

**INFORMATION AND COMMUNICATION
TECHNOLOGIES FOR DEVELOPMENT
IN AFRICA**

Volume 1

**Opportunities and Challenges
for Community Development**

Edited by Ramata Molo Thioune

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List of acronyms and abbreviations

Acacia	Communities and Information Society Program of IDRC
AHI	Africa Highlands Initiative
AIDS	Acquired Immunodeficiency Syndrome
ATI	All Taxes Included
CCK	Communications Commission of Kenya
CEEWA	Council for the Economic Empowerment of Women of Africa
CIC	Community Information Centre
CODESRIA	Council for the Development of Social Science Research in Africa
CRC	Community Resource Centre
DSIN	Digital Service Integration Network
ELSA	Evaluation and Learning System for Acacia
ENDA	Environment and Development Action
FASI	Family Support Institute
FLE	Family Life Education
FM	Frequency Modulation
GEEP	Group for Population Study and Teaching
GPF	Women's Promotion Grouping
VCMR	Village Communities Management and Rehabilitation
GSM	Global System for Mobile Communications
IBA	Independent Broadcasting Authority
ICASA	Independent Communication Authority of South Africa
ICRAF	International Agro-Forestry Centre
ICTs	Information and Communication Technologies
IDRC	International Development Research Centre

IP	Internet Protocol
ISP	Internet Service Provider
ITU	International Telecommunications Union
KCL	Kencell Communications Limited
KPTC	Kenya Posts and Telecommunications Corporation
MCT	Multipurpose Community Telecentre
NCS	National Communications Secretariat
NEPAD	New Partnership for Africa's Development
NIC	National Internet Centre
NRM	Natural Resource Management
NGO	Non-Governmental Organization
OSIRIS	Observatoire sur les Systèmes d'Information, les Réseaux et les Inforoutes au Sénégal (Observatory on Information Systems, Networks and Information Highways in Senegal)
PCK	Postal Corporation of Kenya
SAED	Société d'Aménagement et d'Exploitation des Terres du Delta du fleuve Sénégal et des Vallées du Fleuve Sénégal et de la Falémé
SATRA	South Africa Telecommunications Regulation Authority
SCA	Sports and Cultural Association
SENELEC	Société Nationale d'Electricité (National Electricity Company of Senegal)
SENTEL	Sénégalaise de Télécommunications
SME	Small- and Medium-Sized Enterprises
SONATEL	Société Nationale de Télécommunication (National Telecommunications Company of Senegal)
STD	Sexually Transmitted Disease
TKL	Telkom Kenya Limited
TPS	Fondation du Trade Point Sénégal
UNCSTD	United Nations Commission on Science and Technology for Development
UNFPA	United Nations Population Fund
UTL	Uganda Telecom Limited
VAT	Value-Added Tax
VCMR	Village Communities Management and Rehabilitation
WARF	West Africa Rural Foundation

■ **Foreword**

Africa is confronted with many challenges. One of the most important of these challenges is to integrate the continent into the information society. Africa's isolation must be overcome by reducing the digital divide and facilitating the continent's absorption into the global information society.

In an avant-garde approach, and convinced that research through the production of learning and applicable knowledge could contribute significantly to a better development, the International Development Research Centre (IDRC) launched a program known as Acacia. This new initiative was exclusively devoted to Africa and was a direct response to appeals from Africans to help pull their continent out of underdevelopment.

By launching the Acacia program, IDRC, enriched with its experience in the area of development research, wanted to contribute to the production of an essentially African body of knowledge on the role of information and communication technologies (ICTs) in the economic and social development process. This body of knowledge and learning was to enlighten decision-making and ease the integration of the continent into the information era.

The Acacia projects that were developed and implemented in partnership with development actors and African researchers were oriented toward learning. This focus on learning and the production and sharing of knowledge is reflected in the systematic documentation and evaluation of Acacia's experiences in sub-Saharan Africa.

This book synthesizes the results of the first "generation" of pilot projects on the introduction of ICTs in poor communities. It highlights the opportunities and challenges that these communities face as they attempt to adopt ICTs as a means of their integration into the new economy. These results are analysed in terms of conditions, processes, methods, and strategies for introducing and appropriating ICTs.

Produced through cooperation between IDRC and African institutions and communities, this volume comes at an opportune time. We hope that its readers will use its findings to turn ICTs into real tools at the service of sustainable development in Africa. By accepting to jointly publish the book, the Council for the Development of Social Science Research in Africa (CODESRIA) also confirms IDRC's partnership approach and its deep conviction that the development of Africa must and can be achieved by and for Africans.

Adebayo Olukoshi
Executive Secretary
CODESRIA

Maureen O'Neil
President
IDRC

■ Preface

For the past few decades, the international community has noted a growing digital gap between developed countries and Africa, on the one hand, and within African countries, between the elites and the poorer and underprivileged populations, on the other hand.

New information and communication technologies can serve as a development lever to speed up the economic development of Africa and its poor communities. ICTs are also known to transform communities. However, the details of these transformations and the degree and pace of such changes in poor communities have yet to be fully grasped. Equally, the ways in which ICTs might best serve development are still relatively unknown.

Therefore, it is critical to determine the implications that these changes will have for the poor communities that ICTs are supposed to transform. Studies and investigations are needed to generate new hypotheses that can be tested. The results of such research must also be shared rapidly and effectively to keep up with the pace at which ICTs evolve.

In response to Africa's appeal in 1996 at the Midrand Conference in South Africa, in 1997 IDRC initiated the Acacia program to help enlighten African decision-makers and their partners on the fastest and most appropriate ways and means of filling the digital gap between Africa and the rest of the world. Acacia was unique because from the start it was a research program focused on underprivileged or marginalized communities of sub-Saharan Africa. Acacia worked on the hypothesis that ICTs can help poor communities in Africa to find new ways to develop and improve their standard of living. A research-action approach was used to develop projects on themes such as governance, employment and entrepreneurship, natural resource management, and health.

In May 2002 in Nairobi, Kenya, members of the Acacia team met and expressed the urgent need to gather knowledge about the research that

had been supported and to disseminate this information on a broad scale. During the same month in Kampala, Uganda, the Evaluation and Learning System for Acacia (ELSA) team met to establish an action plan to assess the research that had been conducted under the Acacia project. These assessments were designed to meet the information needs of both IDRC and its partners. At this meeting, it was decided that to document Acacia's activities, studies focusing on communities should be conducted on a pan-African scale.

Two of the studies (on community telecentres and school networks) dealt with the infrastructure and modalities of gaining access to ICTs. The third study, which is the subject of this book, tried to determine how Acacia and the ICT projects it supported "added value" to the grassroots communities and the development processes they were implementing.

As their contribution to the learning process, the researchers involved in this study try to answer questions on community access to ICTs, access being analysed in the sense of availability, utilization capacity and opportunities for all community members. The study also attempts to respond to interrogations linked to the process of introducing ICTs, to the level of participation of the communities and to their reactions to these new technologies. It further proposes some answers to questions relating to the adaptability of ICT technologies and their impacts on the communities.

It is hoped that the findings of this study will help managers in both Acacia and IDRC, as well as their partner organizations, to improve ongoing initiatives and direct future programs. Organizations and researchers working on ICT as well as NGOs, African governments, and donors may also be interested in how these findings can contribute to future ICT programs.

Clearly, the purpose of this study is not to verify Acacia's hypothesis. The research is exploratory and descriptive – with a focus on communities and their reactions to technological innovations that will bring about changes in their daily life and may help improve their living conditions. The study highlights the processes and changes that were observed within these communities, and describes the optimum conditions required for implementation of ICT projects in poor environments.

This book is a synthesis of four case studies conducted in communities in rural and suburban areas of Kenya, Senegal, South Africa, and Uganda. In Kenya, the focus was on communities that had not yet been in contact with the new ICTs. The results suggest that these communities first needed

training and information on ICTs and on the opportunities that ICTs could offer. The Ugandan case study looked at communities that were just starting to have contact with the new ICTs, and were beginning to perceive the possible uses of these tools in their areas of activity. In Senegal, the case study demonstrated that the people effectively use ICTs, notably in their daily activities and for personal purposes. Although the uses are more individualized in these communities, ICTs have also been appropriated and used for community purposes. The evaluation of the Msunduzi project in South Africa documented the relatively advanced use of a web site to support socio-economic development in the environment sector.

The book is divided into five chapters. Chapter 1, the introduction, describes the specific context of ICTs in the countries reviewed and analyses the general problems raised by ICTs in relation to development. It also addresses research problems and the conceptual framework for the study.

Chapter 2 gives an overview of the ICT environment in Kenya, Senegal, South Africa, and Uganda. It underscores the different institutional and regulatory changes that were implemented in these countries to develop the telecommunications infrastructure. It also shows that a consistent and systematic policy aimed at integrating ICTs in all aspects of the economic and social life of the communities is unavailable. Nor is ICT infrastructure present in all regions of these countries. Most of the infrastructure and users are concentrated in the big cities, particularly in the capitals; whereas, the rural areas are neglected; thus creating a bipolarization of ICT usage.

Chapters 3 and 4 not only explore the expectations of African communities in using ICTs, but they also compare both the expected and observed impacts of ICTs within the communities studied in sub-Saharan Africa. Users noted some positive changes both in individual and collective activities and in their environment, thus attesting to the transforming potential of ICTs.

Chapter 5 highlights the major challenges in appropriating ICTs for development. It analyses lessons drawn from the various ICT projects to identify and draw attention to the main challenges in, and prospects for, the appropriation of ICTs by poor communities. These challenges concern decision-makers, researchers, development actors, and the communities themselves.

This study will be followed by a series of more systematic studies dealing with specific themes related to the hypotheses and problems generated during the research process.

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