ACACIA

IN

KENYA

A STUDY OF INFORMATION AND COMMUNICATION TECHNOLOGIES & COMMUNITY DEVELOPMENT

Final Research Report

Florence Etta
Aquinata Agonga
Salome Katia

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LIST OF ACRONYMS AND ABBREVIATIONS

ACACIA is not an abbreviation

AISI	African Information Society Initiative
AMREF	
ASAL	Arid and Semi Arid Lands
CCK	Communications Commission of Kenya
CPE	Customer Premises Equipment
ELSA	Evaluation and Learning system for Acacia
FASI	Family Support Institute
GMPCS	Global Mobile Personal Communication by Satellite
ICTs	Information and Communication Technologies
IDRC	International Development Research Centre
IEC	Information, Education and communication
ISP	Internet service Provider
KPTC	Kenya Posts and Telecommunications Company?
MCT	Multi-purpose Community Telecentre
NCS	National Communications Secretariat
PCK	Postal Corporation of Kenya
SAREC	
TKL	Telkom Kenya limited
VSAT	

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1.0 INTRODUCTION

This report presents the findings of a study undertaken as part of a pan-African effort of the Acacia initiative of the International Development Research Centre.

The Acacia initiative was conceptualised in 1996 and launched in 1997 as IDRC's contribution to the empowerment of sub-Saharan African communities with the ability to apply information and communication technologies to their own social and economic development. The initiative is named after the Acacia tree of which there are hundreds of species all over Africa, in the hope that like the tree, the idea of Information and Communication Technologies, their creative use, appropriation and diffusion will grow and flourish in the continent of Africa. At the time this initiative was launched by IDRC, very few international development agencies were implementing ICT projects in Africa.

ACACIA was initiated in response to the call for an African Information Society Initiative (AISI) endorsed by African governments as an action framework to build Africa's information and communication infrastructure. It was designed as an integrated program of research and development action using demonstration projects to address issues of technology, infrastructure, policy and applications.

The objectives of ACACIA were stated as follows;

- To demonstrate how ICTs can enable communities to solve development problems in ways that build upon local goals, cultures, strengths and processes; and

- To build a validated body of knowledge and a networked dissemination process around effective approaches, policies, technologies and methodologies.

Acacia's original vision was to target disadvantaged and mainly rural communities, isolated from information and communication networks, and marginalized groups within these communities in particular, youths and women. A key element of this vision was to use ICTs in the search for solutions to local development problems.

The specific outputs from the ACACIA initiative were expected to include the following;

- Pilot projects testing different approaches to providing community access to ICTs.
- Models showing how community voices can be extended to reach and impact local planning and governance through the use of ICTs.
- On-the–ground applications to meet local health, educational, natural resources management and other development needs.
- Technology (software, hardware etc.) adapted for local use in rural and disadvantaged communities.
- Innovative infrastructure which extends networks at low cost.
- Research into how to make ICT policy, regulation and practice more friendly to those currently disenfranchised.
- More effective utilization of research results by communities through a system of continuous learning and evaluation.

Acacia's implementation strategy involved working in a select group of countries as test beds and experimental grounds to guarantee concentrated learning in a short period of time. Between 1997 and 2000, Acacia concentrated its work in four sub-saharan Africa countries namely; Mozambique, Senegal, South Africa and Uganda. A few projects were implemented in other countries e.g. Kenya, Tanzania etc. Table 1.1 presents a list of projects undertaken in the East Africa region in the period under discussion.

1.1 Acacia in Kenya

It would appear from Table 1.1 that few Acacia projects have been undertaken in Kenya. In addition to the two projects identified in the table as having been implemented in Kenya, close to ten other specific project-type activities have been executed in Kenya between 1997 and 2000. These include the following:

- Workshop and Consultancy for Human Resources Development for Acacia
- Encouraging Private Sector Investments in ICTS (Kenya)
- Africa Telemedicine Conference
- Building Bridges-Private Sector Partnerships for Acacia Initiative
- School to Community Connectivity
- Workshop on Youth Leadership Program for ICTs for Community Development
- Methodology Workshop for Pan-African Telecentres
- Content Development for Trade and Information

The table shows Kenya next to Uganda with regard to Acacia's investments and efforts in the region. The decision to expend more effort in Uganda instead of Kenya was based on the existing telecommunications environments in both countries at the time Acacia was launched. Uganda was, and to reasonable extent still is, a more enabling environment for ICT projects and experimentation. According to M. Mureithi (2001), Kenya, although an early leader in Internet service delivery in the region is faring less on the major telecommunication indices of fixed local access, long distance, international service, VSAT, internet backbone and cellular services. On all these indicators, the current picture is either that of a monopoly by the government or of partial competition. The next section provides details of this picture.

TABLE 1.1 ACACIA PROJECTS IN THE EAST AFRICA REGION 1997-2000

Project Location	Project Title	Start Date
anzania	Multi-purpose Community Telecentre Pilot Project: Sengerema Tanzania	May 2000
ganda	Multi Purpose Community Telecentres-Nakaseke	February 1998
enya/Uganda/Tanzania	Exchange of Information and Sharing of Experiences among Communities in East Africa	April 1998
enya	Enhancing Women's Participation in Governance Through Increased Access to Civic Education	April 1998
ganda	African Highland Initiative	April 1998
ganda	Community Empowerment through ICTs	May 1998
ganda	Economic Empowerment of Women through ICT's in Uganda	June 1998
enin, Burkina Faso,Cameroon, hana, Guinea, Malawi, Morocco, igeria, Rwanda, Senegal, Tanzania, ogo, Uganda, and Zimbabwe.	Valorisation de matieres vegetables (Afrique) II	1998
ganda	Computer-based Learning Materials for Micro-enterprise for Rural Women	April 1999
ganda	Uganda Acacia National Secretariat-Extension of Funding	July 1999
ganda	Electronic Delivery of Agricultural Information to Rural Communities in Uganda	April 2000
ganda	Strengthening Community- Based Organisations through ICTs in Uganda	April 2000
ganda	Policies and Strategies for Rural Communication in Uganda	Sept 2000
ganda	Telemedicine Project: Enhanced Access to Health Services and Information through ICTs in Uganda	May 2000

1.2 Kenya Telecommunications Context

The Telecommunications context in Kenya was a major determinant in the location of many of Acacia's early projects in neighbouring Uganda. This picture is explored in this section of the report. The telecommunications sector in Kenya was dramatically changed with the enactment of the Kenya communications Act, 1998. The Act, which replaced the Kenya Posts and Telecommunications Corporation Act (cap 411), came in to effect from July 1st 1999. The Act provided for the establishment of an independent organ, the Communications Commission of Kenya (CCK) as well as a National Communications Secretariat (NCS) located within the Ministry of Information and Communications to act as the policy advisory arm of the government in matters relating to the info-communications sector. The Communications Commission of Kenya (CCK) serves as the sector regulator, and Telkom Kenya Limited which used to be in integral part of the KPTC along with other licensed network operators now serve as public telecommunications operators, although Telkom seems to have an advantage over the others. The Communications commission of Kenya (CCK) performs such functions as licensing, price regulation, equipment approval, management of radio frequencies, interconnection, and universal service obligations.

1.2.1 Telkom Kenya Limited (TKL)

Telkom Kenya limited (TKL) was established in 1999, following the separation of Kenya Posts and Telecommunications Corporation (KP&TC) into three legal entities, namely Telkom Kenya Limited, Postal Corporation of Kenya (PCK) and the Communications Commission of Kenya (CCK). Telkom Kenya took over all the telecommunication functions of the parent organisation, KP&TC. Telkom Kenya is a public Telecommunications Company registered under the companies Act and currently is 100% owned by the Government of Kenya. The government is currently searching for a strategic investor for 49% of the equity shares.

Telkom Kenya holds licenses for and operates all the services previously offered by its predecessor, KP&TC. These include; Local Telephone Services, National Long Distance Telephone Service, International Gateway Service, Global Mobile Personal Communication by Satellite (GMPCS), Mobile Radio Services, VSAT Services, Internet Node and Backbone Services, Value Added Services, Customer Premises Equipment (CPE) vending, and Internal & External Wiring services. TKL is however beginning to face competitions in most of the services where it does not have a monopoly of the market from new entrants on account of the ongoing liberalisation of the market.

1.2.2 Mobile Cellular Operators

The mobile cellular phone market is currently operating a duopoly with two service providers, marketing products. These are; Safaricom Company limited which has 60% of its shares held by Telkom Kenya and 40% by Vodafone, UK, and Kencell Communications limited which was licensed through a competitive tendering process as the second mobile cellular operator in

January of 1999. These two operators currently have a combined cellular subscriber base of approximately 350,000 mobile.

1.2.3 Regional Telecommunications Operators

The Communications Commission of Kenya is poised to issue regional licenses to private companies/ entities to operate both local and regional long-distance carrier systems in the provinces. The licenses are for the provision of local exchange basic voice services, inter-exchange basic voice services, regional long-distance basic voice carrier services in each of the seven mainly rural provinces outside Nairobi City.

1.2.4 Other Players

Following the liberalisation of the non-strategic portion of the telecommunications sector 1991 and the opening up of the value added service market; the number of private telecommunications service providers increased considerably. There are currently over 300 registered companies dealing with CPE vending, installation, maintenance and the wiring of customer premises.

There are about 60 registered Internet Service Providers (ISPs) and other value added service providers.

1.2.5 Telecommunications Network Development

Since 1981, telephone exchange capacity in the country has increased at an average rate of 15 per cent per annum rising from 112,861 lines in 1981 to about 480,000 lines in 2000. The annual growth rate of the rural component of total telephone exchange capacity increased steadily from 16.6% in 1981 to 24.3% in 1990 before declining to 15% in 1997. An impressive achievement during this period, is the expansion of public telephone services. The number of public telephone booths increased from 588 in 1981 to about 10,000 at present. Table 1.2 shows the growth of the operational mainlines since 1993 and Table 1.3 gives the growth of cellular mobile subscription since 1997.

Table 1.2
Number of Telephone Mainline (1993 - 2000)

Telephones Mainlines 1993 - 2000								
Year	1993	1994	1995	1996	1997	1998	1999	2000
Lines	214,759	228,522	256,434	266,780	271,816	288,251	296,400	310,000

Source : CCK, 2001

Table 1.3
Cellular Subscribers (1997 –June 2001)♣

Cellular Subscribers					
Provider	1997	1998	1999	2000	June 2001
Safaricom Ltd	3,000	6,000	15,000	54,000	160,000
Kencell Com. Ltd	-	-	-	60,000	190,000
Total Subscribers	3,000	6,000	15,000	114,000	350,000

Source : CCK, 2001 ♣Note: Some of the Figures in Table 1.3 are estimates rounded to the nearest thousand.

Telephone service density (*teledensity*) stands at about 0.16 fixed lines per 100 people in the rural areas and about 4 lines per 100 people in the urban areas. In terms of telephone penetration factor (percentage of households/offices with a telephone), nationally, about 4.2% of the households have a telephone line. However, this factor varies widely from 0.1% in the very remote districts, to 27.7% in the city of Nairobi. Most of the telephones in the urban areas are located within offices rather than households.

1.3 Background to the Evaluation

As a pioneer in the area of ICTs for development projects in Africa, Acacia was operating in largely uncharted environments and consequently needed to learn on its feet. This need informed the adoption, by the initiative, of an integrated system of research, evaluation and learning. At its launch in 1997, the Evaluation and Learning System for Acacia (ELSA) was heralded as the most innovative and exciting element of ACACIA. ELSA was conceived as the central and important aspect of the ACACIA Programme Initiative, through which successful development lessons would be extracted and mainstreamed.

As conceived originally, the main objective of ELSA was to "ensure that the overall experimental design of ACACIA's projects and activities are captured within a learning system and that research hypotheses are continuously generated and tested", (ELSA, 1997). The methodology for realising the ELSA objectives at the project level focused on systematic data collection within the context of each project.
The ELSA methodology as articulated at the start of the programme initiative was based on four pillars namely;

- The establishment of baseline data and an evaluation framework for each project to allow the measurement of progress and impacts;
- The development of a system for continuous learning;
- The development of new ways of research, and data analysis; and
- Multi-stakeholder interaction at all levels to facilitate lesson sharing, adaptation and adoption.

ELSA was therefore the powerhouse through which Acacia was to demonstrate the benefits of information communication technologies for solving development problems in disadvantaged

sub-Saharan African communities. The goal of learning about ICTS and development was seen as attainable through research conducted synchronously with experimental and demonstration projects. Conceptualised as a system in which learning is central for key project actors, ELSA was to bring about a significant shift in the practice of project evaluation, away from a policing function towards wider participation and greater sharing and consequently genuine development.

A number of factors operating in concert can be said to have accounted for the emergence of the unique manner in which Acacia conceptualised and operationalised research, learning and development within its Evaluation and Learning System (ELSA). These factors include, among others, the growing disfavour with external and donor driven evaluations of development projects, the rise in the rhetoric of stakeholder participation, and the increasing emphasis on learning within complex organisations.

The reason and underlying philosophy for the ELSA approach was to guarantee learning for a broad spectrum of stakeholders. It is recognised that a large number of individuals located within different structural entities and having contact with projects need to know and learn from project activity. At the most basic level, are the project managers as well as the project beneficiaries or the target audience. The intermediaries e.g. the institutions which act as overseers for the projects also look to learn from the projects. These institutions may represent powerful local or national interests as well as be breeding grounds for local champions. The donors and international development partners also need to find ways of being more efficient and working smarter with less money through lessons from executed projects.

It is a recognised fact that research on the impact of new ICTs on development is not extensive world wide on account of the recency and rapid evolution of computer-based technologies. ICT research is even more limited in Africa, whose entry and participation in the information society (revolution) is currently hampered by infrastructural weakness compounded by poverty. The present study was therefore planned as an evaluation research investigation in order to make a small contribution towards improving the paucity of ICT research especially in the continent. The study was conducted 'according to the best scientific practice so that it can withstand the scrutiny of governments and…. sceptical public and private investors' (Whyte, 2000).

1.4 Definition/Clarification of Key Concepts

The acronym ICT is very commonly used in current discussions of computer based communication and information technology. It is useful to elaborate this abbreviation and show how it is related to other information or communication modes, which appeared in development sometimes long before.

1.4.1 What are ICTs?

Generally speaking, ICTs include all those instruments, modes and means both **old** and **new** through which information is communicated from one person to another or from place to place. Listed among ICTs are the following: the telephone, fax, video, television, radio, print (products of the press: newspapers, books, etc.), computer based or computer mediated modes including

email, chat/news groups, list-serves, electronic conferencing, CD-Roms. The earliest technologies for communicating information such as the talking drum etc should not also be forgotten as belonging to this list. However, increasingly when ICTs are discussed the notion is of computer-mediated forms and modes yet these are the **newest** ICTs. A notion, fast gaining prominence is that a combination of technologies, called convergence in the language of the discourse, is a powerful means of reaching development goals.

1.4.2 What is a Telecentre?

A Telcentre is an integrated information and communication facility, which houses a combination of both new and not-so new ICTs e.g. TV, Video, fax, phone, computer/s with connectivity (i.e. Internet) and sometimes books. In a way, this type of facility in which a number of different information and communication technologies are housed and used in an integrated manner is seen as the modern **Telecentre** and is called a Multi-purpose Telecentre (MCT). There is however a great variety in the form and facilities available at telecentres, from the simple telecentre with only one or two telephones having no link to the worldwide web to a centre with numerous telephones, computers, fax, printers etc and connected to the Internet. Simple telecentres are very common and popular in Senegal whereas the MCTs are a creation of development agencies, very recent and their financial sustainability remains a continuing concern.

2.0 THE EVALUATION: RESEARCH PROCESS AND PROCEDURES

Project evaluations are fairly common and routine tasks and one might wonder why a section of this report is devoted to such a mundane activity. The evaluation process employed in the study being reported contained a few uncommon and innovative strategies. It is for this reason that these are being described in some detail.

The present study was conducted in three African countries (Senegal, Uganda and Kenya), using a similar methodology to enhance across-site learning and comparability of findings or results. The stages in the process included: A research design workshop, instrument preparation, design and instrument pretest and review, and finally data collection and interpretation.

2.1 The Evaluation Research Process

In keeping with the spirit of the ELSA methodology or approach which emphasises two inter related elements of; supporting learning, and broad participation, the present study commenced with a research design workshop in which a broad spectrum of stakeholders were represented. This was the most unusual and innovative aspect of the study. It is a common practice for researchers to conduct research, while evaluations are usually undertaken by expert evaluators. However, in the present study, and through out the entire conduct of the study, participation of key interest groups was maintained for the critical steps or stages in the process. This was in

order to, firstly, ensure that the principal stakeholders share their understanding of the process and secondly to guarantee buy-in for the research results. Buy-in was considered important because the results were expected to be ploughed back into project implementation and programming. Studies have shown that a major determinant of the use of evaluation results is the participation of the users in the evaluation process.

The research design workshop was held in Nairobi in August 2000. The 29 participants represented a broad spectrum of stakeholders. Participants included the following: ELSA Research Associates from the Johannesburg, Dakar and Nairobi offices of IDRC, MCT co-ordinators from Mali and Uganda, project managers from participating countries, representatives of donor/development institutions (UNESCO and IDRC), senior evaluation specialists, researchers and representatives of institutional as well as individual beneficiaries of the projects. The workshop format was designed to allow for the active participation of the wide variety of individuals represented.

The workshop was primarily participatory and iterative, combining the "expert" knowledge of participants as a key resource for guiding the conduct and direction of the evaluation. The major issues were elaborated and the key questions determined at the workshop as were the sample, sources and methods of data collection. The broad design guidelines were taken up by the ELSA research analyst in Dakar, who, in conjunction with other researchers, prepared the battery of instruments, used by the research teams in all the research sites

A training workshop was conducted for researchers and project staff in Kampala, during which, the developed instruments were reviewed, pre-tested and adapted for use in both Uganda and Kenya.

2.2 Research Issues and Questions

The following issues were the concern of the study:

- Community participation in the introduction of ICTs
- Technologies introduced
- Community responses
- Community access to the introduced Technologies
- Contents and applications developed for the introduced ICTs
- Effects and outcomes
- Technical economic, political and social environment
- Capacity building.

The following key questions were investigated in the study:

- What was the process of introduction of ICTs in the community?
- What is the nature of current community involvement?
- What has been the community response to ICTs?
- Is there equitable access to all groups – youth, women the poor?

- What is the technological context?
- How have the communities used the technologies introduced?
- Do the applications and contents correspond to the needs of the community?
- What changes have been observed in the community from ICT use?
- Which capacities (technical and managerial) have been developed in the community?
- What influence has the economic environment had on the introduction of ICTs in the community and vice versa?

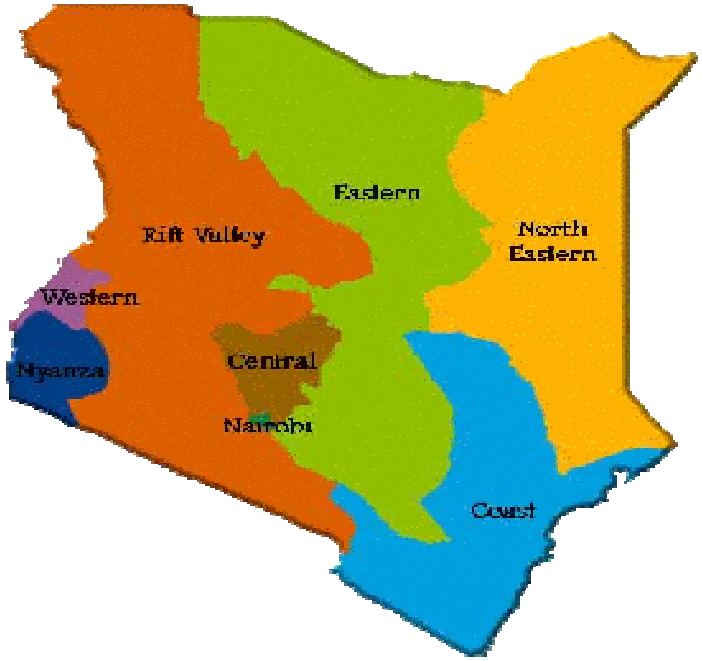
2.3 Methodology

Both qualitative and quantitative methods were employed in the study. Focus group discussions, group and individual interviews and questionnaires were used to collect data in Kakamega and Makueni districts of Kenya where the project investigated has its two operational sites. Kakamega is located in the Western province while Makueni is in the Eastern province. (See Figure 1.1 map of Kenya showing provinces).

2.3.1 Study Sample

Of the two Acacia projects located in Kenya only one, titled "Enhancing women's participation in Governance through increased access to civic information", qualified for the evaluation study based on the criteria for sample selection of age and maturity of project agreed upon at the design workshop. The project is being implemented in two locations, one each in Kakamega and Makueni districts. The other Kenyan project concerned with the "Exchange of Information and sharing of experiences among communities in East and Southern Africa" although started about the same time as the one selected was not more advanced in terms of implementation. Data was therefore collected only for the governance project indicated above.

FIGURE 1.1 Kenya Provinces showing Kakamega and Makueni



Western

Eastern

2.3.2 Instruments, Collection and Analysis

Of the eight instruments developed for use in the study, as listed in Appendix 2 six were used in Kakamega and Makueni, Kenya. The six instruments used were as follows: Interview guide for community Representatives (Infrastructure map), Interview guide for community Representatives (social map), Interview guide for community organisations, Interview guide for Key informants, Interview guide for Project personnel and the individual questionnaire.

Data collection, including primary and secondary data was collected over a two-week period in December 2000.

Two days were spent in each location conducting interviews and administering questionnaires. Interviews were conducted in the local languages as well as in English for those who were comfortable with the language.

Five instruments, four (4) interview guides and one individual questionnaire, were used in the field for data collection. In Makueni, 12 interviewed were conducted. Three of the interviewees completed the Social map, another three the infrastructures map, and two provided responses to the key informant interview. Four individuals representing 4 community organisations were also interviewed and 42 questionnaires were administered. In Kakamega, 24 interviews were conducted as follows: Two responded to the social map, 2, to the infrastructures map, 12 were key informants and interviews were conducted with 8 representatives of community organisations. Seventy-four (72) questionnaires were returned. The total sample for the study in both locations was therefore 116.

Interview respondents included chiefs, assistant chiefs, community leaders, a social worker, chairpersons of community organizations or groups such as women's and self-help groups e.g. Maendeleo ya Wanawake (Female), Makindu Division Self-Help groups (Male), regular community members and the project Officer/manager.

Questionnaire data was analysed using the SPSS while the interview/ qualitative data was content analysed.

3.0 BACKGROUND AND CONTEXT OF SAMPLE PROJECT

This section of the report is devoted to a detailed description of the project, its aims, objectives and accomplishments in the period under investigation as a backdrop to the evaluation exercise. It is considered necessary for the full understanding of the research findings.

3.1 Enhancing Women's Participation In Governance Through Increased Access To Civic Information

This project which commenced in 1998 is being implemented/ **Executed** by the Family Support Institute, (FASI) Kenya. FASI is a local NGO working in rural communities in parts of the country and especially with women on family health issues. FASI identified two centres for the implementation and operation of the project namely: Shibuye location in Kakamega District, Western province and Nguumo location in Makueni District of the Eastern Province.

The main objective of the project is building on existing infrastructure in community based resource centres, to provide women from the two rural communities of Kakamega and Makueni with the ability to access, generate and utilize civic information to enhance their participation in governance. The resource centres were to be used to perform functions similar to those of telecentres.

It is expected that through this project, women's awareness of their civic rights and responsibilities in the project locations at least will be heightened and a pool of informed women who can intelligently participate in the electoral process created. Accountability and transparency, constituents of good governance, will be deepened among women through their involvement in continuous civic education programmes provided within the project using ICTs.

It is also expected that at the conclusion of this project, women's capacity to participate in political decision-making and especially in matters related to their development would have improved. This would have been made possible through the use of ICTs in the expansion and upgrading of their traditional information systems and networks.

3.1.1 The Specific objectives of the project are as follows:

- To increase women's awareness of their civic rights and responsibilities
- Increase the pool of informed women who can participate in the electoral process as candidates and voters.
- Increase women's representation in decision making positions in public and private sectors
- Increase control of the electoral process by community members and promote the principles of free and fair elections
- Create awareness of the virtues of accountability, transparency and good governance.

- Improve community women's capacity for decision making relating to development by increasing their access to Information Communication Technologies (ICTs), and their ability to use them for their own needs
- Create increased opportunities for communities to update their information on governance
- Provide increased opportunities for communities to use ICTs to upgrade their traditional information systems and networks.

3.1.2 Project Activities

The activities of the project and the resource or Telecentres were identified as follows;

1. Undertaking needs assessment in the project target districts to determine the status of civic information resources and information and communication technologies.
2. Convening a consultative meeting for stakeholders to review and share information on existing civic materials and information and communication technology resources, assess their adequacy, identify gaps and develop an action plan
3. Generating additional civic education materials and secure information and communication technologies and establish a training programme responding to the identified needs.
4. Establishing resource centres in both project areas equipped with comprehensive civic educational materials and information and communication technologies and training programmes.
5. Recruiting resource people skilled in information and communication technologies, retainers skilled in management of community resource centres and women group leaders from communities in the target areas to participate in the project.
6. Providing training for retainers, and volunteer trainers who will be women group leaders in the management and use of community based information centres and information and communication technologies.
7. Conducting training of women group members from the local communities in civic education and management and use of community based information centres and information and communication technologies.
8. Organising exchange tours between women from different areas to share information.

3.1.3 Project Accomplishments

The project was planned for an initial period of 24 months. At the time of the study the following accomplishments had been recorded for the project according to the project officer/manager.

- A stakeholders consultative workshop.
- Development of civic education materials.
- Development of Civic education, gender and ICT training manuals and curricula.
- Recruitment of Project personnel recruited.
- Identification of premises to house the Telecentres.

- Identification of prospective vendors of the ICT tools.
- Prerequisite Government clearance had been secured.

Five training manuals and curricula were developed in the areas of ICT, Gender, Civic Education and Training Methodology namely; ***Civic Education and ICT Curriculum***, ***Civic Education Training Manual for Training of Trainers, ICT Training Manual***, ***Civic Education Training Methodology Manual, Gender Training Manual.***

In addition to the manuals and curricula, IEC materials in the form of seven posters were developed by project Staff, led by the Project Coordinator, with popular and easy to assimilate messages on governance, ICTs and civic matters. The posters are in Kiswahili.

The manuals target an audience with intermediate level education, whereas, the posters can be understood by audiences of all levels and educational capacities.

3.1.4 Project challenges

According to the project officer, several challenges had been encountered by the project. The major one being under budgeting/under-funding for some project prerequisites such as consultation and expert services in addition to inflation. Under budgeting was also a feature of the allocation of time for achieving set milestones. This had affected project implementation. This resulted in both the slow implementation and the scaling down of the project.

The second major challenge was the absence of basic infrastructure to support the project aims and objectives. In Nguumo location for instance there was and still is no electricity at the project site. Project managers spent valuable time considering a proposal to change the project location from Nguumo to Makindu, since the latter has electricity. But the project beneficiaries would not hear of it. This caused as major delay in project implementation.

3.2 Environment of Project Sites

As indicated in section 2.3.1 above, data was collected from two project sites in Kakamega and Makueni districts.

In Kakamega, one of the chosen sites for the project was in a rural village called Shibuye in Shibuye location, which borders Muranda, Shiholi, Liranda and Shinyalu Locations. All of which are located within Shinyalu division of Kakamega District. Shibuye and Muranda locations are in Shinyalu Division of Kakamega district. A few years earlier, the two locations constituted one single location known as **Isukha Central** but on account of the growing population, it was split into two to enhance governance by bringing the inttitutiions nearer tot he people.Each of the locations has a government-selected with Vitalis Injehu Musoka acting as the current chief in Shibuye and senior chief Francis Mutsotso in Muranda.

The second project site is in Nguumo location of Makueni district. Makueni District is one of the twelve districts that form the Easter Province. It borders Kajiado to the West, Taita Taveta to the South, Kitui to the East and Machakos District to the North (See Figure 1.1).

3.2.1 Geography and Infrastructure

Isukha Central Location

Shibuye location is approximately ten kilometres from Kakamega town and four kilometres off the Kakamega–Kisumu road in Isukha central Location. Isukha Central covers an area of 620 square kilometres with a total population of 42,126 people and an average density of 679 people per square kilometre.

The location is traversed by one main murram road, which runs from from Khayega market to Kakamega town. Some parts of Central Isukha Location, near the laterite/marram main road, at the District Officers' Centre, Shibuye Girls Secondary School, Lirhanda Girls Secondary School and Shibuye market have access to electricity through the government funded rural electrification programme. Some parts of the location also have access to pipe-borne water through the integrated Rural Water System of the Ministry of Water Development, and efforts of Non-governmental, and bilateral water programmes. However, the majority inhabitants get their water from bore-holes and wells situated nearly 1 kilometre away. There is no Post Office in the location and only a few public telephones. The teledensity is very low, close to 1.0:100. There is no community based resource centre, and therefore Isukha Central Location lacks the related services of library, and venue for networking.

Rural roads are generally, not tarred. This makes them near impassable especially during the rainy seasons.

Nguumo Location:

Nguumo location situated along the Nairobi Mombasa road, covers an area of 3,410 square kilometres, with a total population of 151,310 people and an average population density of 44 people per square kilometre.

The area is generally low lying and rises from about 600m above sea level at Tsavo and reaches 1900m above sea levels on the Kilungu Hills. The major land features comprise the volcanic Kyulu Hills, which are situated along the south-western border in Kibwezi division. Other features include granite rocks which rise to about 1100m above sea level forming Mbooni and Kilungu Hills to the West of the district. These hills receive good rains and support coffee, horticulture and livestock production. Afforestation is also done here. Makueni district is mainly drained by the only perennial River Athi and its tributaries of Kambu, Kiboko and Mtito-Andei. The district receives scarce rainfall, which varies with altitude. The average annual rainfall is slightly over 1000mm in the hills and is seasonal. The long rains occur in March/April while the short rains occur in November/December. Most of the district experiences high temperatures through the day and low temperatures at night. The high temperatures experienced

in the low-lying areas cause high evapo-transpiration. The vegetation is predominantly grassland Savannah.

Nguumo location has access to electricity provided by the government funded Rural Electrification Programme. Pipe-borne water is not available, the nearest water source is situated nearly 10 kilometres away from households. Nguumo Location has a community based resource centre, established by African Medical Research Foundation (AMREF) an International health NGO with funding from the International Development Research Centre (IDRC) and Swedish Agency for Research Cooperation with Developing Countries (SAREC) which serves 12 villages. There is one dispensary, no Post Office, and according to survey interviewees, two telephones in **Kiundwani Centre**. The Post Office and more reliable telephones are situated about 10 kilometeres away in Makindu. Teledensity is very low at about 0.5:100.

3.2.2 Social and Demographic Information

There are a total of 8,425 households in Isukha Central (Kakamega district) and 30,262, in Nguumo Location (Makueni District). Children and youth aged below 20 years dominate the population in both project areas and they constitute 52% of the total population. People aged between 20 and 40 years comprise 31.4%, while those aged over 41 years comprise 16.5%. Within households the gender distribution is balanced with males constituting 50.1% and females, 49.9%. The average household size in both project areas is similar, with 38% of the households having less than 4 members. Thirty-five percent of households consisted of 5 - 7 members and large households with over 7 members comprised 27% of the total households.

Both communities are extremely patriarchal. Men control most assets. Women have limited access to family property or assets. Domestic work is clearly defined and women perform most of the domestic chores such as fetching water, cooking etc. In Nguumo, the ethnic composition is predominantly Akamba with some migrant workers from other ethnic groups in Kenya. In Isukha, the predominant group is Luhyia, with Kalenjins, Kikuyus and other Migrant workers from other ethnic.

3.2.3 Educational Profile

There are 16 and 10 primary schools and 5 and 3 seconadry schools in Isukha and Nguumo locations respectively.

In Isukha (kakamega) the Primary Gross Enrolment Ratio for boys was 76% in 1998, that of girls was 70.3%. In Nguumo (Makueni) the GER was 80% for boys and 73.5 for girls. The drop-out rate for boys was 8% in Isukha and 5.2% in Nguumo, while that of girls was 7.2% in Isukha and 5.4% in Nguumo. At the secondary level, GER for boys was 24% and 25% in Isukha and Nguumo respectivelywhile that for girls was 20% and 23% in Isukha and Nguumo respectively.

The pupil-teacher ratio stood at 25.3:1 in Isukha and 20.6:1 in Nguumo at the primary level. The secondary school student–teacher ratio was 14:1 and 9.3:1 in Isukha and Nguumo respectively. These figures show that differences in the educational performance of the two locations.

Literacy levels in the Kakamega area are high with majority of the people having completed secondary school. However, professional/occupational opportunities are limited to teaching, secretarial duties, social work, health work and public administration.

The educational infrastructure, particularly the physical structures, in both areas are fragile. A number of primary schools are constructed to give the impression of temporary structures. The classrooms at both primary and secondary are crowded. There are inadequate learning materials and equipment. There are few text and reference books, limited science laboratory materials and equipment. Both areas have no institutions of higher learning and no Village or Youth Polytechnics. However there are some Adult Literacy Classes. Other than school playing grounds there are no purpose-built recreational facilities.

3.2.4 Local Economy

Figures for provincial unemployment stand at 46% and 52.2% for men and women respectively in Western province (Isukha). In the Eastern province where Nguumo is situated, the rates are 41% and 48.1% for men and women respectively. The economy in both areas is predominantly of a subsistence nature.

The majority of the population in Kakamega and Makueni engage in unpaid family labour, as farm workers, household workers and in family business. Just under one-fifth (16.5%) of the women were engaged in business. The majority of the people in Shibuye location are small-scale farmers whose main cash crop is tea, which is grown and sold to the cooperatives. In addition, they engage in other commercial activities such as: Cattle rearing for milk and meat, beekeeping for honey and wax and pottery making. They also practice subsistence farming for crops such as maize, sweet potatoes, beans and sugarcane. In Makueni, in addition to farming maize, millet, sorghum, beans, sweet potatoes and peas the Akamba are renowned for their skill in wood and soapstone carving.

In both Kakamega and Makueni harvests do not last till the next season. Households were food insecure as a result of low harvests, poor preservation and the habit of selling food crops to purchase other required household goods. Very few women grow cash crops such as coffee and tea which are the preserve of men.

Most households keep livestock, such as cows, goats, pigs, sheep. Except for poultry and sheep, the animals are usually few less than 4. Households commonly sell animals to meet other household needs. Men decide on the sale of animals and the use of the money from the sales. Women make decisions regarding the sale of animal products such as milk, eggs, and hides.

Kakamega is a high potential agricultural zone while Makueni is an Arid and Semi Arid (ASAL) ecological zone with very low agricultural potential. Incidences of absolute food poverty are not uncommon in Makueni. Nguumo Location and indeed the entire district of Makueni are among areas hit by the severe droughts of the past three years (1998-2000) in the country. Over the past two decades there has been a consistent need for relief food in the area.

3.2.5 Political Structure

The local government is based on the Kenya local government structure where the lowest unit of representation is the Civic Ward. The Ward is represented by an elected Councilor in the County Council.

Although women are increasingly participating in elections as candidates and voters, election observers, campaign managers, and election officers few women have to date been elected for civic or parliamentary seats. Obstacles to women's election include high illiteracy, poverty, absence of support from spouses and the unpleasant (abusive) culture of campaign/rally language from male competitors. Women are further disenfranchised from participating in the electoral process by the very harsh nature of their daily lives. But few women discussed these problems with elected leaders.

4.0 FINDINGS

4.1 Description of respondent (questionnaire) sample

4.1.1 Biographic Characteristics

The survey sample comprised 116 respondents from four sub-locations as shown in Table 4.1. Females constituted 54 % of the sample. The dominance of women in the sample can be explained by the fact that the principal project beneficiaries are rural women. Although a general invitation had been sent out to both men and women, a larger percentage of women who were associated with the FASI governance project showed up for the data gathering meetings.

The sample of respondents was mainly married and nearly two-thirds of them were between 18 and 43 years of age. Over 80 percent claimed that they could read and write both English and Kiswahili a direct product of some formal education training which all the respondents claimed to have. Not surprisingly, the principal occupation for over half of the respondents was agriculture. However when disaggregated by sex, it was clear that women dominated in agriculture whereas there were more men involved in education, administration, trading and construction as shown in Figure 4.2.

TABLE 4.1

Location of Respondents

Sub-location		Frequency	Percent
	shibuye	49	42.2
	murhanda	21	18.1
	nguumo	36	31.0
	muuni	1	.9
	Total	107	92.2
	Missing	9	7.8
Total		116	100.0

TABLE 4.2

Sex of Respondents

Sex	Frequency	Percent
male	53	45.7
female	63	54.3
Total	116	100.0

TABLE 4.3
Age of Respondents

Age	Frequency	Percent
< 18 yrs	8	6.9
18-30 yrs	31	26.7
31-43 yrs	45	38.8
44-56 yrs	31	26.7
57+ yrs	1	.9
Total	116	100.0

TABLE 4.4

Marital status

Marital status		Frequency	Percent
	married	74	63.8
	single	26	22.4
	cohabiting	1	.9
	Total	101	87.1
	Missing	15	12.9
Total		116	100.0

TABLE 4.5

Read & Write English

		Read English		Write English	
		Frequency	Percent	Frequency	Percent
	yes	103	88.8	99	85.3
	no	12	10.3	16	13.8
	Total	115	99.1	115	99.1
	Missing	1	.9	1	.9
Total		116	100.0	116	100.0

TABLE 4.6

Read & Write Kiswahili

		Read Kiswahili		Write Kiswahili	
		Frequency	Percent	Frequency	Percent
	yes	95	81.9	97	83.6
	no	20	17.2	18	15.5
	Total	115	99.1	115	99.1
	Missing	1	.9	1	.9
Total		116	100.0	116	100.0

TABLE 4.8

Highest Educational Attainment

Highest Educational Attainment		Frequency	Percent
	primary	50	43.1
	secondary	62	53.4
	university	4	3.4
Total		116	100.0

Figure 4.1

Sex by Educational level

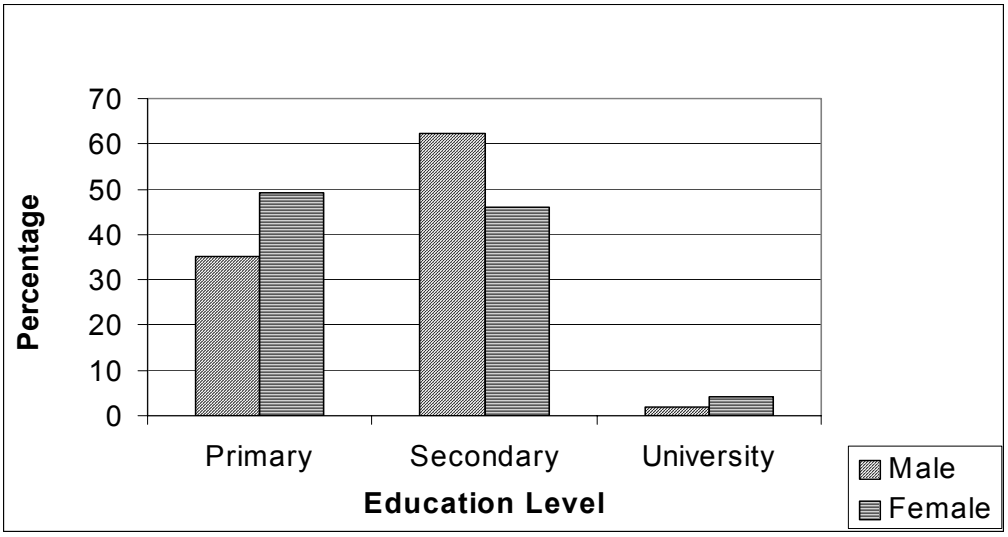
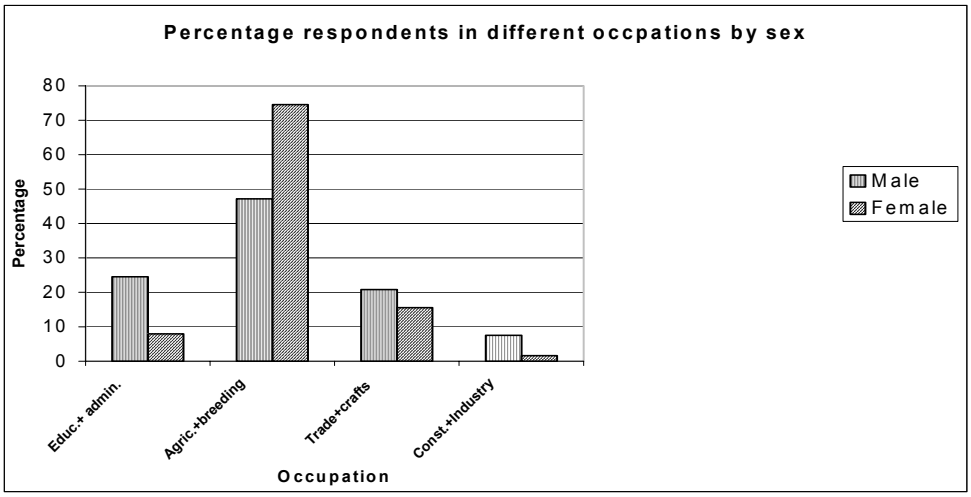


TABLE 4.9
Principal occupation

Principal occupation		Frequency	Percent
	Education	14	12.1
	agriculture	67	57.8
	Trade	17	14.7
	Crafts	4	3.4
	Breeding	5	4.3
	construction	1	.9
	Industry	4	3.4
	Admn/Civil service	4	3.4
	Total	116	100.0

Figure 4.2

Occupation by sex



4.2 Familiarity with and Usage of ICTs (Access)

It must be borne in mind that at the time of this study the project had not installed the ICT equipment (computers etc) upon which the project aims were based. Consequently, much of the data reported in this section is mainly of other ICTs, which were in existence before the project technologies were put in place.

Practically all the respondents admitted that they were familiar with ICTS. This meant that they either knew them by sight or had even used them in the past. In their opinion, ICTS were considered to include TV, radio, telephone, newspapers i.e. the traditionally modern means of information and communication. When asked what their source of information on ICTs were,

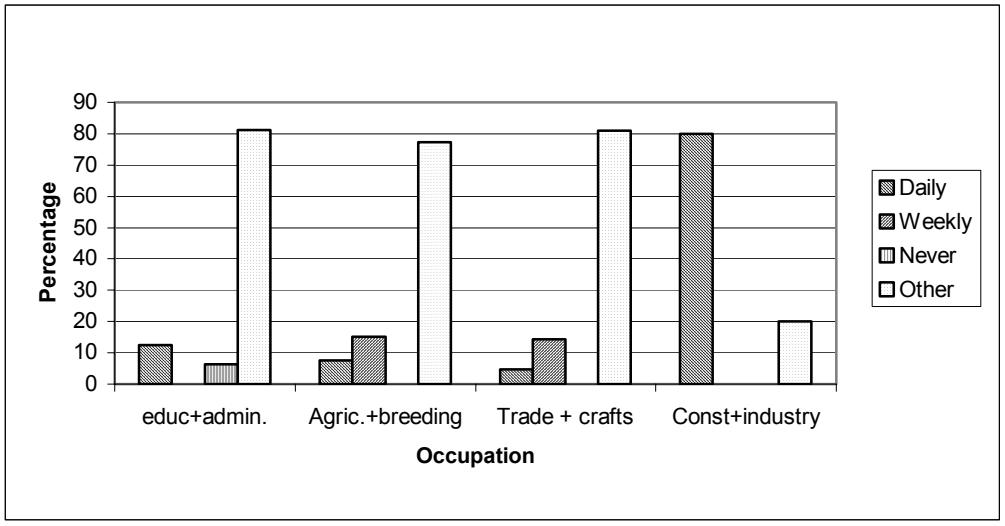
98% of them indicated the Radio, 61% the TV, and 69% stated that they had been introduced to ICTS through newspapers. For 25% of the respondents, some project had been their source while for 10% of the sample, the Acacia project was specifically mentioned as their source of information on ICTs.

When asked if they had used ICTs after their initial introduction to them, 73% indicated in the affirmative. Those who had not used them claimed the following reasons; lack of training, and exposure, meaning an absence of the facilities or technologies, high costs associated with the use of ICTs, equipment breakdowns when available.

The technologies with which the respondents were most familiar were as follows:
Telephone, (73%), computer for word processing (18%), fax (17%), e-mail (3%).
Not a single respondent claimed to have ever used the internet. Most of the use of the identified technologies was claimed to have been made in "town" meaning in larger more urban centres than the rural setting of the current project yet about 16% of the sample stated that the project had contributed to their familiarity with and usage of ICTs. The notion of ICTs which respondents have was dominated by the telephone, radio, and television, when asked if they used them in their daily work, 45 % said they did while 94% claimed to use them for contacting family members. Figure 4.3 shows the reported frequency of usage by occupation. Male respondents engaged in construction and industry were reported to be the most frequent users.

Figure 4.3

Occupation by frequency of usage of ICTs



Respondents were wary that due to low economic levels, *high charges would render the facilities inaccessible to most of us*. ICTs were seen as a preserve of the rich and highly educated. When asked if she thought there was equal access to ICTs one interviewee said, *no because only those with money can afford (*female informant, Shibuye location*)*. The female respondent stated that

both youth and women have good access to ICTs and failed to comment about men. Some male respondents noted that *not all groups can reach the ICTs* speaking with specific reference to the existing telephone. A number of informants noted that *women and girls are still marginalized in the use of ICTs*. Figure 4.3 above seems to confirm this position. The figure shows that whereas 80 percent of respondents in construction and industry claimed to use available ICTs daily, less than 10% of farmers and breeders claimed similarly. Women constitute the majority of farmers and men dominated construction and industry. Obstacles to the use of ICTs were listed as illiteracy, lack of relevant skills and financial constraints.

Women in the study sample seemed to have fared slightly better than the men with respect to training. Training in ICTs was not very widespread when the types of ICTs being reported upon are considered. Only 28 % of the sample claimed to have had any kind of training on ICTs. Of these, about 5% had been trained by the Acacia project while NGO projects had provided similar training for 18% of them. A group of ten women from women organisations in both Kakamega and Makueni had attended a five-day training workshop in Nairobi on ICTs and Community Development in 1999 as part of project activities. It however did not seem that the training received was particularly effective because only 25% of those who had been trained felt that the training made them competent and some indicated that *the training was so long ago that we have forgotten what we learned*.

Figure 4.4

Percentage Trained in ICT usage by occupation

Despite the absence of training and the small numbers of women and youths using the existent technologies in their daily work, 52.6% of respondents felt that the introduction of ICTs had brought changes to their communities. The following benefits of ICT use were identified; farming and weather information, easier communication, improvements in personal hygiene,

and better access to information. Thirty-eight percent of the respondents indicated that their use of ICTs had brought a number of changes including savings on travelling expenses, easier working and communications and some learning.

Since the project works with groups it was considered important to investigate the diffusion of ICTs within local community organisations. Membership of community organisations was shown to be very popular. Practically all the respondents (97.4 %) identified themselves as belonging to one or other group. Groups were identified as either community development, professional or cultural. Self-help groups, seen as performing community development functions were the most popular. 94.8% of respondents claimed to belong to one such organisation.

Notwithstanding the fact that the telecentres were not yet in existence, the informants stated that ICTs have helped to develop organizational and technical capacities in the communities and asserted that these capacities will help to ensure the long term use of ICTs.

The diffusion of ICTs within oragnisations, which resulted mainly from external non governmental funding support did not seem to be more than for individuals as 27.6% of the sample claimed that ICTs had been introduced in their organisations. This introduction was seen by 25.9% of the respondents to have brought changes to the organisation such as making communication quicker. However only about 1% of the sample believed that the introduction of ICTs provided faster information exchange worldwide, improved security, or indeed brought about organisational development and professionalism. This finding is a clear indication of the lack of familiarity with the world-wide-web and/or the internet with its instant messaging capacity.

4.3 Community Participation and Response

Findings suggest that attempts were made at the beginning of the project to involve community members actively as key stakeholders in the project. The Project Officer recounts thus, *a number of community members were identified by FASI and interviewed and were invited to attend a five-day workshop in Nairobi. These members who were from women organisations on getting back, talked to the community about the project. They were also expected to train others and encourage the people to learn and use the facilities in the project for without the support of the community the project could easily fail. The workshop participants were also expected to give moral support, which would enhance popular participation to ensure the sustainability of the project.*

The informants in Nguumo location reported that the Chief called a *baraza (meeting)* in 1997 before the project commenced and informed the community members about it. *FASI also came, introduced itself and explained the project*. Subsequent awareness was through "word of mouth" as people told others in the community. During the *baraza* and awareness meetings, several women leaders acted as the spokespeople, expressing their community needs and asking questions. Through this exchange of information the community came to know and understand ICTs and the project intentions better. Informants expressed the belief that participation in the

project can be strengthened by educating the people on ICTs and this will in turn ensure project sustainability.

> **If the community fully participates in the setting up of the project and are considered then the project will last.**
>
> *Community Representative, Shibuye location 14.12.2000*

The communities expressed happiness and community members were both excited and anxious about the project. Their expectations were that they would have education, acquire knowledge and acquire more information from the outside world. They aspire to use the installed ICTs for business growth. It was also felt that introduction of ICTs would lessen their workload and save time. However, respondents were acutely aware of their own limitations and possible challenges to the project. Factors such as ignorance and low education levels as well as charges for ICT services it was feared would hinder access. Poor infrastructure was stated as a factor currently affecting the spread of ICTs in the areas.

In answer to the question "*What has been the reaction of community members to this project?"* One respondent answers thus *"They have embraced the project and devoted time and money to ensure that it succeeds"*. Another interviewee's response to the same question was as follows; *"This was introduced to us in the best way for we men were informed accordingly"* showing that the men were not altogether left out.

Community members stated their willingness to provide and maintain project facilities. In Makueni, the research team was shown the foundation of a building under construction purported to be the centre to house the project. The community is hopeful that it will be completed in the not-too-distant future.

An issue which was highlighted as necessary for the success of the project that of training and practical knowledge on the use and function of ICTs. Some respondents suggested that it would be important to provide continuous training in order to build the capacity of a core group of individuals.

4.4 Applications and Content (relevance)

The interviewees stated that the project had not yet introduced any ICTs but the hope was expressed that when this was done, then the need information needs of the communities would be met.

Some items in the questionnaire were used to investigate the relevance of currently available ICTs as sources of information. When asked what types of information they would search for from ICTs, the following response pattern emerged. Seventy-six % would use ICTs for contacting family members, 31% would use them for commercial, trade or marketing purposes, and 38% would get research and educational information. Twenty-two percent, 31% and 19% of respondents would get agricultural, health and entertainment information respectively from ICTs.

Community members had not been expressly requested to identify the kinds of applications or content they would love the project to provide and since the project was still young they had not participated in the development of any applications. Most respondents found that this section of the instrument was not applicable. Others however indicated that television can be used to secure and share news from/to other parts of the world, the computer can provide for easy communication (e-mail and internet). While both radio and television can be used to educate community members on a wide variety of issues of concern such as Malaria, HIV/AIDS, food shortages, water - its availability and its safety for human consumption, Transport and communication problems etc. It was hoped that since most people are illiterate, the content would be in local languages and also that the culture and taboos of the community should be respected.

4.5 Technology

The information and communication technologies in existence before the project were Television, Radio, Newspapers, Telephone, Photocopier, Computer, Video, Typewriter, Post Office.

The nature of interaction men and women have with technology is often used as indicator of the rate of diffusion or acceptance of a new technology. To date the few available studies suggest that young men are keen adopters of the new ICTs. In the present study, the data shows that the numbers of men and women who indicated having used telephones were not very different; 51.3 men and 48.8 respectively. More women claimed they had used the fax and word processor (29.8% and 39.5%) than men (3.8% and 0%) respectively. However, whereas more men, (5.7%) than women (0%) claimed to have ever used e-mail no men or women had used the Internet or world-wide-web.

No technologies had been introduced by the project at the time the study was conducted. Respondents said they were unsatisfied with the poor infrastructure in their locations because the situation did not encourage the siting of new projects in their home areas. Some of the informants stated that the poor infrastructure was affecting the introduction of new and required technologies. As one interviewee put it *poor people need information too!* The project manager gave the example of the project site in Makueni where infrastructural problems were encountered. *The original site where the telecentre was to be located was in Kiundwani. However, this choice was problematic on the basis that there is no electricity in Kiundwani. The market centre of Makindu,which has electricity, is fifteen minutes away from Kiundwani and the administrative centre of Nguumo Location was selected as a sustitute.. Upon deliberation, the*

people of Kiundwani, who are the direct beneficiaries of the project, felt that the financial costs of transport to Makindu town would be too high for majority of them. They therefore opted to look for a plot within Kiundwani itself and find a means through which they would connect the Centre to electricity. They have also suggested to FASI to provide them with a generator.

5.0 CONCLUSIONS/RECOMMENDATIONS

In this section an attempt is made to provide answers to the questions posed for the investigation. The ten major ones were as follows:

- What was the process of introduction of ICTs in the community?
- What is the nature of current community involvement?
- What has been the community response to ICTs?
- Is there equitable access to all groups – youth, women the poor?
- What is the technological context?
- How have the communities used the technologies introduced?
- Do the applications and contents correspond to the needs of the community?
- What changes have been observed in the community from ICT use?
- Which capacities (technical and managerial) have been developed in the community?
- What influence has the economic environment had on the introduction of ICTs in the community and vice versa?

The study has provided glimpses to the first five but the last five questions could not be answered on account of the state of maturity of the project investigated.

The process of introduction of the project into the community was shown to have been conducted in a manner, which used and respected the traditional practices of the community members i.e. using chief's ***brarazas***. A fair number of respondents assert that the project was introduced well and that the population was involved in the process through consultations.

Community involvement was sought and secured for project implementation. The community members are keen to have the project in their areas but the slow pace of implementation worries some of the community representatives. Some have become understandably anxious and wary of researchers as the following quote shows. *We have been answering so many questions sometimes we wonder whether you people are serious because you use pencils and go away never to communicate again. We suspect you go rub the questionnaires and send new faces*
(Source: Chairlady Shakungu Womens Group, Shiyanlu).

At the time of investigation, the role being played by the community in the project included the provision of manual labour for the construction of the telecentre facility and financial contributions towards the project in Makueni.

The delay in the implementation of the project created numerous "not applicables" in answer to quite a number of items in the instruments making whole sections of some of the instruments almost ineffective. For instance the sections on effects and outcomes and capacity developed

were impossible to complete as most of the items were not applicable. In other instances, responses were more speculative and presumptive. This was the case with the item which asked the question, "What role does the community currently play in the project?" The responses, which identified maintenance of the facility, providing security to avoid damage and theft to the equipment were purely speculative. On account of the fact that the project had not been fully implemented, the informants were responding on the assumption that they would have to deal with issues of damage and security of equipment when the project becomes. This is declarative yet not based on factual reality. It is unclear if this will indeed be the real reaction in the event of the project is well underway.

Similarly, concerning access to the project ICTs some respondents assumed that all groups would have equal access.

The point being made here is that it is difficult to divine the effects or impacts of the project in the absence of the major project activities. Community members and respondents gave answers from past experience in relation to other projects under the assumption that the situation would be the same with the project under investigation. Yet this is valid.

In answer to the question regarding community response to ICTs, if the reaction to the older already introduced ICTs is an indication, responses will definitely be gendered. Secondly, if the rates of uptake of these older technologies are so low within the sample what hope can there be for the new ICTs to be widely available in these rural areas?
The study shows that there currently isn't equitable access to all groups – youth, women the poor to the available ICTs? It suggest that women, youth and the poor have less access to technologies and use them less frequently than men. The project has however mobilized women in the two locations.

The technological context of the project locations in the two rural districts where the projects are located remain infrastructurally poor and fragile therefore technology based projects have great difficulties and challenges to overcome in these circumstances.

Partly on account of the above challenges, the study could not provide answers to the following questions;

- How have the communities used the technologies introduced?
- Do the applications and contents correspond to the needs of the community?
- What changes have been observed in the community from ICT use?
- Which capacities (technical and managerial) have been developed in the community?
- What influence has the economic environment had on the introduction of ICTs in the community and vice versa?

5.1 Recommendations

The project had not been fully implemented by the time of writing the report but great expectations have been raised in both communities.

It is recommended that IDRC and FASI work harder towards full implementation. This might entail an extension of official project completion dates.

Collaboration with government departments and local institutions to ensure that project equipment is put in place and project information provision activities commence in earnest should be made a matter of priority.

The possibility of collaborative funding of activities with the local government could be investigated and worked out in order to secure additional resources for the project.

Community members have been waiting for the project and may eventually lose interest altogether if the tempo does not improve. Communication from FASI to the community takes a long time. For instance about eight months elapsed between the time the community representatives were trained in Nairobi in the five-day workshop and the research team's evaluation visit. In this time the community heard virtually nothing more about the project. They were not sure what was happening. Communication should be improved between all the principal stakeholders i.e. project implementors, funders or sponsors and beneficiaries.

Community expectations about computers that every single problem of theirs will be solved need to be made realistic. The community needs to be educated about the importance as well as the limitations of the introduction of ICTs into their community. The use of ICTs to solve their needs and to provide general knowledge as well as the real benefits and possible cost of the project should be made clear.

Certain structures should be put in place for to ensure adequate management of the project and guarantee sustainability after IDRC sponsorship is over.

A strong local team should be trained to understand the project so as to be able to carry on with project activities at the end of the project life.

A system for regularly documenting project experiences and activities should also be developed and implemented.

Negative effects should be avoided such as the friction that developed between the community members and the owner of the land on which the telecentre is being constructed.

The organisational structures in the communities e.g. the community organisations, self-help and women's groups should be taken care of in the provision of facilities when the centres are operational. Although the project is largely women oriented, men and youth should be involved as well. The involvement of the men in should be encouraged while the target should not be lost in the process.

In conclusion, although the project still has a long way to go and there is no doubt that the people look forward eagerly to its materialization. This is the ultimate test and challenge for development action.

BILBLIOGRAPHY

6.0 APPENDICES

6.1 Appendix 1

Detailed Research Questions

The following questions guided the inquiry.

1- Community participation

a) What was the process of introduction of ICTs in the community?
- ♦ Was the introduction based on expressed community needs?
- ♦ How was the community involved?

b) What is the nature of current community involvement?

2- Community response

a) What has been the community response to ICTs?
- ♦ What is the community response of the ICTs
- ♦ What are the community attitudes towards ICTs?
- ♦ How knowledgeable are the communities of the ICTs?
- ♦ How have community practices changed with the introduction of ICTs
- ♦ Are there barriers (social cultural, political, financial/economic) towards the introduction of ICTs?
- ♦ How can knowledge, attitudes and practices been improved for effective ICT use?

3- ICT access

a) Is there equitable access to all groups – youth, women the poor?
- ♦ What is the nature and extent of use?
- ♦ Who are the users and non-users?
- ♦ How are ICTs located in communities?
- ♦ How have communities used the technology?
- ♦ What are the barriers to use?

4-Technologies

a) What is the technological context?
   - ♦ What technologies existed before the projects?
   - ♦ What technologies were introduced by the projects?
   - ♦ What are the types of technologies in use?

b) How have the communities used the technologies introduced?
   - ♦ Is the technology appropriate with for the local context?

- Has there been any adaptation of the technologies to suit the local context?
- In what ways have the ICTs facilitated the acquisition of technical skills?

5- Applications sand contents

a) In which activities have ICTs been used/applied?
b) Do the applications and contents correspond to the needs of the community?
- What is the relevance of the ICT content provided?

c) How was the local content created?
- What are the skills required for the creation of local contents?
- What is the contribution of the communities in contents creation?

6-Effects and outcomes

a) What changes have been observed in the community from ICT use?
- Has ICT usage contributed to community capacity building?
- Have ICTs empowered disadvantaged groups e.g. women, youth, disabled, illiterates?

7- Community capacity

a) Which capacities (technical and managerial) have been developed in the community?
b) How do these capacities enable the sustainable use of ICTs?
c) What type of training is needed for the community to bridge its capacity gap?

8- Environment

a) What influence has the economic environment had on the introduction of ICTs in the community?

b) What influence has the political environment had on the introduction of ICTs?
- Is there an ICTs or similar policy?
- Does the government policy support community involvement?
- Does policy address universal access?

c) What influence has the technological environment on ICT development?
- What are the basic infrastructures for ICT introduction?

6.2 Appendix 2

Interview guide for community Representatives (Infrastructure map)
Interview guide for community Representatives (social map)
Interview guide for community organisations
Interview guide for Key informants
Interview guide for Project personnel
Interview guide for Project technicians/specialists
Interview guide for Telcom Operators
Individual Questionnaire

6.3 Appendix 3

Evaluation Team Members

Florence Etta,
IDRC, Acacia *Principal investigator*

Aquinata Agonga, *Research Assistant, Kakamega*

Salome Katia, *Research Assistant, Makueni*

Charles MUKANGA, *Contributor*
FAMILY SUPPORT INSTITUTE, P.O. BOX 30913, NAIROBI FASI

Kemei. C. Christopher, Contributor
CCK, Nairobi, Kenya