeves, 2001; Tufle, 2009). Various development practitioners have their understanding of participation but most would agree today that it has multiple definitions related to the context. These different views determine their application and implementation. One approach promotes vigorous participation in development from the grassroots level but the other approach specifically rejects its general application (Mefalopulos, 2008; Singh, 2005).

McPhail (2009) argues applying participatory communication to existing projects becomes an obstacle given the subjective, non-quantifiable terms that describe the approach. Consequently, implementation and evaluation become difficult when dealing with real practicalities. Some participation approaches are relatively strategic and the genuineness of intentions to involve the indigenous population is questionable due to the lack of a fundamental definition of the term ‘participation’ (Jacobson, & Storey, 2004). According to Tufle (2009), there is no agreed definition for participation. Despite these practical impediments, there is clear evidence that the participatory model of development communication has achieved mainstream significance in the recent empirical literature. This is the preferred communication model that attempts to build mutual understanding among the different stakeholders in development projects (Nobuya, 2007; Servaes & Malikhao, 2007a; Servaes & Malikhao, 2007b; Bessette, 2004; Tufle, 2009; Ritchie, 2007).

2.3 Integrating the Participatory Model and Diffusion of Innovation Model

Morris (cited in Petersone, 2005) suggests an integration of participatory and diffusion of innovation models to achieve development goals citing that “[...] diffusion of innovations may be a helpful reactive tool, whereas participatory communication may initiate pro-active health behaviors” (p. 14). Hermann (2007) posits that there is a new group of development communication scholars recommending approaches combining the two models. Adam Rogers, Chief of Communications and Public Information at the UN Capital Development Fund, as “participatory diffusion”, refers to these approaches (p. 15). However, Mefalopulos (2008) purports that “...none of the approaches related to the two models are universally applicable nor are they mutually exclusive. Each approach should be applied selectively according to the objectives of the communication intervention...” (p.60). Despite the different scenarios and choices, there is a growing consensus that approaches that combine ‘top-down’ and ‘bottom-up’ interventions are advocated (Waisbord, 2000; Mefalopulos, 2008).



2.3 Information and Communication Technologies for Development (ICT4D)

Amidst the growing evidence that ICTs can play a positive role in development (World Bank, 2002; World Bank, 2009; McNamara, 2003; Chapman & Slaymaker, 2002; Gerster & Zimmermann, 2005; Thatchenkery, & Stough, 2006; Best, & Maier, 2007; Tiwari, & Sharmistha, 2008; UNCTAD, 2010), this research project explores the impact of ICT growth for rural development in Kenya. Since the mid-1970s, the growth of ICTs and their application in development has been gradually rising. Development practitioners have shown increasing interest in the role played by ICTs in development. The potential of ICTs for reducing poverty and promoting growth, especially in developing countries has increased rapidly. The spread of ICTs has led to globalization and has brought in new complexities, and challenges to the field of development communication. This is in terms of power shifts where the network society continues to widen the gap between the information haves and have-nots and those that can access and use the new electronic network of information also known as the digital divide (Melkote & Steeves, 2001; Ogan, et al., 2009; Chapman & Slaymaker, 2002; Thioune, 2003).

ICTs are important components in advancing economic growth and reducing poverty. In the 1960s and 70s, research showed how telecommunications played a significant role in strengthening economic productivity and distribution, public service delivery, and government administration. During the 1990s, ICTs were critical to competitiveness and growth due to globalization, increasing information intensity of economic activities, and rapid technological change and demand growth (Guislain, et. al., 2006).

In recent years, the rapid development and dissemination of new ICTs have been at the forefront of debates in developed countries. It has also generated a wave of enthusiasm among developing countries as a medium of communication and an enabler of development and an opportunity for the countries to access the global information infrastructure and participate in the knowledge economy. There is a growing consensus that for countries to strengthen their investment climate, improvement in ICTs access and quality should be a priority (Levy & Banerjee, 2008; Zhao, 2008; Melkote & Steeves, 2001; Guislain, et. al., 2006). However, it is important to note that when it comes to development, 'one size does not fit all. The application of ICTs as tools for economic growth and poverty reduction varies widely across developing countries (McNamara, 2003).

ICTs serve as effective tools in transforming the social, economic, and political life globally such that there is little chance for countries or regions to develop without integrating into the information age. However, looking at the opportunities and risks that ICTs have as instruments of poverty reduction would seem to be an exceptional task. "If the Millennium Development Goals are taken seriously, the contribution of ICTs to poverty reduction should be a major issue in the international debates (Wole, 2008; Gester & Zimmermann, 2003, p.7).

Further, ICTs play a significant role in developed countries and link closely to the power and economic boom. There has been a strong correlation between the levels of development and the adaptation of increasingly complex technologies in developed countries. The social context of introduction and implementation determines emphasis on the use and impact of ICTs. Technologies are not only useful innovations for economic growth but support development as well. Countries with strong information infrastructure and use of information technology innovations enjoy taking advantage of sustained economic growth and social development (World Bank, 2002; Thioune, 2003). In addition, ICTs play a crucial role in sustainable poverty reduction since it makes economies more efficient and globally competitive, improve health and education, and, create innovative sources of income and employment for poor people (Guislain, et. al., 2006).

ICTs and their development application are central to the rapid development of 'lower-income' regions, particularly Africa. Experience over the past decade reveals that a vibrant and competitive ICT sector is required for developing countries such as those in Africa (Otiso & Moseley, 2009; Guislain, et. al., 2006). International organizations share and foster the widespread belief of the benefits ICTs have in the developmental context. This is through an increase of programs and initiatives in this field, especially in Africa, which has considerable influence not only on the implementation of specific programs but also by supporting policy formulation processes (Nulens & Van Audenhove, 1999; Granqvist, 2005). The recent spread and use of ICT in poverty reduction and development in Africa is a function of infrastructure (availability, operation, and maintenance), access (public access facilities existing relevant information content, sufficient capacity at different levels nationally, regionally, and globally) and supportive-enabling environments (including certain regulatory frameworks and an overall policy framework that supports clear economic and political governance). However, these factors need addressing at all levels by all the stakeholders (African Partnership Forum, 2008).



Africa has emerged as one of the most dynamic regions in the growth of ICTs. However, the continent's absolute figures, as well as penetration rates, remain low. Unlike the strong ICT investments and adoption of new technologies in the rest of the world, Africa remains far behind especially in ICT penetration levels, although it has made impressive gains. Given the potential for ICTs to cause transformation, development analysts believe these tools can play an important role in the development process (International Telecommunications Union, 2009; Thioune, 2003; Tiwari, & Sharmistha, 2008; African Partnership Forum, 2008).

ICTs are effective transformers of African countries. However, one of the major development challenges that Africa faces is its ability to develop the capacities, strategies, and mechanisms necessary to take maximum advantage of these new technologies and their opportunities. Other challenges such as adapting the ICTs to local conditions and understanding the innovations to suit their development needs remain (Thioune, 2003). The World Bank (2002) notes the growth of new ICTs has reinforced the relation between knowledge and broad-based development in terms of economic growth, greater competitiveness, access to basic services, improved health, improved education outcomes, and greater empowerment. As a result, African countries have now begun gradually implementing strategies for including new ICTs on their development agenda towards the development process (Thioune, 2003). The development process is determined based on how the varieties of ICTs operate. (Grace, Kenny, & Qiang, 2003).

However, there is a noticeable lack of analysis on the impact of ICTs on development in Kenya. Most of the documentation I was able to source was mostly on policy and very little on ICT4D. On the contrary, there is a plethora of official and legal documentation of policies. This may be an indication that the government is making all the steps in formulating policies but has not looked at the real impact of ICTs on development, especially in remote rural areas.

2.4 ICT Access and Social Exclusion – A Social Practice View of the Digital Divide

For several years, international agencies such as the UN have identified the existence of global, regional, and national inequalities in ICT access (digital divide). There is no universally accepted definition of the digital divide concept. Many of the widely accepted definitions share a common origin. The term 'digital divide' originally referred to the imbalances between developed and developing countries with regard to the inadequacy of telecommunication infrastructure and affordability of access to existing ICTs among individuals. The view of a divide between the information 'rich and information 'poor' emerged in the United States from discussions on information policy and the need for equal access to electronic resources. The 'gap' in access has been historically defined as a divide between the information 'haves' and the information 'have-nots'. Although ICTs have become effective in transforming the social, economic, and political life globally such that there is little chance for countries or regions to develop without integrating into the information age, more concern is being shown about the impact between the information 'haves' and 'have-nots'. The gap between the developed and developing countries and between the urban and rural areas continues to widen in terms of spreading ICTs and distributing their benefits (Wole, 2008; Zhao, 2008; Watson, 2007, Odamé, 2005; DiMaggio & Hargittai, 2001).

Hargittai (2003) defines the digital divide as inequalities in Internet access and notes: "...a refined understanding of the "digital divide" to include a discussion of different dimensions of the divide focusing on such details as the quality of equipment, autonomy of use, the presence of social support networks, experience and online skill [...]" (p. 3). In line with this definition, the digital divide in developing countries according to Rao (2005) is most evident at the phase of connectivity (lack of affordable and widespread ICTs for the common citizen), content (useful content for daily use of individuals), and community (social support networks to discuss ICTs and other issues of concern). Furthermore, commerce (technical and legal infrastructure for e-commerce, businesses, and government), and capacity (ability to effectively harness ICTs for individual daily use). Other factors are culture (at the level of policymakers, businesses, and citizens to open up access to ICTs and harness them), cooperation (between citizens, businesses, academics, and organizations to create a climate favorable for ICT use), and capital (financial resources to invest in ICT infrastructure and education).

This view focuses on the supply-side issues and tends to divert attention from the wider structures of communication in the lives of people and the connections between these and supply-side issues. Furthermore, the notion of a 'divide' accordingly takes up a bipolar societal split of haves and have-nots (Watson, 2007). Flew (2005) raises the issue of the digital divide based on broader social inequalities of access to ICTs: "The question of the digital, or the inequalities of access to ICTs that arise from broader social inequalities based on social class and income, gender, race, and ethnicity, geographical location (especially urban/rural divides), nationality, is central [...]" (p. 71).



Additionally, Ghatak (2007) argues that the major determinants of the digital divide include the level of education, gender, rural-urban divide/location, ethnicity, household or individual income, infrastructure and cost of accessibility, and, legal frameworks and institutions. According to Odame (2005), the ‘digital divide’ concept needs to adopt an alternative view from a different stance where the emphasis is on social inclusion to analyze technology access. This notion would be able to encompass a variety of physical, digital, human, and social resources, which meaningful access to ICTs entails. There is the risk that the gender gap remains. “...this bias is evident in three ways: women are rarely involved in the needs assessment of ICTs for development and attitudes that high-end information technology ‘is not for women’ who are still being treated as passive recipients of information and not active information users and communicators. Also, there is considerable delay in addressing the limitations faced by women in accessing supposedly ‘public’ information spaces, or even private sector initiatives such as cyber cafes” (p. 16).

The issue of access and exclusion to ICTs is important, particularly with regard to socio-economic factors. It is important to note that technology, including ICTs, is not an automatic force for opportunities and social inclusion. ICTs can intensify and reinforce existing economic, political and social inequalities depending on design, deployment, and access. Further, they serve as tools to stimulate prejudice and stir up social tensions. In addition, governments need to take proactive measures in ensuring ICTs serve as effective tools for social inclusion through widespread access, especially for the poor and disadvantaged to benefit (McNamara, 2003; Watson, 2007).

Women especially in developing countries are in the deepest part of the digital divide further removed from the information age. To ensure the whole population reaps the benefits of new ICTs for development, a clear understanding of the specific needs of women and other disadvantaged groups is crucial. Due to systematic gender biases, it is important to ensure women understand the significance of ICTs and use them for purposes of achieving their economic and social development, and human rights. An inability to engage in ICTs will leave them further marginalized in their countries and the world and will further disadvantage and disable them and reinforce the status quo power structure (Wole, 2008; Megwa, 2007; Odame, 2005; Best & Maier, 2007). Inequalities in ICT access according to Tacchi & Martin (2008), arises from broader social inequalities based on gender and formal education.

Within their view, the understanding of social inclusion and exclusion is in the context of participation. In an example given, a researcher working in a village in Nepal noted a high turnout of female participants in the community library’s basic computer courses. Reasons for this were the women were comfortable having female teachers. Further, the high female turnout was also attributed to the fact that a large number of homemakers had been forced to give up their education and career thoughts, after marriage. Through the skills training programs especially those involving ICTs, the women wanted to improve themselves as these are highly relevant in modern-day life. Now it is no longer about women’s exclusion from formal education but the inclusion of women in community-based learning programs in village Nepal.

Gender is a significant element of the challenge in ensuring widespread access and use of ICTs. It is worth mentioning that some of the MDGs focus mainly on increasing opportunities and reducing vulnerabilities faced by women. However, for a wide range of reasons, women have impediments to securing equal access to and benefits from ICTs. Therefore, particular efforts are necessary to provide access to opportunities, tools, and content suited to the priority needs of women. In this way, ICTs will serve as effective tools for social inclusion, empowerment, and economic opportunity for women (McNamara, 2003; Gill et al., 2010). The use of new information technology, production, acquisition, and flow of knowledge driving the current economy questions the existing power structures and inequality patterns, as well as questions, progress toward social-economic justice. The digital divide is proof of the ability of technology to increase inequality yet at the same time technology can promote and connect people to a variety of opportunities through education and organization efforts (Servon, 2007).

2.5 Sustainability of Initiatives

Throughout the world, ICT centres in rural areas (telecentres) are struggling to survive and over the last ten years, the sustainability of telecentres has been at the forefront of debates among practitioners and academics in the development discourse (Bailey, 2009; Rega, 2010). Sustainability is “...the ability of a project or intervention to continue in existence after the implementing agency has departed” (Bailey, 2009, p. 1; Rega, 2010, p. 36). Further, in sparsely populated areas, sustainability is difficult to accomplish since infrastructure may be lacking and local demand is scattered, and has inadequate purchasing power. Arguably, for telecentres to achieve and gain tangible benefits for the poor, both in rural and urban settings, state subsidies will be essential for the start-up phase, and subsequent governmental funding of public services will be required (Proenza, 2001).



Phillip & Foote (2007) purport sustainability issues depend on financial sustainability in terms of the ability of the telecentre to generate enough funds to cover its expenses. In addition, social, cultural, political, and technical sustainability are considerable factors. The financial and social sustainability of telecentres remains a key obstacle to digital inclusion projects. However, “whether telecentres remain an influential component in the community development agenda in the long run, however, depends on how they respond to the urgent need to build social and financial sustainability capacities” (Mayanja, 2006, p. 2; Bailey, 2009).

Recently, the issue of sustainability has come to be seen as more complex and multi-dimensional “dependent on more than just the availability of financial resources”. Further, issues commonly associated with the sustainability of telecentres include the operating environment, ownership and management styles, community participation, and relevance of the services and content (Rega, 2010, p. 37; Etta & Parvyn-Wamahiu, 2003).

Ariyabandu (2009) argues that the present challenge is developing the telecentres further into sustainable knowledge centers with the involvement of NGOs, government, and other key stakeholders. Telecentres may have been in existence for many years in the development field but underutilization of knowledge for sustainable development. Ariyabandu further argues that many stand-alone telecentres “have not been able to adequately share information and experience, especially among the poor and the disadvantaged communities. This has reduced the demand and sustainability of ICT access points to continue serving the poor” (p. 1). Phillip & Foote (2007) argue that providing locally relevant services should form the basis for sustainability. This basis should be on assessing the community’s needs specific services, and content and developing the business models and applications.

III. METHODOLOGY

To provide an in-depth analysis of the impact of the CKC on the Nguruman community, there is the use of a participatory ethnographic research methodology, combining participatory techniques and ethnographic approaches. The use of this approach with the potential to feed into action research. I selected certain elements of the Ethnographic Action Research (EAR) developed by Tacchi et al. (2002). This research was undertaken in Nguruman a rural Sub-location situated in arid and semi-arid land within the Olkiramatian Group ranch about 40 kilometers from Magadi town at the foot of the Nguruman escarpment (Muya, et, al., 2001; Kinyua, et, al., 1997).

IV. FINDINGS

4.1 Determinants of ICT Use

There is a general view of Nguruman as relatively developed. Participants originally from Nguruman compared its current state of development to earlier years and said it is developed. However, participants who are not originally from Nguruman say the area has considerable development when they compare it with other communities in Kenya. Like the participants from the focus groups, those from the interviews described development in terms of infrastructure such as roads, communication services, community institutions, and socio-economic conditions such as an increase in population, cultural issues, and education. Most of the participants, especially those originally from Nguruman, mentioned that the infrastructure of Nguruman has improved when compared to its former state some years back.

For all the participants, the perceiving influencers of the development of Nguruman were commonalities in the emerging issues such as gender and cultural issues, illiteracy, and the value of education. It was quite encouraging to know that there is knowledge of CKC by most of my participants. However, most of them did not know what services it offered. Yet the center has been there for about eight years. The few who had visited the center described it as a place for communication through email, learning computers, accessing the Internet, getting information on specific issues for instance farming, and, borrowing books. For the youth, the CKC was a place for getting together. However, the staff’s description of the center revealed other services not known by the community, and this highlights a gap.

Age and gender of users of the Nguruman CKC were major determinants in the use and access to the center by women in the community. According to the users and non-users, the majority of the telecentre users are young men. For most female participants especially the older and non-educated this aspect hinders them from visiting the center due to cultural reasons. A comparison of the participants’ communicative ecologies reveals different communication and



information patterns and activities unique to each individual. Each individual uses different ICTs and links these ICTs to his/her social network to enhance communication and information patterns.

4.2 The Potential of CKC to Enhance the State of Development in Nguruman

Well, for most of the participants, yes it does only if, everyone in the community knows why it is there and fully utilizes the services offered, and if the information is shared. However, what do the policy and decision-makers perceive? According to the key informants, ICTs are important tools in the poverty reduction process. The concept of the CKC for instance, enables many people to use ICTs and therefore access new innovative ideas. Accessing services such as e-Health, e-Education and other e- Information contributes significantly to the poverty reduction process. In order to influence the growth of ICTs in the country, especially in the rural areas, the government, according to the experts, has played a major role in establishing regulations and policies to support ICT infrastructure rollout in such areas a good example is the liberalization of the market. Nevertheless, why then is there only one service provider in Nguruman?

There are ICT-focused initiatives developed by the experts for preparing rural communities to be part of the global information society such as digital villages by the government and rural telecentres like the Nguruman CKC by ICT-focused NGOs and donors. However, barriers exist to the successful implementation of these initiatives. The only aspects shared by community members on barriers to ICTs are age and gender in ICT access and use, and the inability of such centers to serve a large number of people. These findings are extremely important because they highlight issues of sustainability, prompting their discussion in the next chapter.

V. DISCUSSION

5.1 ICTs for Sustainability Development

The Nguruman CKC represents a community access point where community members can access conventional ICT tools (like computers, internet, and telephone). It also provides knowledge and training services. According to Ariyabandu (2009), when such “telecentres are subject to value addition with knowledge and training services along with basic parameters, it represents a ‘knowledge hub’” (p.4). Knowledge in his view is an essential aspect of the development of livelihoods as there is sharing in a large community. The reflection of the importance of knowledge in the work of Servaes (2007) who suggests that although ICTs are important tools for sharing information, they often cannot solve development problems caused by social, economic, and political issues nor can they change existing power structures as the information available needs to be received by people in the form of knowledge.

From my observation and the views of the participants, the sustainability of the CKC was constantly under threat ranging from weak management, to technical and infrastructural problems. Problems such as poor connectivity, computer failures, lack of enough power for more than two computers, unusable computers, and lack of printing paper/printer failures occur. In reviewing the literature, the financial and social sustainability of telecentres remain two of the key obstacles to digital inclusion projects: “whether telecentres remain an influential component in the community development agenda, in the long run, depends on how they respond to the urgent need to build social and financial sustainability capacities” (Mayanja, 2006, p. 2; see also Bailey, 2009).

The findings show that operations, management and ownership style, the relevance of the service and content as well as community involvement have influenced the sustainability of the CKC. The issue of sustainability as mentioned in the literature review (Rega, 2010; Etta & Parvyn-Wamahiu, 2003) is more complex and multi-dimensional relying on more than only financial resources. Further, issues commonly associated with the sustainability of telecentres include the operating environment, ownership and management styles, community participation, and the relevance of the services and content (Rega, 2010, p. 37; also see Etta & Parvyn- Wamahiu, 2003, p. 32).

My study suggests that forging partnerships rather than doing it alone, community cohesiveness, and introducing income-generating models in the telecentres are important strategies for dealing with the sustainability issue. As the Nguruman CKC continues to exist, different social and financial sustainability problems emerge in the process. Therefore, the issue of sustainability is a continuous process rather than a one-off process. This concurs with the ideas of Baulch (2008) who found that the work of sustaining is an ongoing and constant process, dealing with the problems that emerge as an initiative evolves. “sustaining an initiative is a constant labor of firstly, attending to the myriad of problems that social and financial sustainability entails both in and of themselves and, secondly, attending to the complex questions of



how to most suitably marry these two” (p. 108). Such ongoing attention was absent in the CKC highlighting yet again the need for appropriate management at the center.

5.2 Perceptions of Development

The findings of this study showed that development meant different things to the participants. It was described mainly in terms of infrastructure, availability of ICTs, enhanced communication, availability of community institutions (such as schools and churches), and improved socio-economic conditions. Reflection of this is in development-related literature. Development sometimes depicts social, economic, and political changes at individual and group levels, and other times represents social and economic indicators such as GDP, GNP, life expectancy, and income levels, among others. Development is also involving the concepts of ‘progress’ and ‘growth’. Development of social infrastructure (in health, agriculture, education, transportation, and communication) was an integral part of achieving development (Melkote & Steeves, 2001; Fonchingong, 2006; Banerjee & Loo, 2002; Servaes, 2007; Unwin, 2009). Therefore, from the perceptions of the community and the available theories, isolated development is impossible, as it is subjective and contextual.

Words such as ‘better’ infrastructure, ‘increased’ population, ‘availability’ of transport, and ‘more’ shops were the qualifying words the community used to describe the state of development in Nguruman over time. To community members, development meant improved living conditions. This also described the evolution and progressive change. According to Melkote & Steeves (2001) despite the significant differences in understanding of development, most scholars agree that development means improving society’s living conditions. However, there is much debate as to what constitutes ‘improved’ and how these conditions are achievability. It was difficult to affirm with certainty what constitutes ‘improved’ in this study.

Some issues emerged, which related specifically to the participants' perceptions of development, use, and nature of access as well as challenges to the successful implementation of ICT4D initiatives. Gender, age, and cultural issues were difficult to separate because they tended to be dependent on each other. The cultural issues of Female Genital Mutilation and early marriages relate to the reasons why girls do not get further education and relate to the attitude towards women and girls, which manifests in access to, and use of the CKC. The issue of gender in access to the CKC reflects the attitude of the community towards women. The findings illustrate that there are cultural ways governing conducting of relationships such as prescriptions on women’s behavior in the presence of men. A change of attitude towards these practices is what several respondents perceive as integral for development. They not only represent rites of passage from childhood to adulthood but a whole wealth of other socially important meanings and assumptions of social and cultural responsibilities for both boys and girls as they become full members of the Maasai community (Tarayia, 2004; Hauff, 2003). This affects the ability of children to receive an education.

It was evident from the findings that most participants, especially from the group interviews, had either not attained any level of education or had a lower level of education. Even so, educating their children was important to guarantee a good future for them as well as getting employment opportunities. Nonetheless, there was a clear indication that some community members would deny children education due to a combination of cultural and social factors, such as pastoralism and gender preferences. Most families among the Maasai move from one area to another in search of pasture for their livestock. This means that children end up missing out on school most of the time. Gender preference in terms of educating boys rather than girls (discussed below) is a contributing factor to why most of the women in the community are illiterate. It was clear that most of the women in the groups interviewed were illiterate and this according to them, influenced the development of the community because it acts as an impediment to participation in activities at the CKC and the community.

The findings indicate that families prefer to educate boys rather than girls. This gender inequality is not unique in the African context. Girls are a source of wealth, according to some participants, and should therefore stay home. This is because they could help secure basic food supplies, and other household tasks in exchange for bridewealth, whose negotiation is on a symbolic number of livestock (Tarayia, 2004; Watson, & Montgomery, 1999; Hauff, 2003). For the families that have many children, half the children would go to school while the other half remain at home to tend to the livestock and other household duties (NU3; women focus group I). This finding clearly illustrates the issue of social inequality, which in this case is because of a combination of cultural and social factors. The issue that emerges from this finding relates specifically to the violation of the rights of children to receive an education.



5.3 ICTs and Development

There is an indication that some of the community members (users and non-users of the center) do not see the link between the use of the ICTs and the improvement of their socio-economic conditions. For instance, some women did not see the usefulness of ICTs (computers, the internet, and other new tools) in their lives and therefore felt they were not ready to use them. Some community members who are aware of the potential role that ICTs play in development foresee positive effects of their use. Their wish is that others would take maximum advantage of the tools to improve their capacities to reach an improved level of development. Essentially, the CKC has had its most success with young men. For some, it has increased their ability to develop into a business and social entrepreneurs as anticipated by World Corps Kenya in their project objectives but for most, the center has provided a social venue.

Nonetheless, there is a clear indication of changes in perception and behavior in the users of ICTs through access to information, and changes observed by the users themselves in their activities. As mentioned in the literature review, there is a general acknowledgment that ICTs have the potential to help poor communities, especially in Sub-Saharan Africa to find new and innovative ways of stepping up the development process. Because the development process is neither one-dimensional nor unitary, the transforming aspect of ICTs as catalysts of rapid and sustainable social and economic development (Thioune, 2003). This has not yet occurred in Nguruman.

The study demonstrates that ICTs can change the social and economic life of some community members. For instance, using the mobile phone to strengthen the patterns of communication and information between family members and using the computer to enhance the working performance of teachers because they can save time. Enhancing the performance of students in school through basic computer skills, accessing development information through the radio, television, and publications to enhance say farming initiatives and further development of self-help initiatives, and accessing information through the Internet for job opportunities or further education for the youth are further roles of ICT. This indicates that the process of appropriation of ICTs is ongoing in some communities although there is a hindrance by certain technical, institutional, socio-economic, and cultural factors (Thioune, 2003). The successful impact of ICTs, therefore, means ensuring that content is adapted to the conditions of the targeted beneficiaries and ensuring ways for increasing access for rural communities.

VI. CONCLUSION

The evidence of some community members in Nguruman indicates that the CKC has made a significant difference, changing their lives, attitudes, knowledge, and perceptions. For some, the extent of impact has been slight while for others it has been profound. The question that remains is, whether this change will last and what the CKC requires to ensure a desirable change in the lives of community members lasts. The barriers to access and use of the CKC, which are based on limiting factors such as gender, age, illiteracy, and cultural issues, need to be dealt with to provide for sensible models that support genuine community participation and capacity development (Etta & Parvyn-Wamahiu, 2003).

VII. RECOMMENDATIONS

7.1 Community participation

Development communication emerges from successful rural development and calls for the conscious and active participation of the intended recipients at each phase of the development process. Rural development cannot occur without changes in the attitudes and behaviors of the people concerned (Colle, 2007). Emphasis should be on the planning of communication initiatives, focusing on dialogue rather than one-way communication as support to development initiatives.

7.2 Sustainability of Rural Telecentre Initiatives

Telecentres have a definite role in the development process. They play an important role in information and education, which is key to development and seen as an important human right. Therefore there is a need to provide support in initiating, maintaining, and running telecentres. Unless World Corps Kenya and Arid Lands Information Network-Eastern Africa expand the lifespan of such projects, the optimal development and growth of the CKC become inadequate. Both organizations need to have a plan for transitioning the CKC from a donor-funded model to a social



entrepreneurship model, where the goal is to make profits to recover costs and provide a surplus to grow, while at the same time serving the community's needs. Efforts should be made to come up with subsidized services or group rates for instance among women or students.

This study suggests forging partnerships (also referred to by a key informant as public-private partnerships - PPPs) for the financial sustainability of telecentres in rural communities. Emphasis should be on forming creative partnerships between private Information Technology (IT) companies and the government, civil society organizations, international aid agencies, and local communities to create a relevant communication dialogue that allows successful implementation of ICTs for development.

Tax exemptions, technical training of the staff and volunteers, and the development of "village tech corps" are some of the ways that can reduce the high cost of purchasing the equipment, supplies, and maintenance for rural telecentres, as identified by Etta & Parvyn-Wamahiu (2003).

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