Preface

“Those who do not learn from history are condemned to repeat it.” (Santayana, n.d.)

INTRODUCTION

In recent years, much consideration has been given to the future of rural communities in the context of emerging information communication technologies (ICTs). What is particularly interesting is that what used to be marginalized, unreached, or neglected is coming closer to the mainstream as a result of the penetration of ICTs. There is a fundamental human urge (social, political, and otherwise) to see rural communities just like urban communities taking advantage of ICTs. Traditional development strategies are now receding in favour of technology-driven development hence this book, Cases on Developing Countries and ICT Integration: Rural Community Development, borne out of the imperative to share experiences of developing countries’ use of ICTs with rural communities. The book shares, teaches, and helps readers to appreciate and see the inevitability of ICTs based on some practical realities of their use in developing rural communities. What emerge in this book are real stories focusing on the dynamics of using ICTs in different contexts while at the same time helping readers to appreciate ICTs’ role in rural community development.

Today, the pastoral Maasai of Tanzania and Kenya previously separated by many kilometres of distance, the Himba of Namibia in the remotest parts of the country who for years were believed to be rarely associated with modern technologies, the indigenous mountain people of Korea, now benefit from ICTs, particularly wireless mobile communication technologies and the ubiquitous Internet. Furthermore, mobile banking has proved a hit with people in Tanzania and South Africa’s townships and villages, and is spreading quickly like wildfire throughout the rest of Africa. To continue making sense of and appreciate ICTs in rural community development, stories from Botswana, Nigeria, Ghana, Namibia, South Korea, and Bangladesh add to the bank of available literature. Communities use ICTs compatible with their developmental stages and need. For example, a number of new mobile phone subscriptions increases daily with a signed members of 316 million reported as from 2000 (MGI, 2010).

Nowadays cell phones are serving as a bank-in-pocket, providing virtual accounts for poor Africans excluded from the financial mainstream by exorbitant charges and branch networks clustered in wealthy suburbs. For example, account holders use text messages, or SMS, to pay for goods, transfer money to friends and family and top up the credit on their pay-as-you-go pre-pay phones. Bosses can pay salaries directly into cellular accounts and customers can deposit cash at Post Offices or in some bank branches or use cell phone accounts to pay for utilities (e.g., electricity) bills. Widespread banking services are seen as crucial to boosting growth in Africa’s biggest economy and shrinking the huge gap between
mostly well-off city dwellers and poor rural villagers. However, some banks still limit use of earners with cumbersome bureaucracy and high fees. This growing use of cell phones has drawn attention of some authors in this book.

Although some rural communities have advanced more than others in the access and sophistication, reliability, or frequency of use of these technologies, it is clear the winds of change are unstoppable. As the expansion of globalization and the surge of technologies in the 21st century continue to soar, so does the digital divide continue to shrink for remote area populations who, for decades in the past, were left without connectivity because of their geographical location and distance away from urban centres.

This book is timely and important as it reflects research, practices, and experiences on ICT integration in rural community development. It comes at a time when rural communities the world over are using wireless technologies in unparalleled numbers and with applications that include WiFi connections. With such advances of ICTs, including mobile technologies, computers, and Internet availability, both urban and rural communities have found a rallying point of convergence: communication is key to development. The authors of cases in this volume will exemplify the extent to which this realization is true. One thing certain is that cases indicate that developing countries are witnessing the shrinking of the digital divide. ICTs are changing lives in rural areas.

**Major Goals**

This book is aimed at sharing the impact of technology in development, and in particular, in rural settings. Technology is described, analyzed, and synthesized in order to offer solutions for successful applications and social advancement. Also, strategies for addressing the challenges and experienced pitfalls of the digital divide of technology are discussed in order to establish the valuable gains from their use, namely: socially, culturally, economically, and politically. As developing countries divert their scarce fiscal resources to ICT technologies, they expect added and heightened gains from their use especially to accelerate social development. With globalization looming large nowadays and with the expansion of technology use increasing exponentially, this book stands out as timely and important for those engaged in rural community development.

The most recent and common application of ICTs in East Africa, for example, is the mobile phone. Its frequent use is peer to peer communication, i.e., SMS and beeping. The number of subscribers who use their phones to access Internet is however steadily growing, which opens up a whole range of new applications and possibilities. Many of the existing SMS based applications that could benefit the poor the most are still in their infancy in the region. A few successful cases, namely mobile money transaction systems and various health related solutions, are being used at scale, but the fact remains that the number of scaled-up mobile services are still few and/or limited geographically. Some chapters in this book share successful use of SMS.

**The Concept of “Rural”**

It is well worth noting that in developing countries, rural populations are frequently underserved educationally and often times in many other respects. As information is critical but necessary condition for any development enterprise, the growing uses of ICTs offer a great potential in accelerating the development of rural communities. For example, in the realm of economic development, ICTs are used to connect
rural communities with the wider economy – opening up supply chains, transfer of funds, and delivery of critical information in health and administrative circles.

In the context of culture, digital technologies are used to enhance and preserve knowledge and culture of the rural communities including cultures of indigenous peoples. Remote area farmers are able to contact extension officers and ask relevant or urgent questions. They can download information on pest control remedies from the Internet or they can have their opinions heard by the editor of the national newspaper which is frequently read by politicians and government functionaries. These are only a few possibilities that were unthinkable previously. Therefore, the chapters of this volume respond to a much needed knowledge to fill a void—the knowledge gap between rapid advance of new technologies and a rural sleeping giant.

The concept of rural development captures our attention in this book. The importance of context or a sense of place cannot be stressed enough—it lies behind the decision to explore particular educational development issues that are specific to a context. There is a danger of assuming that the concept “rural community” is homogeneous and therefore unproblematic throughout the world or in this book, in particular. The definitions of rural are better seen as research tools for the articulation of specific aspects of the “rural” than as ways of defining the rural.

Another viewpoint to define the rural concentrates on highlighting the extent to which people’s socio-cultural characteristics vary with the type of environment in which they live. In short, socio-cultural definitions of the rural assume that population density affects behavior and attitude (Hoggart and Buller, 1987). This assumed correlation between social and spatial attributes has been a strong force in the organization and development of rural studies but has changed in character and sophistication over the years. In the past, “rural” was defined by comparing or contrasting it to “urbanism” which is represented as a distinct “way of life.” For example, in 1938, Louis Wirth set forth his proposal that urbanism represented a distinct way of life. “Urbanism” was characterized as being dynamic, unstable, mobile in stratification, and impersonal, with contacts being determined by one’s precise situation at the time (work, home, leisure, etc.).

Counterpoised to this is “ruralism,” characterized by stability, integration, and rigid stratification, with individuals coming into contact with the same people in a variety of situations. Wirth’s dichotomy was one of many proposed throughout the early part of this century in an attempt to distinguish between urban and non-urban societies, rural and nomadic peoples, indigenous and non-indigenous, in order to map the rapid pace of social change. However, communities define the locality.

This book attempts to hone in the point that rurality is locality specific and pools together experiences and expertise on ICT integration in rural communities in the context of developing countries. In the cases of studies that make up this book, attention has been paid not only to relate ICT integration to broader theoretical and methodological themes as discussed in Part 5 but also to policy matters (Part 4) and how such policies impact practice and individual lives in communities. The aim of the arrangement is to try to strike a balance between depth and breadth, but also to highlight the uniqueness of the diverse contexts the cases bring out.

Cases as Stories of Lived Experiences

This volume is divided into five parts that pull together themes including: social services, infrastructure, economic empowerment, policies and governance, and theoretical issues. It offers the reader the opportunity to learn from Cases on developing countries and ICT integration studies, in the form of stories—some experimental and others lived experiences. This method of using stories is not new. While
George Santayana, in the above referenced quote, may not have been referring specifically to the case study method in education way back in the 1940s, his adage still applies today. In fact, we have been using case studies in the form of stories to learn from history for thousands of years.

In rural communities, farmers, in particular, use stories to give an account of their families, history, and accomplishments – what they tried and worked, and what failed. The earliest societies used stories to share knowledge and to teach others. Their indigenous knowledge was passed from generation to generation in the form of stories and scenarios. Such oral accounts enabled communities to survive and make advances in many aspects of life—transfer knowledge of how to gather food, how and when to plant certain crops, and how to hunt. These ways of knowing were passed orally from generation to generation.

The lessons learned through case stories are similar in many ways to the conclusions or solutions found in case studies; granted that those stories may not have been as complex as the case studies we know today, but they were similar in the sense that knowledge was gained through the evaluation of the scenario and through the decisions made as a result of the knowledge thus garnered. Learning from past situations, scenarios, past mistakes that have been made, and from good ideas that have been implemented successfully is what the case study method is all about. Educators in many disciplines have found that case studies allow us to learn from history whether that history is many years or a few days old (Schmidt, 2010, p. 12). Case studies require the reader to step into the situation itself. And that is what we ask the reader of this volume to try to do.

Scholars have defined the concept of the case study in several ways. Erskine, Leenders, and Mauffette-Lenders (1981) cited in Herreid, 2006) defined a case study like this:

*A case is a description of an actual situation, commonly involving a decision, a challenge, an opportunity, a problem or an issue faced by a person or persons in an organization. The case requires the reader to step figuratively into the position of a particular decision maker.* (Herreid, 2006, p. 50)

This definition is mirrored in Ellet’s (2007) proposition of case study. “Case studies are verbal representations of reality that put the reader in the role of participant in the situation. The purpose of cases is to convey a situation with all its cross-currents and rough edges. They may be lengthy or short, and may provide many or few details” (p. 2). According to Ellet (2007), case studies share three common characteristics: (1) focus on a significant issue, (2) provide enough information for the reader or case participant to draw conclusions and (3) provides no stated conclusions of their own (Ellet, 2007, p. 2).

This characterization of case studies by Ellet should not come as a surprise to anyone as there is some disagreement to these issues among the academics who study case methods. Herreid (2006), for example, notes that “A case study must be real. No lies. No fabrications. No fantasy. It must involve real events, real problems, and real people. Nothing is made up” (p. 50). However, other scholars are not as strict in their definitions. “Case methods are often actual descriptions of problem situations in the field in which the case is being used, sometimes they are syntheses constructed to represent a particular principle or type of problem” (McKeachie & Svinicki, 2005, p. 223). It may be true that some case studies are based solely on actual events. Case studies involving businesses, for example, may include business names and actual statistics on profits, losses, and dollars spent on certain initiatives. Or, they may represent results of a study—an experience or a piece of people’s extraordinary lives of ordinary people.

This volume has assembled informative case studies that cover a wide spectrum and encompasses the divergence of case studies noted in the definitions outline above. We have brought together in one book cases from Korea to Botswana, Tanzania to South Africa, Bangladesh to Namibia, and many more. The cases show how ICTs have contributed to agriculture, environment, tourism, health, communication,
e-governance, culture, business, and more. They represent people and present stories about the struggle over development in each context. Needless to say, in most developing countries, rural communities are for the most part underserved, educationally disenfranchised, and service-poor. This book is our attempt to show that ICTs can change the lives and life situations in many respects especially when it is lives of communities where the use of ICTs meet the life circumstances, aspirations, and needs.

**Why Study Cases of ICT Integration**

There are several reasons for opting to use case studies as a strategy of this book. The intended audience of this book is quite broad: adult and extension professionals, community development workers, social workers, scholars and researchers interested in ICTs for community development. Our assumption is that case studies can be a catalyst for active participation in a learning environment. They can get participants involved and have a discussion flowing. Many researchers point to the positive relationship between captivating the interest of the reader and learning.

ICT has turned out to be the defining yardstick of development. The case studies assembled in this volume run the gamut of types of case studies representing the diverse aspects of development, agriculture, health, media, entrepreneurship, et cetera. In the areas of technology, the use of cell phones, DVDs, and other gadgets are explored. Each possible solution to a case comes with different positive and negatives to be weighed by the participants as well. As anticipated by Schmidt (2010), case studies can also include extra information that is not relevant to the case in any way. This extra information or what he calls “noise” is also characteristic of problem solving in the real world. All case studies feature some degree of ambiguity as well. Not all important information is stated, and as a result, participants must make inferences or assumptions based on what is known. Like the real world, information included in case studies is not presented in an orderly fashion. Rather the reader must pull key pieces of information from throughout the case itself.

Nothing has been used as widely to share information and for development purposes than the new technologies ushered by ICTs. They are waves that drive current and future developments. They cross borders. They have the potential to transform the social, economic, and political landscape of all countries. As governments continue to spend resources on ICTs, they can expect heightened gains from their use - socially, culturally, economically, and politically.

**Benefits of Cases**

Cases in this book can promote involvement in rural community development. They allow deliberation, reflection, discussion, and collaboration that are not always possible in a real setting. We hope instructors can find the case studies in this book flexible enough to be tailored to the different contexts of adult education, community development, and other settings in which empowerment curricula of all types are discussed. They can bridge the gap between theory and practice in the sense that they provide students the opportunity to apply theory to practice. They benefit from the diversity of a classroom, in that all learners can bring their varying degrees of experience, whether urban or rural, to table and learn from each other’s experiences triggered by these cases.

They can allow students time to consider alternatives and make choices in the relatively safe environment of the classroom, as opposed to having to make those same types of decisions in the real world, where stakes may be higher and decisions must be made faster. The continual study of cases over time
can also be beneficial to students. As is the case with many educational activities, the ongoing examination and analysis of cases as part of an overall program of study is helpful in the learning process. “The repetitive opportunity to identify, analyze, and solve a number of cases in a variety of settings, prepares learners to become truly professionals in their field of work” (Harreid, 2006, p. 50).

In summary, the benefits of using case studies are as follows:

• They can promote active class participation;
• They can be tailored to match instructional goals;
• They can bridge the gap between theory and practice;
• Students bring their own experiences to the case and can learn from each other;
• They allow students to make choices and consider alternatives in a safe environment; and
• Over time, they help students develop analysis skills.

The Contributions/Contributors

This volume is arranged in five parts: 1) agriculture and health 2) infrastructure, communication, and community informatics / knowledge, 3) Economic empowerment and small scale entrepreneurship, 4) Policies, strategies and e-governance, 5) Theoretical and general issues.

In many developing countries, the agriculture and health sectors greatly determine the overall development of communities, especially rural communities. Nowadays, increased performance of these sectors is influenced by the extent to which ICTs are utilized. Thus, section 1 starts by exploring experiences and other stories of the use of ICTs in these sectors; Sabone, Sabone and Mogobe’s chapter explores ICTs and health. They see a successful health care service as a crucial dimension of rural development. The authors view ICTs as powerful tools for providing information that can help people to organize and manage their social activities include health-related matters. The case they present illustrates how ICTs can be used to disseminate health-related information to ensure that citizens are well informed to take care of their health and live healthy, productive lives for the sake of their development.

Given that some of the most marginalized and vulnerable groups in the developing countries continue to rely on agriculture as their main source of livelihood, some chapters are devoted to this area. Joo advises that effective use and management of ICTs would not take place in a vacuum. Countries need to develop strategic plans. Joo illustrates his point using a case of a Korean “Five-year Master Plan for Rural ICT Promotion” that was meant to prepare rural people for adjusting to new technological environments, including constructing agricultural database, building agricultural information networks, developing software for agricultural management, and reinforcing rural education to narrow the information discrepancy between rural and urban citizens. According to Joo, South Korea has witnessed fast-changing agricultural sectors with unique mission to promote community-based, self-help economic and social development.

In Nigeria, Oladele states, information is widely acknowledged as one of the critical factors of production decisions and farmers’ demand for information has increased in recent years. ICTs are used to close this information gap. He illustrates his point with a case of a multipurpose community information access point which is at a pilot level in Ago-Are and Oyo State of Nigeria. The center is equipped with basic ICT infrastructures including Internet connectivity. This connectivity is made available through a VSAT solutions targeted to the basic problems of farmers’ lack of information on agriculture, lack of access to inputs and output markets, and lack of access to some basic, but relatively expensive equipment.
Bhaskar on the other hand shows cases of how a for-profit business, ICT Limited, transformed the face of agriculture in some parts of India and Bangladesh. He cites the lack of information and fair incentive system as the greatest impediment to the growth of communities but states that with the use of modern technologies these can be improved. Raditloaneng injects a new point by focusing specifically on participation of women in agriculture. She proclaims that one of the key indicators of good democratic governance is the promotion of gender equality as a human right in all sectors including the agricultural sector. She calls for the involvement and participation of women and men in the field of agro-forestry which, in Botswana, is a male dominance activity. She presents a case indicating that women like men can improve their lives through their engagement in agro-forestry.

Furthermore, Garegae points out that ICTs-driven agriculture in the 21st century is a feature for all nations. She convincingly draws from a case of Farm House Dairy activity of Setswana traditionally madila (sour milk), a highly nutritious meal which has helped to reduce the rate of malnutrition among children to support her contention. Idowu concurs with Garegae by illustrating that indeed the overwhelming breakthrough in the information communication technology has transformed agriculture in a number of African countries including Nigeria.

Boadou comes in to complement the issue of self-help and community compatible ICTs which puts the knowledge, skills, attitudes, and values embedded in their social contexts first. He strongly supports the use of indigenous medicinal plants for treatment and healing. He presents a case of Akan ethnic group of Ghana and their use of indigenous medicinal plants for the treatment of a multiplicity of ailments. This knowledge is, according to Boaduo, that which can help rural communities to emancipate themselves from ignorance and poverty and raise themselves above many challenges. ICT, like telephone and Internet, is required to make it easy for Asantes to share and make accessible their knowledge and skills available to the rest of the medical world and also through video, CD, and Internet access. He calls upon governments to make available technological infrastructure that will allow rural communities to tap the usefulness of ICTs.

The widespread use of ICTs like cell-phones has been documented in this book too. For example, Semali draws our attention to the case of Tanzanian women’s experiences in the use of cell phones to enhance communication that targets rural producers of agricultural produce and market women who sell those products. This illustrates the growing trends of making information available to farmers not only using advanced Information Technology but also to improve their wellbeing. The Tanzanian case shows how cell phones can be used to market agricultural products. The lessons show that micro-business decisions of marketing food crops depend on critical information in a rapidly changing supply chain environment. Pheko, on the other hand, demonstrates that rural communities, regardless of their geographical position and distance from urban places like Kaudwane in Botswana can be reached by ICTs like cell-phones. She, however, sees partnership of organizations which can make this possible critical. Governments alone may not succeed but partnership with major telecommunication services is important. She shows this through a project called Nteletse 2 (Call-Me). This involved villagers being engaged in Public Communications Centre’s (PUCC) projects providing an Internet café, charging individual cellular phones at a fee and selling airtime to both locals and visitors. The result is great, improvement of the lives in this village as it provides employment and easier communication amongst individuals and visitors. In Nigeria too, Oladele states that information is widely acknowledged as one of the critical factors of production decisions, and farmers’ demand for information has increased in recent years. ICTs are used to close this information gap. He illustrates his point with a case of a multipurpose community information access point which is at a pilot level in Ago-Are and Oyo State of Nigeria. The center is equipped with basic ICT infrastructures including Internet connectivity. This connectivity is
made available through a VSAT solutions targeted to the basic problems of farmers’ lack of information on agriculture, lack of access to inputs and output markets, and lack of access to some basic but relatively expensive equipment.

Furthermore, Asino, Wilder, and Ferris present an interesting case of technology used by a printing press, *The Namibian*, which has been the liberal voice of Namibia for 25 years now. This newspaper continues to be involved in issues of national politics, voice of the people, and nation building, often holding government accountable for ensuring universal democratic rights. It has managed to reach citizens across the countries through its use of Short Message Service (SMS), giving it voices of how to develop nationhood in Namibia. A traditional national newspaper has managed to develop a sense of national identity that transcends geographic distances and a legacy of economic/political barriers as a result of the use of ICTs. They see mobile phones as people’s empowerment.

Hulela brings in the dimension of service delivery as one critical aspect of community development. Each and every citizen should participate and benefit from development services, and this requires that service delivery should be earmarked for improvement. Hulela believes that ICTs can play a great role in improving services to the rural populations. Among other things, Hulela calls for the application of Smart Switch Card to improve the Social Safety Nets (SSN) of all people. She draws from example of Botswana Smart Switch Card, a communication technology which was introduced to improve the administration and management of food and basic needs offered to three groups of people: the destitutes, orphans, and the home-based care patients. She asserts that with this card, all citizens will have access and be serviced using a device that responds to community’s needs. Hulela sees the introduction of Smart Card as one means of ensuring that everyone is not left behind. This card is a devise for e-governance. Hulela’s contribution to e-governance is strengthened by Mutula’s case. Mutula draws from the literature on e-governance to argue that the basis for effective application of e-governance is research. He insists that research in e-government must not be an abstraction - whatever is questioned, whatever is revisited, what is created as new knowledge must make life better for the people either qualitatively and quantitatively. Using a case built from an informetric analysis of e-government literature that has been undertaken about Africa and on Africa, he makes a point that with strong research base translated into reality, community development that is informed by African world views, and knowledge base that are intrinsically and inherently African is possible.

Self-help projects using technologies among the marginalized group like poor rural women is well illustrated by Modise, Lekoko, Thobega, Lekoko, Modise-Jankie, and Busang’s chapters. Modise, Lekoko, and Thobega’s case is that of women weavers who broke free from poverty trap without having gone through formal schooling. Through their indigenous literacy, women of the Oodi Weavers have grown their business into a well internationally recognized one. From their case emerged the realization that many uneducated people in the rural areas can transform their lives with support, hard work, determination, and endurance. One would also appreciate what Oodi weavers are doing in the context of Moloi’s chapter on mathematical literacy. Moloi may insist that these women are mathematically literate, because it is the purpose for which mathematics is used that determines the literacy level of users. He presents literacy as that which enables creativity and logical reasoning about problems in the physical and social world. His case illustrates how mathematical literacy is perceived as opposed to mathematics.

A sense of self-reliance that is portrayed through Oodi Weavers project and Moloi’s case reappears in Lekoko, Modise-Jankie, and Busang’s chapter on libraries. In fact, in their chapter, authors portray development of as self-driven activity because individuals and communities know best what they need to change their lives for the better, thus they have obligation to look for information that can empower
them. They present libraries as a means through which people can access information needed to transform their lives. As officially designated information agencies in many countries, libraries play key roles in collecting, producing, organizing, and disseminating information as well as facilitating free flow to enhance socio-economic, spiritual, emotional, and intellectual development of an individual and the community. Their chapter show a case of how the utilization of the tapped library resources especially library with computer that are connected to the Internet can improve citizens lives.

In the context of culture, Nhlekisana purports that digital technologies can be used to enhance and preserve knowledge and cultures of the rural communities including those of the indigenous people. This author presents a case of a popular music group that utilizes technology (CD, Cassette, DVDs) to preserve and disseminate their music for sales that can contribute to their economic and social lives. This group’s efforts indicate that culture that inheres within rural communities and not merely borrowed can be used as an aspect of developing these communities. It opens our eyes to how the riches of our traditional entertainment (music) can become sources for our livelihood and development. According to this author, preserving this culture and making it global through technology is a way to promote the existence, uniqueness and richness of our rural communities.

Finally, in the area of environment, Maphanyane comes in with concern over its utilization. She considers it underutilized in the development of rural communities. Using a case of Botswana, Maphanyane insists that Spatial Digital Infrastructure (SDI) should not be carried out for selfish reasons but to maintain social benefits for all citizens. She presents a case indicating that SDI should be created as a foundation for environmental protection and sustainable natural resource use. It can be channelled towards feeding the world’s ever growing population including the rural communities.

In conclusion, it is worth noting that this book presents rural populaces as communities with limited or no access to a number of amenities e.g. electricity, education, food; they are communities where poverty is concentrated; communities with poor infrastructure of all kinds; communities with little or no formal employment, but above all, they have rich cultures, abundant indigenous knowledge and potentials to use ICTs to develop. An appreciation of their situations should inform any move for using ICTs, that is, efforts to develop them using ICTs should take into consideration their real life circumstances. Where modern technologies are applicable, they should be used, and the same should apply to indigenous technologies. The chapters illustrate that the poor have capabilities to use ICTs that are compatible with their circumstances. This book carries an optimistic note that indeed opportunities for development using ICTs have opened up. This is not an illusion as chapters in this volume demonstrate this reality. Much can be learned from these chapters. This book will attract policy makers interested in ICTs as an integral strategy of rural community development. An important segment of this audience is the adult learner in the context of social work, community development, extension work (used as a textbook in the conventional and out of school education settings as well as in adult basic education), continuing professional education, extension education, community development settings, or other higher institution of learning such as tertiary, university, and colleges.

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