Chapter 4

Use of ICTs: Impacts on African communities

The central hypothesis of the Acacia program is based on the perspective that new ICTs can transform communities. The objective of this section is to highlight the effects that the use of ICTs have had on the communities targeted by the projects supported by Acacia. Although it is premature at this stage of the research to conclude that ICTs have contributed significantly to the development process in Africa, some of the findings attest to emerging changes that can be attributed to ICTs and their use. These observations herald the important role that ICTs might play in community development in Africa if significant constraints were lifted.

This chapter describes the effects or changes experienced by ICT users in communities in Kenya, Senegal, Uganda, and around the Msunduzi River in South Africa. These communities have reached different levels in their use and appropriation of ICTs. For example, in Uganda and Kenya, the communities surveyed generally do not use the new ICTs. However, in Senegal the communities do use them and they have started to apply them to their various activities (mainly at the individual level). In South Africa, the community around the Msunduzi River has used ICTs in natural resource management.

The projects initiated in the first phase of the Acacia program were mainly meant for demonstration and experimentation and, on average, had a 2-year duration. The research revealed – and confirmed by users themselves – that ICTs had some effects on individual users and community organizations. We can therefore infer that the transforming effects of ICTs are visible right from the early stage of their use.

Development is a dynamic and iterative process that unfolds over time. Processes are very important to the understanding of observed changes. This section analyses the process of ICT introduction against the backdrop of global technological innovation. Accordingly, it is important to highlight the changes in community perceptions and behaviours that occur as ICTs are introduced and appropriated. These are separate from the real changes or effects that resulted from the introduction and use of ICTs in individual and community activities.

Changes in perceptions and behaviours

In Uganda and Kenya where the new ICTs had not yet been introduced by the projects, most of the rural communities believe that computers are not made for them. It was mainly the community leaders and project heads who had used or heard about ICTs who believed that they could be useful tools for development.

In Senegal, where the new ICTs have been introduced in the communities surveyed (even in non-electrified areas), it was evident that this was the first access and physical contact that the communities had had with the new ICTs. Most of the respondents believed that the access to ICTs in their communities constituted a great change in both their environment and behaviours. Users who had been in contact with ICTs felt that their standing had increased, especially among those who know how to use and manipulate these tools.

The use of ICTs increases the visibility of the villages, which in turn stimulates its economic potential. Community leaders increasingly participate in forums and seminars where they can make contacts, learn from the experiences of others, and generally increase their knowledge and share it with their constituents. Examples of these interactions include participation in the “Africa Connects Conference: Education in the Internet Age” project and participation in methodological workshops and seminars organized by Acacia and ELSA.

Interviews with some community groups highlighted how perceptions and behaviours toward ICTs have changed over time as these groups increased their contact with these tools. The following changes were noted:

- At first, ICTs represent a myth for those who have not been trained in or in contact with these technologies (especially with regard to computers

and the Internet) – they are considered to be a luxury reserved for the "intellectuals."
- After the community groups have been in contact with these technologies, they express curiosity and willingness to discover more about them – demystification is underway.
- The next stage occurs when there is a show of interest, especially by use rs who have discovered the potential of these technologies and who have developed new needs in relation to them (e.g., needs for training and equipment and for various types of information).

Communities were dynamic in their behaviour toward ICTs. First, they showed curiosity, then a desire to learn more, and finally a process to adopt ICTs is triggered, which suggests a form of social ownership. This appropriation process is more rapid when people are trained to use these tools. User behaviour with regard to ICTs also changes over time. After users are trained, they develop technical and organizational skills, which they use not only for their activities but also for the organizations and institutions to which they belong. In addition, trained users were observed to use ICTs more and more regularly.

However, the great majority of the population, who are potential users of ICTs, do not yet see a link, or an even remote relationship, between the use of ICTs and the improvement of their economic and social conditions. A comment made by a community leader in Maka Coulibantang, in Senegal, is quite revealing:

> We want to know how the computer and Internet can improve our living conditions. We know that with a well we have access to water, which we use for our market gardening so we can make more money to buy food and also improve our food diet. But as far as ICTs are concerned, you need to show us how this is possible.

This same perception is noted in Uganda, where many potential users do not always see the usefulness of ICTs (Table 12) and others feel that they are not yet ready to use them:

> For the small business that I'm running, ICTs do not mean anything…these sophisticated machines are not made for people like us. How can those

> machines be of any help? They are maybe useful to educated people who have big businesses to run (A Woman in Uganda, November 2000).
>
> ICTs remain a mystery for the majority of the people…they do not understand things like computers, Internet, email, and other modern means of communication. This might be explained by the fact that they are ignorant or that these technologies are beyond their reach; however, it could also be explained by the fact that they attach little importance to information compared with other more urgent problems such as poverty, healthcare, children's education, and marketing of agricultural products (Community Leader, Kabale District, Uganda, November 2000).

Some community leaders who have been made aware of the potential role of ICTs for development foresee the positive transformative effects of their use:

> Our farmers are facing numerous agricultural problems. Information is the key to solving part of these problems, and hence, to development. An ICT project would be useful if it meets farmers' expectations and information needs. Information is an essential resource for the modernization of agriculture (Director of Production and Marketing, Kabale Local Committee, Uganda).

Changes observed by ICT users in their activities

Put at the disposal of communities, ICTs can become important tools that enable them to enhance both community and individual activities. In the projects discussed here, due to many factors, many of those surveyed did not notice any major changes resulting from the use of ICTs. However, some people noted some changes following the introduction of ICTs in their environment. In Uganda, in communities where the new ICTs have not yet been used, only 45 people observed changes, and these were mainly the result of the use of the telephone. Under the CEEWA project, which aimed to build the capacities of women entrepreneurs through ICTs and training (mainly managerial skills), some women in Buwama, Nabweru, and Kampala noted changes in their economic activities (e.g., small businesses, arts and crafts, pottery, sewing, and hairdressing).

In Senegal, where the new ICTs were actually introduced and used in the communities surveyed, 153 people (about 50% of users surveyed) observed changes that could be traced to ICTs. The range of projects in Senegal was more variable than in the other countries, and only 11% of the 312 users noted improvements in their trade activities, 3.5% in health activities, and 6.7% in agricultural activities.

The major changes that were reported by the studies conducted in Senegal, Uganda, and South Africa, can be summed up in the following areas: capacity building, better sanitary conditions, better educational conditions, higher income, employment generation, higher production, greater involvement in community matters, greater involvement of women and youth in productive activities, improvement of contacts with family members, access to information, and introduction of new values. Some of these changes are discussed in more detail.

Individual capacity building

This oft-cited change in the study is derived from computer and other training programs conducted as part of the Acacia projects. Part of the change can also be attributed to increased use of ICTs. Capacity building in Uganda was linked mainly to the training program set up by CEEWA. In this project, women were able to start up economic activities after they received training. In fact, 69 out of the 90 women surveyed were trained in the management of small- and medium-sized enterprises: 53.6% of them acquired the capacity to calculate cost and benefits; 24.6% the capacity to monitor their activities; 10.1% developed skills in customer service; 4.3% learned to keep statistics; and 11.6% became more experienced in their work.

In addition, 78% of the women who were trained also trained their children, partners, neighbours, or relatives and acquaintances. Capacity building in Uganda was more the result of training in the management of a micro-enterprise rather than in the use of new ICTs. Although the observed changes do not seem to have direct links with ICTs, what is important is not really the ICTs (the technologies) but rather the content they convey. The capacities developed by these women might be used to create appropriate content for the ICT tools. With their acquired skills, ICTs provide women entrepreneur with tools that enable them to achieve higher income and to increase the outlets for their products (Table 13).

In Senegal, the statistics obtained from quantitative investigations (Table 14) (Thioune and Sène 2001) revealed that individual capacity building is mainly linked to the capacity to use computers for word processing and data applications (60.2% of the users). Capacities were also developed in other sectors although their current use is still marginal (e.g., web site design, programming, and computer maintenance). Organizational capacities were also developed as a result of the use of ICTs and the training received (e.g., in management, data processing, and maintenance) both at work and in other areas.

Education and educational activities

In Uganda, only 5.1% of respondents declared that they felt the effect of ICTs in their educational activities. The study did not specify how these conditions improved. In Senegal, 27.8% of respondents said they had acquired better knowledge, and 6.5% declared that they understood their lessons better because they were better presented and the teachers had improved the course contents. ICTs have also contributed to improving and increasing communication flows between the pupils and the teaching staff according to 13% of the respondents. School community members also said that they had easier access to current literature and data (6.5%).

In addition to quantitative data, individual and group interviews were conducted in youth cyber spaces in Senegal. The teaching staff reported better school performance by pupils who frequently go to youth cyber spaces and significantly greater participation in classes. Pupils with access to information other than that provided by the teacher increasingly participate in classes and obtain higher marks. Some of the teaching staff confessed that the fact that some pupils frequently go to youth cyber spaces forces them, in turn, to further improve the content of their classes to keep pace with the pupils. The pupils reported that they seek more information to better prepare for the classes given by their teachers and also to avoid being “ridiculed” for not knowing about different subjects.

Family relations

Both in Uganda and Senegal, the potential to use ICTs for communication seems to be largely exploited (telephone in Senegal and Uganda, and mainly email in Senegal). Users now feel closer to their families and friends who

reside in places scattered around the world (whether within the country or abroad) and also save money by avoiding travel. It is mainly traditional ICTs, such as the telephone that are used most often.

Trade activities and the workplace

For these sectors, time-saving seems to be the most important result achieved. These savings are mentioned by entrepreneurs who maintain business relations with partners scattered both inside and especially outside Africa. These people use the telephone and email most often and said that they now feel closer to their partners and have been able to increase the outlets for their goods and services. The following examples, which are extracted from interviews with entrepreneurs and ICT users, illustrate how ICTs have been used.

Through the TPS units in Senegal, a few entrepreneurs have been able to enter into partnership with foreign traders through the Internet to expand their economic activities. For example, the leader of a Podor-based enterprise known as GIE Sahel Agro-Enterprise established a partnership through the Internet. He received samples of pesticides and introduced them to farmers for testing. He now fills regular orders from the farmers at competitive prices, and reported that this activity had become thriving.

In another example, a baker, who happened to share the same building with a TPS unit in Joal-Fadiouth, frequently visited the centre to ask the managers for information. He finally acquired a computer and has now computerized his business management system, although he only has an intermediate-level education (6 years of study in the Senegalese educational system).

Through the national TPS network, a market for local agricultural products has been organized to link surplus and deficit areas. Onion producers in Podor (Saint-Louis region) were able to use the TPS infrastructure to dispose of their surplus production by selling it to traders based in the Thiès region who had expressed their need through the TPS web site.

Nevertheless, some users are growing impatient to see results from the use of the Internet and are embittered: the leader of an organization based in Thiès (Senegal) declared:

> I subscribed to the unit and always pay money to connect to the Internet to find partners who potentially can help me take out a patent for my inventions. I was made to believe that I could easily find partners on the Internet with whom to do business. Yet, I am more and more tempted not to spend my money anymore by connecting to the Internet knowing that so far I've not had any results.

This raises the crucial problem about the perception that the people and potential users have of the Internet. They begin to believe that this tool can solve all problems. A second equally important problem is how the information that can be found might be relevant to the needs of the users.

Observed effects of ICTs in communities

Although the most obvious changes seem to directly affect individuals at the community level, interviews with some community groups revealed some significant effects (Tables 14 and 15) (Thioune and Sène 2001).

Development of organizational and consultative capacities

Some managers of community telecentres cited the development of organizational and consultative capacities as a direct result of ICT use. Although some organizational skills were developed with the use of ICT and telecentre services, organizational skills needed by rural communities to face the challenges and requirements of the world market are still lacking. They must learn to obtain value for money, organize production in great quantities and quality, and create networks to obtain economies of scale and synergistic effects.

Direct job creation

One of the important effects resulting from the introduction of ICTs in poor or marginalized areas is employment generation. Generally, members of the community hosting the projects hold these jobs. For example, in Senegal, sixteen managers of CRCs (including ten women), twelve managers of TPS units, and four managers of CICs have been recruited in the sites hosting the projects. This has contributed to an increase in community interest in

the new ICTs because people see that ICTs can create jobs in communities where unemployment is widespread. In addition to the jobs generated directly, income is distributed to other groups (e.g., maintenance agents, trainers, SONATEL, and SENELEC). In Senegal, because of the increase in the number of individuals who have acquired skills in the ICT sector, the employment-generation effect in the rural areas will probably be reinforced.

Capacity building in management

There is an apparent reinforcement of management capacities in communities, notably in general accounting, planning, communication, and organization. For example, the Baraka centre in Senegal became, thanks to counselling by the managers, the management hub for community activities. This was also the case in Joal, where community accounting was completely automated. The local councillors noted that the direct effect of this innovation was improved transparency in the management of local affairs. With their training, managers are positioning themselves on the national and even international employment scene (three of the ENDA CRC managers and two former heads of TPS units are in Europe or USA, where they were reportedly earning much more money). However, while this may be viewed as a success at the individual level, it is a deplorable situation for the community because one of the effects expected from ICTs and related projects was the stabilization of rural-urban migration by creating employment in rural areas.

Structuring effects of ICTs for community organizations

In Senegal, the community organizations involved in the projects seem to have been transformed by the use of ICTs. This is most evident in their operations: keying in meeting reports, better organization of documents, and higher visibility for documents because they are better presented. In South Africa, the communities participating in the Msunduzi project were linked through a web site that facilitated communication. Through this site, organizations had greater visibility and were able to secure more easily financial and training support from their partners. However, the effectiveness of this web site as a means of communication and training for the local populace and their environment, as a form of knowledge transfer, was not apparent.

Process of social rehabilitation and inclusion

Some of the people surveyed in the underprivileged districts of Dakar, Senegal feel that their social standing has increased and that their districts and marginalized groups (women, youth, and the illiterate) have been socially rehabilitated. The residents of shantytowns like Colobane, Gouye Mouride, and Baraka, have gained confidence, although the majority are illiterate. In addition, the richer neighbouring districts have been showing a growing interest in these districts. For example, the Baraka district was once considered the refuge of dropouts, but today it welcomes the well-to-do residents of neighbouring districts who come there to navigate on the Web. The residents of these districts now talk with a lot of pride about themselves and their districts, which have now become safer places. This is an important result. Even if most of the population do not use ICT services, the simple fact that the new tools exist restores their confidence and helps them to envisage a future with more hope and to expend more energy to improve their living conditions: “The CRC saved us … we are now socializing … before, we were real aggressors” (a resident of Cité du Rail, Dakar).

Raising awareness of social problems

In Senegal, young people and women who frequently go to youth cyber spaces are reported to have heightened awareness of AIDs and sexually transmitted diseases (STD). GEEP organizes a contest related to sex education every year. In their preparations, the contestants look for information on the Internet. This broadens their knowledge of both ICTs and health issues. This awareness is an important result because it shows how new ICTs can play a role in a very sensitive area. Young people can look for information directly without any intermediary. In that way, they avoid the social and cultural taboos surrounding matters related to sex and to sexually transmitted diseases such as AIDS. Another phenomenon was observed when young people and teachers used the youth cyber spaces. As a result of their involvement, some of the pupils initiated teachers and adults in the use of ICTs. In South Africa, community organizations in the area of the Msunduzi River exhibited better understanding and heightened awareness of environmental and natural resource problems.

Gradual integration of ICTs into community life

ICTs exert some fascination, which is characterized by a strong demand for computer training among young people. Young people do adopt new ICTs more quickly. The fact that there was a response to this demand for training and that ICT equipment was available contributed to the building of technical and institutional capacities in the communities. Young people were trained in data processing and various services (e.g., telephones, office equipment, and information) were provided to entrepreneurs, traders, and individuals.

In contrast to South Africa, where the local economy did not seem to have been affected by the Msunduzi project, ENDA's resource centres had a positive effect on local economic activities in Senegal. In fact, the centres changed the structure of the communities by attracting into their surrounding environment restaurants, small businesses, and arts and crafts vendors. The communities that hosted these centres have developed improved capacities to organize and have gradually reinforced community solidarity. Also in Senegal, secondary effects on development and partnership have been observed. For example, the Baraka district is now receiving more aid from NGOs and other donors and greater attention from the public authorities. Some of the schools that hosted FLE clubs were equipped with computers donated by UNFPA, The 2/3 Canada Club (a Canadian NGO), and Schools Online (an American NGO), as part of an effort to extend research in this area.

The human resources within these districts have become increasingly developed. Participation in community activities (e.g., information and exposure to ICTs, financial and material participation, and equipment management and upkeep) is correlated to project activities in general in Uganda, Senegal, and South Africa.

Emergence of a virtual community

The study identified correspondence between members of the same family and between friends as an important motive for using ICTs. The main benefits mentioned by respondents was *bringing family members and friends closer together* by facilitating direct and almost instantaneous interaction between people located in very distant places. These remote contacts with family members also contribute to maintaining family ties regardless of the distance. Migration is a very important phenomenon in Africa where the working

population, severely affected by structural unemployment, is increasingly tempted to migrate to Europe and North America. The following statement confirms that ICTs can play a role in the economic and social development of the community:

> A tangible and palpable effect is how the community of Joal benefited this year when a young member of the community, who was residing in Europe, found on the Internet a description of the needs and activities of the residents of his rural district. He reacted by sending computer equipment and medicines. It is also interesting that Joal had an Internet connection before one of its European "twin sisters." This fact encouraged this city in the North to create its own web site. It has now clearly overtaken us; just because it had greater means and also because its authorities grasped the stakes of the new economy. (Statement made by Mamadou Sarr, a local official and member of the Joal TPS Management Committee, at the Feedback Workshop on ICTs and Community Development, Senegal, July 2001)

However, if ICTs are not regulated to a certain extent, they can worsen imbalances or inequalities. This is particularly true with regard to individual or group access to resources that are scarce, and in the case of new ICT tools, which can be considered by some to confer "prestige" on its users.

Developing resource control strategies

In the communities that hosted the projects, there were reports of groups of individuals (e.g., management committee or project staff) usurping resources to the exclusion of other individuals or groups This is one reason why in Maka Coulibantang in Senegal, the establishment of a CIC could not restore dialogue and understanding between the rival villages of Maka and Coulibantang, which nonetheless are in charge of this project from an institutional and managerial point of view. The centre was underutilized by residents of Maka, which hosts the CIC and is also the administrative centre for the Maka Coulibantang rural community. The tendency to control resources is also reflected in the management of some youth cyber spaces in which the teaching staff was reportedly inclined to "monopolize" equipment at the expense of the pupils.

Unequal access of women to ICTs

These studies revealed that there was a clear difference between men and women in terms of access to the services and content of ICTs. Within the communities, more men use ICTs than women due to many factors (e.g., level of education and income). But women who do use ICTs look for more information than men, who instead use ICTs mainly as a means of communication. This is indicative of the quality or level of education of the women who have access to ICTs. In Senegal, the average level of education of women ICT users is the secondary education level. In youth cyber spaces in Senegal, among students, gender parity and equality appeared to have been respected both in terms of committee membership and access to services. A synergy was also created between the secondary schools hosting the youth cyberspaces and other institutions that requested use of the services. This resulted in the creation of successful partnerships in some cases.

Inappropriate uses of ICTs

With the diversity and multiplicity of information sources and types, there is a risk that ICTs might be diverted toward inappropriate uses. In fact, some of the respondents in the youth cyber spaces declared that they visited pornographic web sites instead of educational ones, which disturbed the teachers.

Conclusion

It is generally admitted that ICTs have the potential to help poor communities in sub-Saharan Africa to find new ways of accelerating their development process. The implicit hypothesis is that because development is neither a linear nor unitary process, the transforming nature of ICTs can be used to catalyze rapid and sustainable economic and social development. ICT-enabled developed countries have been able to take maximum advantage of the opportunities that these tools can offer. Therefore, poor countries and communities should be able to take advantage of these new tools to improve their capacities to create wealth and reach an improved level of development.

The study demonstrates that ICTs can meet the hopes expected of their use. ICTs are used today to varying degrees in different sectors of economic and social life. They are used to reinforce the regularity of com-

munication and exchange of information between scattered family members; to design registration forms; to improve agricultural production and productivity; to gain access to markets; to enhance school performance; to modernize the management of enterprises in the informal sector; to combat insecurity; and to save time and money.

The impact of ICTs could be increased by ensuring that content is adapted to the conditions of the targeted populations and by finding ways to increase access for rural populations. Furthermore, economic development should be based on sectors that have a comparative advantage. In this perspective, if the conditions of access to ICT are fulfilled, the rural world (made up of about 70% of the working population) could be an economic lever in the context of globalization, in which information is an important and relatively cheap production factor.

The experiment conducted under VCMR in Senegal demonstrated the roles that ICTs can play in a rural environment among users with limited education. In this project, ICTs played a role in local governance and in rural resource management. Community leaders received tools that improved their decision-making and increased transparency in the management of their rural districts. They were also able to combine traditional and new technologies to improve the level of acceptance of new ICTs.

It is difficult at our present state of knowledge and experience in the use of ICTs to affirm with certainty that they have actually contributed to development in a quantitative and sustainable way. Although development is a dynamic process, the results of the research conducted under the Acacia program confirmed that the process of social appropriation of ICTs is well under way in some communities. Moreover, ICTs are being used (certainly still on a limited scale) to solve communication problems, to access relevant information, and to better organize economic and community activities. However, the process of appropriating and using ICTs on a large scale in poor communities is still hindered by many institutional, technical, economic, and socio-cultural constraints.

Table 12: Opinion of respondents on the usefulness of ICT content in Uganda

Usefulness Rating	Number	Percentage
Very useful	17	43.6
Fairly useful	3	7.7
Not useful	2	5.1
Not sure/no opinion	17	43.6
Total	39	100.0

Source: Etta et al. (2001).

Table 13: Changes occurring in communities that were attributed to ICTs (Uganda)

Observed changes	Nature of change	Number	%
1. Capacity building	Use of computer	5	6.4
	Employment opportunity	1	1.3
	Improved communication	2	2.6
	Modernization	2	2.6
	Achieving individual potential	2	2.6
	Not specified	2	2.6
2. Health and sanitation	Health information available	3	3.8
	Not specified	2	2.6
3. Improvement of teaching conditions	Generation of little money	1	1.3
	Capacity building	4	5.1
4. Increased income	Income generation	2	3.6
5. Job creation	Job	13	16.7
	Increased income	1	1.3
	Not specified	1	1.3
6. Improvements in agric. production	Improvement of farming methods and techniques	2	2.6
7. Greater involvement in community matters	Security	1	1.3

Table 13: Continued

Observed changes	Nature of change	Number	%
8. Improvement of conditions of women and youth	Improvement of status	4	5.1
	Acquisition of new skills by the young (e.g., email and facsimile)	1	1.3
9. Better use of information	Improvements in communications	7	9.0
	Easy contact with business traders	1	1.3
10. Improvements in contacts and communication with relatives and friends residing outside the village/city	Increased communication and reduced costs	17	20.5
11. Loss of traditional values		0	0.0
12. Introduction of new values	Modernization	2	2.6
	Internet services	1	1.3
Total		77	100

Source: Etta et al. (2001).

Table 14: Changes observed by individual users in Senegal (2000)

Area of change	Types of change	Number	%
Acquired capacities	Word processing	141	44.2
	Navigation on the Internet	65	20.4
	Expertise in data processing	51	16
	Better work quality	13	4.1
	Easy external contact	10	3.1
	Writing computer programs	9	2.8
	Ability to process data more efficiently	8	2.5
	Faster work pace	7	2.2
	Courses prepared more efficiently	4	1.3
	Better work coordination	3	0.9
	Full vision of opportunities	3	0.9
	Computer maintenance	2	0.6
	Games	2	0.6
	Web site design	1	0.3
Total		319	100
Workplace	Time saving	73	28.1
	Higher work output	42	16.1
	Better work organization	38	18.1
	Better quality of work	37	14.2
	Easier access to information	27	10.4
	Keeping in touch with partners	21	8.1
	Easy document processing	9	3.5
	Archiving	8	3.1
	Save money	7	2.7
Total		262	100

Table 14: Continued

Area of change	Types of change	Number	%
Family relations	Easy contact	55	26.3
	Steadier relations	46	22
	Improvements in relations	27	12.9
	Faster contacts	22	10.5
	Time saving	22	10.5
	Keep in touch with relatives/friends	19	9.1
	Making savings	13	6.2
	Secure email	3	1.4
	More affection	1	0.5
Total		208	100
Trade activities	Easy contact with partners	15	37.5
	Faster work performance	6	15
	Direct contact	5	12.5
	Time saving	5	12.5
	Better outlets	4	10
	Profitability	3	7,5
	Access to more information	2	5
Total		40	100
Teaching activities	Increased knowledge	30	27.8
	Easy documentation	14	13
	Research made easier	13	12
	More exchange with colleagues/pupils	10	9.3
	Easier access to information	9	8.3
	Work made easier	9	8.3
	Data update	7	6.5
	Better understanding of courses	7	6.5

Table 14: Continued

Area of changes	Types of changes	Number	%
	Time saving	3	2.8
	Archiving	2	1.9
	Improved course contents	2	1.9
	Possibility of reading newspapers	1	0.9
	Pupils get higher marks	1	0.9
Total		108	100
Health sector	Better awareness	6	54.5
	Better knowledge	3	27.3
	Better working conditions	2	18.2
Total		11	100
Agricultural sector	Higher productivity	10	33.3
	Contact made easier	6	20
	Diversified partnership	4	13.3
	Data search	3	10
	Better knowledge in this area	3	10
	Work faster	3	10
	Easier access to financing	1	3.3
Total		30	100

Source: Thioune and Sène (2001).

Table 15: Changes observed in organizations in Senegal

Observed changes	Staff	Percentage
Easier contact with partners	28	16.1
Faster work performance	21	12.1
Better organization	20	11.5
Ability to manipulate computers	16	9.2
Higher performance	15	8.6
Increased membership	13	7.5
Improved documents	10	5.7
Exchange between partners	10	5.7
Better knowledge	9	5.2
Archiving	7	4.0
Improved income	5	2.9
Improved activities	5	2.9
More motivation	5	2.9
Capacity building	4	2.3
More reliable management	3	1.7
Higher credibility for organization	2	1.1
Job creation	1	0.6
Total	174	100.0

Source: Thioune and Sène (2001).