

Distance Learning for Change in Africa

A Case Study of Senegal and Kenya  
Policy and Research Prospects for the International Development Research  
Centre (IDRC)

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## List of Abbreviations

ACACIA Communities and Information Society in Africa

ACCT Agence de coopération culturelle et technique

ADAE Association for Development of African Education

AIDS Acquired Immunity Deficiency Syndrome

AGN Africa Growth Network

ANC African National Congress

AVU Africa Virtual University

CIDA Canadian International Development Agency

CLAD Centre de linguistique appliqué de Dakar

COL The Commonwealth of Learning

DANADA Danish International Development Agency

DEASA Distance Education Association of Southern Africa

DEATA Distance Education Association of Tanzania

DLC Distance Learning Centre

ECB École communautaire de base

EFA Education for All

ENS École normale supérieure

FAWE Forum for African Women Educationalists

GDP Gross Domestic Product

ICT Information and Communication Technology

IDRC International Development Research Centre

KCODE Kenyan Council of Distance Education

KIE Kenya Institute for Education

KISE Kenya Institute for Special Education

KMTC Kenya Medical Training College

NGO Non-Government Organization

UNESCO United Nations Educational Scientific and Cultural Organization

USAID United States Agency for International Development

WADEA West African Distance Education Association

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## EXECUTIVE SUMMARY

This study addresses past, present and possible roles of alternative strategies for distance learning in Africa. It investigates the accessibility of different resources for interactive learning at a distance for different population groups. The study has both a theoretical and an empirical component. Following a critical review of the literature on the subject, field investigations were conducted over a two-week period: one in a French West African country and one in an English East African country. Senegal was visited from the 4th to the 11th and Kenya from the 13th to the 20th of January 1997.

It soon became obvious to the researchers that it was time all developing countries in Africa began systematic experiments using Information and Communication Technologies (ICT) in the area of distance learning. To ensure the success of such a venture, the pilot experiments must be set in an enhancing environments, their parameters must be well defined, and the initial project well monitored.

The researchers believe that with the establishment of two-way communications between communities, electronic technology will render distance learning much more efficient and facilitate responses to global changes as Africa enters the 21st century. They also believe that once the initial investment is made, the cost of distance learning will rapidly stabilize. Taking into account past experience, the researchers made recommendations concerning the administration and management of distance learning, and the establishment or the use of Distance Learning Centres (DLC). They also looked at the impact of distance learning on gender equity issues and other possible benefits of ICT to education in Africa, including international co-operation in distance education projects and electronic publication to complement teaching material at all levels. Finally, they looked at the role of ICT as it relates to the learning of indigenous languages.

The authors of this report believe that all modernized distance learning initiatives need to be coupled with strong research components to ensure that the initial endeavours in selected sites in Africa can be generalized

throughout the continent.

## Chapter 1

### 1.0 Distance Learning for Change in Africa

#### 1.1 Setting of study

The goal of this study is to gather information on distance learning in Africa. It consists of a survey of the possibilities offered by alternative teaching strategies, of past African experience in distance learning and of needs. It is neither a comprehensive study on theory and practice of distance learning, as has been done by Holmberg (1995), nor a simple collection of country profiles compiled through a survey of distance education practices and programs in Africa, as suggested by Magnus (1991). The study does not intend to replicate work already done by other agencies and researchers interested in the development of distance learning in Africa. A vast body of literature on distance learning is available for consultation as general references. Most donors have published extensively in the field (IALC, COL, IDRC, CIDA, UNESCO, etc.). For instance, in the United States, the University of Syracuse publishes annually *The New Horizon Series in Adult Education* (1987-1996); in Germany, the German Adult Education Association has produced a comprehensive basic textbook entitled *Adult Education and Development* (1994). In Africa itself, *The Proceedings of the University-Based Adult Education Conference in Stellenbosh South Africa* (1993) describe relatively well the actual state of distance education on this continent.

The present study is meant to be more contextual; it is based on collected information that has been used in guiding research policies and development, in general. It attempts to look critically at past experience and research to identify areas related to distance learning to be explored by African researchers.

It aims at identifying areas of research and development where IDRC can either play significant and efficient roles in the context of bilateral and multilateral projects, or where it can promote actively the involvement of other parties. As stated in the report: *Learning: The Treasure Within*, (Delors & al., 1995), the authors of this report do not see education or distance learning "as a miracle cure or a magic formula opening the door to the world in which all ideals will be attained, but as one of the principal means available to foster a deeper and more harmonious form of human development."

In this perspective, the study attempts to build on knowledge and the research in the area. As stated in *Priority: Africa-Program of Action* (UNESCO, 1990) found in the proceedings of a Seminar on Distance Education in Arusha, Tanzania, the development of distance education in Africa depends on three factors: information and research, the training of specialists, and the production or acquisition of educational material.

This report focuses on the first of these requirements; furthermore, it suggests that information and research be viewed as a means of ensuring the success of the two others.

Since the link between the level of literacy and national economic development is not as direct as suggested in the early studies of development (Daniel, 1990), the reader must be reminded of the complexity of factors at work in developing nations. Consequently, every effort is made to help those whose profession is national development gain a fuller understanding of the role of distance learning in the process. The study discusses past and ongoing projects, examines the needs of the principal stakeholders in the selected countries and capitalizes on the potential of new technology. It is hoped that the study will contribute modestly to the world-wide reflection on education and complementary means of learning, as initiated by the World Conference on Education for All, held in Jomtien, (1990) and the Report to the UNESCO by the International Commission on Education for the Twenty-first Century (Delors et al., 1995). To this effect, two citations of these important contemporary documents are reprinted in this chapter: a) the four pillars of education taken from the Delors Report (1995) are reprinted in Table 1.1 and b) the views of the nine high-population countries on the characteristics of distance learning (Visser, 1994) are presented in Table 1.2.

The diversity of experiments being conducted in distance learning in developing countries is such that they must all be assessed in light of their capacity to promote the achievement of the above four pillars of modern contemporary education and their support of the principles of distance learning, as stated by the Manila Conference.

The primary objective of the IDRC initiative Community and Information Society in Africa (ACACIA) (1996) are:

a) to demonstrate how ICT can help communities to solve development problems in ways that build upon local goals, culture strengths and process to promote an equitable and sustainable development,

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Table 1.1 The four pillars of education as identified by the UNESCO Commission Learning: The Treasure Within.

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Learning to know, by combining a sufficiently broad general knowledge with the opportunity to work in depth on a small number of subjects. This also means learning to learn, so as to benefit from the opportunities education provides throughout life.

Learning to do, in order to acquire not only an occupational skill but also, more broadly, the competence to deal with many situations and work in teams. It also means learning to do in the context of young peoples' various social and work experiences which may be informal as a result of the local national context, or formal involving courses, alternating study and work.

Learning to live together, by developing an understanding of other people and an appreciation of interdependence -carrying out joint projects and learning to manage conflicts - in a spirit of respect of the values of

pluralism, mutual understanding and peace.

Learning to be, so as better to develop one's personality and to be able to act with ever greater autonomy, judgment and personal responsibility. In that connection education must not disregard any aspect of a person's potential: memory, reasoning, aesthetic sense, physical capacity and communication skills.

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Table 1.2 Principles of Distance Learning Formulated by the Nine High- Population Countries at the Manila Conference, April 1994.

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1- Two-way communication is essential for effective distance learning. This, as well as ways for students to communicate with each other, can break the sense of isolation of the distance learner and contribute to active participation of the student in the learning process.

2- Besides print, many developing countries have found radio to also be a powerful and cost-effective medium.

3- Radio is sometimes combined with face-to-face tutoring. Some countries use TV as well for instructional purposes.

4- Use of a media mix is normally more effective than distance education via a single medium.

5- Distance education, in order to be effective, requires a sound organizational infrastructure. Benefits can be derived from embedding distance education in the holistic framework of the overall educational system and from linking it institutionally to other educational institutions.

6- Face-to-face tutoring, and the inclusion in the organizational infrastructure of the distance education system of learning resource centers, can be an important contribution to delivering distance education more effectively.

7- Good instructional design, involving sound planning and adequate formative evaluation based on learner feedback, is key to quality distance education.

8- Economies of scale often times position distance education as a more economical solution to educational problems than traditional ways of delivering education.

9- Community participation, strengthening of local communication networks and the maintenance of sustainable support systems are key elements in successful approaches that put essential knowledge and life skills at the

disposal of all families, using today's increased communication capacity.

10- Planning for sustainability, taking into account the whole picture of educational concerns, is a key requirement for successful distance education.

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b) to build a bank of knowledge identifying the policies, technologies, approaches and methodologies that are most instrumental in promoting affordable and effective uses of ICT by marginalized communities. This study will help the IDRC to work in the same direction as major international agencies in distance learning and to undertake new initiatives, to map out new areas of concerns, to further refine the quest for broadened access and equity, as well as for qualitative and efficient delivery of learning materials.

In, this introductory chapter, the authors will first define the concept of distance learning, as it will be used throughout the report, second state the questions to be investigated, third present a plan of the report and finally state its limits.

## 1.2 What is distance learning?

To define distance learning we consulted the literature and asked practitioners in Africa for an operational definition of the concept. Throughout this study, the expression distance learning is preferred to that of distance education to indicate that the impact of any educational initiative is directly related to the learning that occurs, not to the amount of instruction provided. With this qualifying statement, the expression: distance education, adult education, distance learning, on-line learning, alternate learning, network learning, etc., all usually refer to instruction and learning that occur outside the regular classroom context. Distance learning is not linked to a particular level of education, to specific technologies, or to a standard organizational setup. It is often described as a multimediated mode of learning. The authors of this report do not wish to oppose learning and teaching, as is sometimes done when discussing the learning/teaching process; they simply use distance learning to stress on the importance of the result of the process.

The following definition, taken from a UNESCO survey questionnaire, seems to summarize contemporary thinking on the subject:

L'expression Éducation des adultes désigne l'ensemble des processus organisés d'éducation, quels qu'en soient le contenu, le niveau et la méthode, qu'ils soient formels ou non formels, qu'ils prolongent ou remplacent l'éducation initiale dispensée dans les établissements scolaire ou universitaires, et sous forme d'apprentissage professionnel, grâce auxquels les personnes considérées comme adultes, par la société dont elles font partie, développent leurs aptitudes, enrichissent leurs connaissances, améliorent leurs qualifications techniques ou professionnelles ou leur donnent une nouvelle orientation, et font évoluer leurs attitudes ou leurs comportements dans la double perspective d'un épanouissement intégral de l'homme et d'une participation à un développement socio-économique et



culturel équilibré et indépendant.

In a paper prepared for the Distance Education of the Nine High-Population Countries in Manila (1994), Jan Visser states:

Distance education can reach people who would otherwise be deprived of opportunities to learn. It does so by making use of media to communicate between teacher and learner. Distance education has been defined by Perraton (1986) as an educational process in which a significant proportion of the teaching is conducted by someone removed in space and time from the learner. The link between that someone and the learner is provided by different means of communication and instructional support. As a mediated form of instruction, distance education can reach people in circumstances in which they would otherwise be deprived of opportunities to learn. Such circumstances can be determined by physical distance, i.e. geographical remoteness, but also by such factors as cultural context, societal expectations, organizational or infrastructural conditions, or indeed by personal constraints that block access to education. In the early stages of the development of distance education most, if not all, of the instructional message was delivered to the learner using the print medium, instructional text being designed in such a way that it would guide the student through the various steps of an autonomous learning process.

The IDRC program Learning for Change (1996) refers to learning as "a dynamic process in which the learner develops a thirst and a purpose for acquiring the knowledge and utilizing it, . . . " During our visit to Africa, we have asked many persons to define operationally the concept of distance learning. There seems to be general agreement that the concept is very broad and that, particularly in the context of financial assistance to developing countries, some restrictions can be placed on its extension. Our discussions lead us to ask four basic questions :

a) Who benefits from distance learning?

Distance learning refers to a process that permits intellectual, professional, social and personal growth (the four know-how of the Delors Report, 1995). It is a means of learning whose sole distinction is that it takes place outside the formal elementary and secondary educational setting. An adult who is learning to read, or learning a vocational skill is as involved in distance learning as one who is learning to dance or to play bridge. In this sense, distance learning refers to lifelong learning. Thus the concept of distance learning must be qualified in order to determine the responsibilities of governments and donor agencies concerned with development, democracy and equity. In this age, there are still important groups that do not benefit from distance learning, including scattered pastoral communities, women, migrants and refugees. In order to be able to provide for the needs of these groups, we venture the concept of distance functional learning to delimit governmental responsibility; i.e., becoming literate, learning a life skill, developing vocational or technical abilities, learning democratic behavior, co-operation and social and cultural habits and skills. Such a restriction would exclude from the list of activities for which government and development agencies are responsible, namely recreation, leisure, hobbies, retraining for personal growth.

b) What is being taught through distance learning in developing countries?

Our discussions lead us to conclude that, even if the concept of distance learning can be broadly defined, the courses and programs offered generally fit within the restrictions mentioned above. The following list is not extensive but should be deemed representative of distance learning activities taking place presently in developing African countries. They are: literacy learning for adults and adolescents, post-literacy learning, basic education classes, general education, trade and technical training (initial training), trade and technical training (in service), management and co-operative education, agriculture education, science and technology education, family planning and related topics, computer initiation and learning, cultural and inter-cultural education, religious education, political and union education, consumer education, health and nutrition, ethics and civic education, environmental protection, community organization, prevention of STD (Aids) and drug addiction, alternative education for school dropouts, personal finance, democracy and citizenship and world peace.

There are still areas of knowledge essential to development that are not yet covered by distance learning in many areas of Africa, for instance management of small businesses, HIV-Aids education, and co-operative education.

3- How is distance learning achieved?

Distance learning has grown out of traditional correspondence education and educational broadcasting in which communication was either a one way or a two way process in the form of letters to and from teachers. Learning resulted from the interaction between the reader and the print study material and from written communication with the teacher. Mental interactions and communication through the delivery modes between the learner and the teacher were delayed, and the turn-a-round time was long. In print based distance learning, the student sent and received back assignments by mail. In the case of broadcast, the learner had to listen to the lesson on the radio, and if the lesson or part of the lesson were not clear, he would write for further clarification. Thus spatial gaps, time lapse and learner isolation from fellow students not only deprived one from motivation arising from immediate interactive participation but also called for a high degree of discipline, persistence and diligence. Despite relatively belated interaction experienced distance learner has been enabled to develop a thirst and a purpose for acquiring knowledge and skills and utilizing them. Experienced drawbacks could therefore be overcome through the adoption of appropriate information and communication technology. As technology evolves, the capacity of distance learning pedagogy is enhanced and consequently may facilitate access to knowledge.

d) Why distance learning?

Distance learning has been promoted not only essentially in response to growing educational needs which were not easily met in traditional forms of education, but also on account of a number of other factors. On one hand, this form of learning has proved to be accessible to scattered and deprived populations, and on the other hand, it has facilitated training and

re-training of people on their jobs. In so doing, it has accelerated human resource development, thereby enhancing the output of the conventional educational system. Through flexible age and pre-enrollment requirements, distance learning brings together people of diverse expert knowledge and experience, which is a major contribution to learning. Through information and communication technology, distance learning becomes a dynamic form of learning that can adapt to changes in informatics, becoming cost effective. It is finally known to have facilitated national educational campaigns through media or account of its multiplier effect. It has enabled the students to engage in learning activities at their own pace, time and in one's choice of course of study.

Such a view of distance learning leads to the issue of the necessity of the present educational structures and the related vocabulary. When does formal education end? When does adult education begin? It is in such a context that we tentatively formulated the following definition of distance learning.

#### Definition of distance learning

Distance learning, as discussed in this report, reflects a dynamic form and process of acquisition of knowledge, skills and attitudes, rendering one adaptable to change, and facilitating his/her management of the future. It is hinged on a wide permutations of human and material resources corresponding to the broad spectrum of information and communication technology (ICT). Although the higher ICTs may seem to be adapted and more cost-efficient, they should be seen as means of strengthening learning; the more viable technologies are not necessarily the most advanced. The aim of distance learning is to reach individual learners; to provide the capacity to learn and to provide access different channels to do so. From an individual perspective, the extension of the concept of distance learning may well have no limits; as a state responsibility, and in the light of preoccupations for equity and democracy, some activities may not be the responsibility of government or public agencies.

#### 1.3 Research questions

Three series of general research questions are asked and used to define the terms of reference of the project:

1- What are the possibilities offered by alternate teaching strategies? What can be done efficiently, and how can it be done? What do practitioners say? What does technology suggest? These questions are answered in chapter 3. To provide an answer to these questions we have surveyed projects around the world, though we could have limited ourselves solely to African experiences in distance learning.

2- What were past African experiences in distance learning and how successful were they? Were they evaluated? What was their impact? Our consultations in Senegal and Kenya allow us to answer these questions in chapter 4.

3- What are the present needs in distance learning? The populations in need? The contents to be taught? How do they relate to economic and social

needs of the countries? These questions are directly related to different aspects of distance learning and their answers are summarized in chapter 5.

#### 1.4 Limiting factors

Two limiting factors have to be mentioned: a) considering the magnitude of the work done in distance learning by researchers all over the world, the review of literature is selective and taken mostly from Canadian data banks dealing with African experiences in the field. Details of the literature review are given in the following chapter. b) Considering the limited resources and the time, two countries, Senegal and Kenya, have been selected for investigation and need analysis. In those countries the researchers had only a few days to collect data, not all agencies were met, learners could not be interviewed or the study material evaluated. Thus, any extrapolation to other countries can only be the result of consultations with experienced practitioners and of the literature review.

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## Chapter 2

### 2.0 Research Methodology

This chapter explains the research methodology used for this project. As in most applied research projects, the methodology used is mixed. An important component of the project is a review of related research and development projects. This is followed by the use of interviews with focus groups to gather specific information about distance learning in Senegal and in Kenya. In Senegal, complementary information was gathered by attending a national seminar on ICT sponsored by the IDRC. The researchers used content analysis to find points of convergence, to determine priorities and to identify areas of research and development of interest to African countries and donor agencies, where IDRC can either assist effectively or promote initiatives in international forums.

#### 2.1 Review of literature

The literature on distance learning is extensive. Most projects in developing countries, sponsored either by donors countries or by international agencies, had a research component or were subjected to a final evaluation. All data banks of national and international aid and research agencies have extensive records of distance education ventures. Since this is a IDRC-sponsored project, the first data libraries consulted about distance learning in Africa were those of the IDRC and CIDA. The World Bank and UNESCO data banks were also searched using Internet. Similarly various Internet search engines and general data banks such as ERIC were used to traces of other distance learning projects sponsored by USAID, British Aid, Germany, DANIDA, the Arab Development Bank and France (ACCT). In the countries of Senegal and Kenya all the agencies visited and all persons interviewed were asked to share their knowledge of past distance learning projects and to criticize them. Written documentation on past experience was consulted and occasionally photocopied. Related economic and social development projects were be examined and their implications, needs and assumptions about distance education noted.

During initial reading all findings were classified under one or more headings of interest and a tentative list of ten components of distance learning were identified as follows: responsible institution, administrative structure and organization, financial and economic aspects, programs and contents, groups served, methods and teaching conditions, professional personnel, equipment and support, co-operation multi and bilateral projects, research and project evaluation. This initial classification made it possible to analyze each topic with reference to relevant experiences and data gathered in Senegal and Kenya.

#### 2.2 Construction and design of an instrument

For the group interviews, the authors prepared a data gathering schedule consisting of open ended questions to be answered in small groups by

experts and responsible administrators of distance learning in key institutions in Senegal and Kenya was prepared. The objective of the schedule was to discuss perceptions and prospects for distance learning in a dynamic situation. The basic questions and prompts to stimulate further discussions during group interviews are presented in appendix B. As can be seen, the interview schedule attempted to identify trends, future needs, priorities, target populations and concerns about equity and equal opportunity. It finally asked practitioner to formulate their own definition of distance learning. This helped in formulating the definition presented in Chapter 1.

In each country the following focus groups were met: a team of high-ranking public servants from the ministries of education or of basic education, a field production and conception team, a group concerned with basic education, members of NGOs working in distance education and a health education team.

Most meetings were magnetically taped, their content transcribed, summarized and subjected to content analysis.<sup>1</sup>

### 2.3 Analysis of data

The project used qualitative research methodologies: written text were analyzed and views and opinions of groups of important stakeholders in the area of distance education were listened to.

The review of literature on distance learning helped in writing the section of the report on the possibilities offered by alternative learning strategies. It was also used to validate observations made in similar projects in Senegal and in Kenya, and it provided suggestions in formulating the final recommendations.

The initial analysis of the data provided by the interviews was done using content analysis methodology. Data were transcribed, summarized and classified into categories. past and on-going experiments in both countries were summarized as well as the perceptions and criticisms of the important stakeholders who were interviewed. Similarly, opinions and expectations expressed by experts and focus group participants were synthesized. As the interviews progressed critical questions and opinions were re-addressed further with the respondents.

In Senegal and in Kenya the original data and the tentative conclusions and recommendations were presented to selected national experts concerned with distance learning for their validation and initial reactions. This gave the researchers the kind of reaction that resembles the one usually obtained using triangulation or the Delphi technique. These reactions and interpretations were helpful in preparing the final version of the document.

The information thus gathered was then reorganized in order to answer the three series of research questions enunciated in Chapter 1.

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## Chapter 3

### 3.0 Possibilities of Alternative Learning

In order to appreciate the possibilities of distance learning in the context of development, some classification of the resources used and a list of the populations served by such programs must be related to the present knowledge of learning in a distance learning context. Thus, the present chapter first establishes a simple two-dimensional classification of material and human resources involved in distance learning, and it gives examples of typical projects using different levels of resources.

Secondly, using the experience of developing countries, it identifies major groups of beneficiaries and finally, it examines at the demands and the possibilities offered by ICTs as they are applied to distance learning in contemporary developing countries.

#### 3.1 Resources used in distance learning

In developing countries, a very wide variety of resources have been used to provide an appropriate learning milieu. They range from simple interaction between a learner and a facilitator or the use of traditional printed material and radio broadcast, to the use of computer information technology. In this first section, the authors attempt a classification of the human and material resources used, and to identify critical levels of allocation in certain cases.

##### 3.1.1 Examples of different levels of resources

The following is a sample of typical distance learning projects utilizing different levels of human and material resources.

1- A simple information service to educators, program operators, as well as to institutions working with them was provided through the social policies and non-formal education in Uruguay (IDRC Project: 92-8769).

2- The Early Child-Mother Interaction in Venezuela (IDRC Project: 91-0137) consisted of home visits and interviews with the mothers, by trained community promoters who used a guide, prepared as part of the project, to train mothers on early intervention practices.

3- The New Generation: A New Teaching Method for the Lebanese Youth (IDRC Project: 90-0313) developed teaching methods, textbooks, and other didactic material to help decision-makers and educators responsible for youth organizations to better target their action and policies involving youth of different communities and social strata.

4- The Alternatives in Non-Formal Education for Pre-school Children in Columbia project (IDRC Project: 89-0294) provided the ICBF with tested pre-school educational low-cost learning material to be used throughout the country in "Hogares Populares" (Popular Homes).

5- Culture and Education Among Quechuan Populations in Ecuador (IDRC Project: 90-0094) relied on disseminating workshops that brought together more than 100 Quechuan women from across the country.

6- The School-Community System for Literacy in Uganda (IDRC Project: 87-0265) aimed at getting students, teachers and adult learners to compose, write, read, discuss and produce indigenous literature for publication. To make this available to other students, teachers and the community a small learning network was organized.

7- Health Education Through Audio-Visual Methods in Sri Lanka (IDRC Project: 91-0147) produced seven video films of approximately 15 to 20 minutes duration. They are shown to patients and their families who go for treatment at state hospitals. The films included topics such as infant care, nutrition, diarrhea control, early diagnosis of common diseases, family planning, general hygiene, and behavioral problems among children.

8- Elsidig (1994) describes correspondence studies at the University of Zambia. He examines their management, teaching methods, course organization, problems in maintaining the courses, and provides possible solutions.

9- The Ulwazi project in South Africa was designed to provide adult functional literacy through radio. The Ulwazi team of seven producers, editors, trainers, administrators and director could almost be seen as a microcosm of the newly liberated South African society. These new radio producers brought with them an extraordinary composite experience. Between them, they set up women's support groups, led illegal trade unions, ran adult literacy campaigns read, or reported, the harrowing news on South African television and radio, ran national AIDS campaigns, or have aired, for 20 years, across borders messages for the "armed struggle" officers of the ANC.

10- Radio has participated in many distance learning projects (Moja, 1992; Norman, Douglas, 1990). This medium has been used in basic literacy classes as well as for the training of technicians and professionals.

11- Interactive radio instruction (Moulton, 1994) has gained attention as a low-cost means of improving the academic achievement of primary school students. The Radio Mathematics Project in Nicaragua and subsequent programs developed by the Learning Technologies for Basic Education (LearnTech) project illustrate the evolution of such programs as technology and society have changed. The term "interactivity," was used to describe the simulated conversation of radio broadcasts in which students responded in chorus to questions asked by the radio teacher. Olsson (1994) discusses a very similar project that has taken place in Papua New Guinea.

12- A paper presented by Hawkridge (1990) examined examples of Third World countries using new media for national development through education. He particularly looked at the increase in courses offered using television in universities in China. Chinese universities offer courses through broadcast educational television as well as videotaped recordings of television programs.



13- Africa Growth Network (AGN) is a commercial concern facilitating access to affordable and relevant knowledge on behalf of subscribers /sponsors who want to contribute to the economic power of Africa. Its primary focus is to bring relevant and affordable learning opportunities to prospective learners. AGN brings classrooms, libraries, interaction, debate, networking, fun, as well as a climate of learning and established residential teaching organizations to help the learner. It eliminates distance and geographic restrictions through user-friendly technology. It is a virtual campus enabling debate, study groups, discourse, access to additional material and the development of new friendships.

14- Malan (1994) discusses means to overcome the drawbacks of lack of electricity and educational aids at learners' homes and recommends the uses of Community Learning Centers. They allow the utilization of three possible approaches: the television model for self-study, the study center model and the dual mode model. Relevant and appropriate local support is provided through community learning centers.

15- The three 1993 issues of the newsletter "Development Communication Report" focused on the use of communication via integrated technologies in developing countries to educate the people on various social issues and on development communication itself (Bosch, 1993).

16- Anzalone (1995) drafted for the Learning Technologies for Basic Education Project, a document gathering case studies which provide an overview of multichannel learning, or reinforce learning through the use of several instructional paths and various media including print, broadcast, and on-line.

17- In the context of the Education for All (EFA) movement, A Learning System for Education for All in the Philippines (IDRC Project: 90-0262) attempts to enable the Regional Center for Educational Innovation and Technology, INNOTECH to develop and test an innovative learning system to reduce the impact of school drop-outs among underprivileged groups in the Philippines.

18- In the project Alternative Education for High School Graduates - Phase II, in the Dominican Republic (IDRC Project: 89-0060), researchers have developed experimental curriculum and educational material. These initiatives illustrate the diversity of distance learning medium and technologies that have been used in recent years. For the purpose of this report, they will be used to establish a classification of human and material resources used in distance learning. Before proceeding to that task, a few comments are appropriate: first, in view of the large number of IDRC projects reported, there may be room for an in-depth analysis of these experiences in distance learning. In other words, the Canadian sponsored experiences could very well be the object of a critical analysis. Such is not the purpose of this iteration; it was simply meant to lead into the following classification of resources. Furthermore, IDRC is currently funding other projects, namely Distance Education in East and South Africa (DESESA) and Echo News. These projects will be mentioned further on.

### 3.1.2 Proposed classification of resources

The above list of illustrations of resources used in distance learning is far from extensive. In final analysis distance learning refers to learning that takes place outside the traditional classroom context. The concept has gained considerable expansion with the development of modern educational technology and the accessibility of computer as a teaching tool.

Distance learning has many aspects and it presents itself in different ways. In its simplest form, it can be described as an interaction between a learner and his/her environment leading to new knowledge while, at the other end of the spectrum, it can be described as a highly technological process. Some authors refer to multi-groups, multi-channel and multi-mediated learning (Visser, 1994).

The identification of learner interactions with either material or human resources is made possible through a further analysis of the learning process. In the classroom, pupils interact either with teaching material, the teacher or their classmates. The range of possible material and human resources is even larger in distance learning than in traditional classroom learning.

Material resources can include objects in the learner's environment, books, printed material, instruction by correspondence, audio visual or animated material, library or experimental material, one way radio or television communication, telephone instruction, two way radio or television communication, computer mediated material, Internet or network instruction that can be textual, visual, audio or even animated.

Similarly, human interaction can take place with a teacher or a facilitator, another learner, a group of learners, multiple groups of learners and multiple facilitators.

Although it is difficult to classify these resources rigorously along a continuum, from the simplest to the most complex, there seems to be a hierarchy of material and human interactions that promote learning. All of these interactions are possible outside the traditional classroom and they contribute in some way to learning. Learning to know, learning to do, learning to live together, learning to be, all aspects of learning are essential to development.

Past experience has also shown that late teenagers and especially adult students learn more efficiently through two-way multiple interactions with human resources, therefore the recommendations of multi-mediated, multi-group interactions in the learning process. In the context of developing countries, one critical factor in making higher level modes of interactions accessible is the availability of an electronic two-way connection in the form of a telephone (line or cellular) or a radio/TV. Only then can distance learning groups with common interests be brought together and highly competent facilitators be called upon.

In other words, although it is difficult to place the material resources in a hierarchical order on a continuum there is a critical point on such a continuum beyond which it is possible to engage in more effective pedagogical approaches, i.e.: the availability of two-way connectivity. Thus, it is possible to visualize, on a two-dimension space, human and

material resources, that promote distance learning. (Figure 3.3). It means that once communities are linked with two-way connections, a much richer kind of interaction is possible, and the quality of teaching material and presentations can be improved.

Figure 3.1 Dimensions of material and human resources involved in distance education

All of the above-described projects can be placed or occupy more or less space in the above two dimensional areas. However, in developing countries, the great majority of current projects are located in the lower left-hand corner of the graph. There are very few publicly sponsored distance learning projects in the upper right hand corner. It is in that corner that one finds network learning, a form of learning that uses text, image, sound, and animation. It provides the opportunity to interact with teachers and peers and to consult resource persons around the world.

Finally, it is respectful of the learner's timetables and learning pace. Therefore promoting the mainstreaming of distance education technology may be interpreted as promoting the use of more sophisticated human and material resources emanating from the era of information and communication technology.

### 3.2 The beneficiaries of distance learning

For the purpose of this discussion, four groups of beneficiaries illustrate the diversity of the clientele: teachers, nurses and para-medical personnel, marginalized or excluded groups, and regular school students.

1- Teachers have traditionally been trained and coached through the use of distance education. The following examples of projects were identified.

a) Teacher Training in Pakistan (IDRC Project: 93-0814). Aga Khan University (AKU) in Pakistan, established an Institute for Educational Development (IED) to provide the training to teachers and to promote of consistency with the socio-cultural context. A very similar project has taken place in Tanzania (Chale, 1983)

b) Preservice teacher training in South Africa is discussed in an article published in *Action in Teacher Education* by McDonald (1995). This article highlights the role of distance teaching, and the accompanying self-study workbook; it also discusses the extent to which student teachers can be guided to bridge the gap between theory and practice in field experience through distance learning.

2- Nurses and para-medical personnel have been trained and supervised through distance learning; the following are a few examples in developing countries:

a) Mmtli and Mossieman (1995) present a model of distance education to upgrade nurses in Botswana, designed to bring together the face-to-face mode with the distance learning mode.

b) Similarly, the Wellcome Tropical Institute has assisted countries to

establish viable systems of continuing medical education, particularly for doctors practicing in rural areas. As part of this strategy, the Institute has developed material for use in distance learning. An attempt was made to apply the same approach in Ghana, Kenya, and Pakistan. (Engel, Browne, Nyarango, Akor, & al. ,1992)

3 Marginalized or excluded groups were the object of many distance education projects:

The gender-sensitive non formal adult education policy was developed by working with black women in South Africa (IDRC Project: 90-0350). Also, women issues related to Gender in Distance Education were the subject of a special edition of the Journal Open Praxis. In this publication, the following themes were discussed: Introduction to Gender in Distance Education (Spronk, 1994); From the Local to the Global (Taylor, Kirkup, 1994); Addressing Some Gender Issues in Distance Education at the University of the South Pacific (Tuimaleili'fano, 1994); Women and Science at a Distance (Va'a, 1994); Women as Distance Learners in Israel (Enoch, 1994); Women Friendly Programming in Tanzania (Ligate, 1994).

4- Regular school students can benefit from complementary and enriched programs offered through distance learning:

a) The Computers in Kenya's Secondary Schools Program was developed to promote innovation in secondary schools (IDRC Project: 89-0328). This program was not offered as a form of distance learning but is mentioned because of its technology component. Similar projects exists in Dakar. They help illustrate the wide spread demand for computer technology.

b) Some distance education programs are designed to train workers in the workplace. It is the case of the Workers' Education in Uganda Program (1994) (IDRC Project: 89-0076). which addresses themes like the impact on the work force of Uganda's political economy, labor laws, and the changing conditions of work.

d) Others are more general like the Integrated, Community-Based, Rural Education project in Mexico (IDRC Project: 88-0166). The project was implemented with the participation of children, teachers, parents, school authorities, and community agents.

In summary, we retain a non mutually excluding and probably a non extensive list of beneficiaries of distance learning in developing countries:

Urban populations

Rural populations

Women groups

Senior citizens

Working people

Excluded groups

Nomads or isolated people

Ethnic and cultural minorities

Young school dropouts

Young unemployed

Armed forces personnel

Prisoners

Refugees and migrant populations

### 3.3 Prospects and evaluations

This section reviews the demand for distance learning and the implication, from an efficiency and a cost point of view, of bringing in information and communication technologies to enhance learning.

#### 3.3.1 Demand for ICT infrastructure

Informatics and computer technology are present in Africa: we have communicated by e-mail with Africans without difficulties and there are Internet sites for most African countries. All international agencies, major NGOs and many government departments are now using computers for word processing, data base management, accounting and telecommunications. Every major city visited has a number of computer stores and Internet providers. Some initiatives are already underway to provide distance learning through ICT in Africa, namely the project of Africa Virtual University and the World Bank which, in conjunction with Mauritius is presently setting up a study group to take initiative in this area.

This is not to say that the implementation of information technologies is going to be without difficulties. Our interlocutors in Africa insisted on the necessity of training managers, instructors and professors and of insuring the permanence of the technical support. However, experience in developed countries, where as many as 25% of families have a computer at home, shows that, if well planned, initiatives in third world countries could also be successful and could generate rapidly other public and private initiatives.

Thus, taking into account past African experiences in distance learning, we propose postulate 1.

#### Postulate 1

Africa is now ready for well defined endeavors in distance learning using electronic networking and computer technology.

In the long term, this experience has the potential of extending distance learning to remote and underprivileged populations. It will also provide the opportunity of studying at one's own pace and time and in one's own subject of interest. This is the case of women, who need flexibility

because they have to assume family responsibilities in addition to holding a full time job.

Adoption of ICT presumes an enabling environment that is contingent upon broad national policies and national statutory provisions involving agencies such as broadcasting, communications, postal services, health, education and other primary sectors.

### 3.3.2 Effectiveness of distance learning

Providers, either from government or non-government organizations, have been most creative in using a variety of means to meet the needs of the populations served through distance learning programs. In many cases these programs have been successful, enabling many to become literate and to improve their vocational and technical skills, allowing them in many instances, to earn a living.

These programs have also had limited results: the literacy rate remains low in many regions of sub-Saharan Africa. Inequality of provision prevails in rural areas and among marginalized groups. The present programs have not been achieving their goals. Thus, there seems to be a necessity to implement richer programs using multi-mediated and multi-channel communication technology (ICT).

However, the situation is not hopeless, many people have been trained successfully and, considering the classification of resources presented previously, there may be hope, now that a direct two-way connection is available in many centers of learning, opening to new possibilities offered by network learning.

Direct two-way connection may be the result of universal telephone access, as will be the case in Senegal by 1997, of cellular phone technology, of two-way radio or satellite connection in other countries. In the near future, this kind of connection will give access to advanced communication technologies. With two-way communication, interaction is possible; learners can communicate directly or with minimal delays with their instructors. Audio conferences, video courses and computer mediated learning will be available in the most remote areas. In other words, the availability of direct two-way communication is a critical point. As a result of this type of link, and in the light of developments in the pedagogy of distance learning (Michaud and Thomas, 1997), it can be postulated that more efficient modes of distance learning will soon be available in many African countries. Thus we venture to postulate:

Postulate 2 As a result of the establishment two-way communication links between communities, the pedagogy of distance learning will rapidly become more effective.

We attempt a graphic representation of this postulate in Figure 3.2.

Figure 3.2 Relationship between the effectiveness of distance learning methodology and the level of material resources

In other words, the authors of this report believe that as two-way

communication is established between communities, more efficient modes of learning will also be adopted by those involved in distance learning thus providing a better quality product and reaching a broader audience.

### 3.3.3 Cost of distance learning

The authors of this report are aware that the cost of distance education is often a major constraint, and they believe that once two-way communication is in place between learning communities and production centers, it will be possible to select communication and information technologies that will, in the long run, lead to the stabilization of cost.

At present, however, the cost of evolving from printed material to telephone, to interactive oral and to video communications represents a major investment each time. Computer and network technologies often implement the capacities of the previous level of applications. For instance, an Internet connection can allow rapid written communication between learner and facilitator, and the same equipment will soon allow graphic, image, sound and direct or differed interaction between learners and resource persons of all kinds: colleagues, specialists, facilitators, etc., at no extra cost. The price of technological equipment also drops rapidly; the price of personal computers decreases steadily. Thus the third postulate:

#### Postulate 3

As a result of the establishment of two way communication links between communities, the cost of technology as it is applied to distance learning, will rapidly stabilize.

We attempt a graphic representation of this postulate in Figure 3.3 below.

Figure 3.3 Relationship between the cost of distance learning and the level of material resources used

Finally, it is important to stress that African countries need to master the technology through a light project in education, that such a project be developed carefully, well planned and closely monitored. If the first experiments are successful, they will generate other experiments in many directions in which it is possible to expand and promote learning.

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## Chapter 4

### 4.0 African Experiences in Senegal and in Kenya

This chapter provides the contextual background of the two countries Senegal and Kenya, in which the study has taken place. The chapter is divided into three sections, one on Senegal, one on Kenya and a final section attempting to put together similarities and convergences between the two countries. For both countries, we provide first a brief general contextual description including a map of the country, second, a summary of



past and present experiences in distance learning. In both cases, this is followed by a critical review and a list of emanating needs and suggestions received.

## 4.1 Senegal

### 4.1.1 Senegal profile

Senegal, the westernmost country in Africa, has 600 kilometers of coastline on the Atlantic ocean. It is bordered on the south by Guinea-Bissau, on the east by Mali, and on the north, across the Senegal River, by Mauritania. The independent enclave of Gambia nearly divides the country. In this case, Senegal represents a Francophone country in Africa.

A map of Senegal is presented in Figure 4.1.

Senegal became fully independent from France in 1960. Dakar, the capital, is also one of West Africa's leading ports. Its population is in the vicinity of 9 million. The literacy rate for adult population is 38%, and in 1990, the GDP was \$615.00.

Senegal's resources are mostly agricultural. Peanuts are grown on about 40% of the cultivated land, and other crops include sorghum, millet and beans. Fish and fish products are leading exports; shrimp and tuna are the most popular commercial species. Deposits of iron ore, marble, gold, petroleum, natural gas, and uranium have scarcely been exploited. Phosphate rock is also used by Senegal's chemical industry. The industrial sector produces consumer goods, textile chemical and petroleum products. Tourism provides a significant foreign exchange.

Senegal's predominant ethnic group, the Wolof, constitutes 44% of the population, and the language is spoken by more than 70% of the population. Other major ethnic groups are the Fulani, the Serer, the Tukulor the Dyola and the Malinka. Approximate 95% of the population is Muslim and the remainder are Christians. A few southern Senegalese practice traditional religions.

The country is divided into 10 administrative regions, each region into districts and each district into communes.

### 4.1.2 Present and past distance learning projects

A short visit to Senegal did not permit a complete survey of all distance learning projects in the country since its independence. We believe, however, that the following projects in distance learning are representative of the diversity of experiences in that country, and that they are also sufficiently numerous to allow a critical reflection on the matter.

**4.1.2.1 The training of educational administrators.** This was a joint project of the Ministry of Education of Senegal and the Université du Québec à Trois-Rivières, Canada. The project called first for the training of school business administrators (provisseurs et censeurs), and a second phase was designed to train elementary school principals. In each case, the

first group trained was supposed to act as a multiplying agent and train similar personnel throughout the country. The program brought together participants for seminars and made extensive use of written educational material. However, after an initial period of enthusiasm, the program was eventually abandoned when Canadian support stopped.

4.1.2.2 Les Écoles Communautaires de Base. Community Basis Schools (ECB) are managed by local communities where teaching is in the native language but French is taught as a second language. Teachers attempt to offer a practical education to children ranging from 9 to 15 years old who either have never gone to school or have dropped out for various reasons. This project in distance learning is managed by the Ministry of Education of Senegal and a NGO called ADEF. It is presently in its second year. During 1995-1996, it provided education to 40 classes and this year, to nearly 70. At the end of the program students will write secondary school admission examinations, as those who attended formal primary schools. At present, this project is considered a most prestigious initiative.

4.1.2.3 The training of inspectors. Inspectors have access to a special training through correspondence. The training is required to become a certified inspector (Concours des inspecteurs adjoints et inspecteurs de l'Éducation).

4.1.2.4 The training of college teachers in pedagogy.

In Senegal, college teachers are not required to have training in pedagogy when they are hired. This aspect of their training is done through a program of seminars and the use of video and audio tapes. The program was a joint venture of the Agence de coopération culturelle et technique (ACCT) and the École normale supérieure (ENS).

4.1.2.5 Teaching in the vernacular languages of Senegal The Centre de linguistique appliquée de Dakar (CLAD) was involved in teaching in the national languages. We understand that this was mostly done using the national radio stations. Comments received on the effectiveness of the programs are unclear. The experience was eventually abandoned.

4.1.2.6 Televised primary education Some efforts have been done to offer a televised accompaniment to primary school students and teachers. Again, the project did not last long; the program was abandoned for economic and cultural reasons.

4.1.2.7 Training of magistrates and judges At the post-graduate level, training in public administration, in informatics, and the in-service training of judges is done by l'École de la magistrature. It is judged to be successful.

4.1.2.8 Université Bourguiba This private university advertises access to courses and programs on the Internet, but we were not able to get more details. This is a recent experience and could possibly serve to illustrate a privatized distance learning endeavor in Senegal.

4.1.2.9 Environnement lecture. With this initiative the government has attempted to distribute reading material like books and magazines to ensure

that persons who have learned to read will continue to do so. Attempts have been made to set up mobile libraries or even to distribute books distributed to remote areas by bicycle book carriers.

#### 4.1.3 Priorities of Senegal

In recent years, the Ministry of Basic Education has organized consultations and national symposiums, namely one on literacy, held in Kolda in 1993, and one on basic education, held in St-Louis in 1995.

During these consultations the national priorities for education were formulated as follows:

- a) to increase accessibility to education and to provide equity for all, particularly for women;
- b) to improve the quality and sustainability of education. All documents must respect cultural characteristics of Senegal, the products must be of high quality and adopt a practical approach;
- c) to provide Senegalese with an environment of literacy. The Ministry hopes to establish such an environment by promoting the use of written material and books on a daily basis;
- d) to provide much more vocational and technical training. This remains a high priority of the government of Senegal.

#### 4.1.4 Constraints on future projects

If Senegal is to benefit from foreign aid in achieving its distance education objectives, future projects must:

- a) Take into account evaluations of past experiences. We were told that in the past, projects were not always relevant, that resources were not forthcoming and that they were limited to small target groups. Also, very little promotion and information was available on past projects.
- b) In planning a project, resources have to be allocated in a way that ensures its sustainability. It is not possible any more for Senegal to accept foreign aid projects simply to provide immediate development activities. All aid projects must be discussed, and the mechanism ensuring sustainability must be planned before the project is accepted as a joint venture. At present, this principle seems to be accepted both by donors and beneficiaries of international aid.
- c) At present, little research and evaluation are done on foreign educational projects. Thus, future projects should have monitoring, evaluation and research components.
- d) Donors must realize that conditions and demands are such that, in Senegal, the highly qualified civil servants change positions regularly. Consequently, projects must be developed in such a way that they are not dependent on a few individuals that may change positions or be transferred elsewhere at any time.

#### 4.1.5 Community centers

In Senegal, non-formal and informal education is provided through community centers. Unfortunately, during our short stay it was not possible to visit them. We were lead to understand that they were milieu with minimal resources. Very few community centers have water, electricity or telephone connections; in fact, in most cases, they are simply meeting places.

It seems that no one is personally responsible for the community centers. Consequently, they rapidly become dilapidated and they are not conducive to learning activities. A reflection with Senegalese on the subject led to many questions:

- What should be the relationship between the community centers and the primary schools in a village?
- Should someone who lives on the premises be made responsible for them?
- Should the centers be entrusted to NGOs?
- What lessons can be learned from other institutions in Senegal from an administrative point of view?
- What lessons can be learned from the concept of community schools in developed countries?

Those discussions were far from conclusive, but it seems obvious that before advanced technology can be applied optimally in distance education in Senegal, some attention must be given to the infrastructures. One interlocutor said: "You need a physical site in rural Senegal to access sites on the Internet."

#### 4.2. Kenya

##### 4.2.1 Kenya profile

In this case study, Kenya represents an Anglophone country in Africa. It lies across the equator on the east coast of Africa and has diverse typology stretching from sea to desert, mountains to lakes and cities to savannah grasslands. Neighboring countries are Ethiopia to the north, Somalia to the east, Tanzania to the south, Uganda to the west and Sudan to the northwest. It has an area of 582 646 square kilometers.

A map of Kenya is presented in Figure 4.2

The country was once a British colony (1895 - 1963) but became a republic within the Commonwealth of Nations following its independence in 1963. As a result, colonial vestiges such as the adoption of English as an official language are still observable today. In conjunction with English, Kiswahili is the national language.

Its population is estimated at 30 million in 1997 with a projected growth of 3.8% per annum. Approximately 15 % of the population live in cities like Nairobi and Mombasa. Sixty percent of the population is below the age of

25. The main stay of Kenya's economy is small scale agriculture which provides employment to 80% of the population. Other important economic assets of the country are industry and tourism.

With regards to communications, Kenya has well developed air, seaport, post, and road networks, as well as railways, telecommunications facilities and a supply of electricity.

Of the many issues that might be of interest to this case study, education is of paramount importance. The education is three-fold: eight years of primary school, four years of secondary school and four years of university. This system is referred to as the 8-4-4. The national goal is to provide eight years of primary education to all children, but only 75% of school age children in urban areas and a much lower percentage in rural areas, attend classes. Nevertheless, parallel to provision of formal primary education, adult literacy and non-formal education for material development are also promoted. In 1990, the adult literacy rate was estimated at 69%.

An impressive phenomenon is the growth of private schools in Kenya, notably the Harambee schools which are created, established and managed by parents in collaboration with the local community organizations. In partnership with NGOs, the government also pays attention to special education and training facilities to disabled children. Joint government and NGOs endeavors are also noted in the provision of secondary schools and teachers colleges. Currently, Kenya has five public and four private universities. There are, in addition, three national polytechnics, 17 institutions of technology and 17 technical colleges that offer training. In 1994, university student enrollment was 40 000. Despite these facilities, education is not generally accessible to pastoral communities, to urban poor and to some groups of women.

#### 4.2.2 Distance learning in Kenya

Distance education in Kenya can be broadly categorized into two main groups, the public sector and the private sector. Organizations that offer distance teaching but which does not fall in any of the above two sectors include: NGOs, print media and church organizations.

The main agencies offering these programs are:

a) In the public sector, the Ministries of Education, Health, Agriculture, Culture and Social Services, Cooperation and Development, Information and Broadcasting;

b) In the private sector, Strathmore College, schools of professional studies, teaching NGOs that provide courses in family life, youth and parental counseling, agriculture, women's rights, human rights, Aids-HIV information, conservation and environment. The important sectors of activities in distance learning in Kenya are:

1- The broadcast to schools is the largest sector of activities. The program has two components: the continuous training of teachers and materials to be used directly in the classroom. In the past year however,

most of the educational broadcast programs had to be abandoned for financial reasons.

2- Broadcast of non formal education : farm and agricultural techniques, life skills, health education, etc.

3- Training of primary literacy teachers.

4- School equivalency programs.

#### 4.2.3 Institutions visited

4.2.3.1 Kikuyu Campus of the University of Nairobi, offers three different programs through distance learning:

1- external degree program

2- post graduate diploma in education

3- extramural continuing education program. The present distance learning centers for the External Degree Program at Kikuyu Campus are: Kakamega, Nakuru, Nyeri, Kisumu, Mombasa and Nairobi with minor centers in Kisii and Eldoret.

The centers are not used optimally for distance education of teachers. They are equipped with electrical power, a telephone line a two way tele-conference line, a FAX as well as office and classroom space. Because of the technical difficulties related to the audio-conference system, the student teachers are invited to Kikuyu Campus for a total of three weeks, split over two sessions (December and August) annually. It should however be noted that the learning centers is not accessible to the community at large. If ICT are sponsored by IDRC, learning centers would have to be made available to a broader community.

4.2.3.2 Kenya Medical Training College (KMTC), Ministry of Health - This opened in 1926 has satellite colleges in each of the provinces. It trains all para-medical technical personnel in Kenya: nurses, medical technicians, radiology technicians, clinical officers, midwives, pharmacy technicians, orthopedic technicians, etc. The training program lasts two or three years. At one time they can enroll approximately 5000 students and the proportion of men and woman is approximately 50/50.

All students of the KMTC are trained as agents of distance education. All programs have teaching components. Graduates are trained to use graphs, charts and video presentations to educate rural populations. In the countryside teaching is done either in Kiswahili or English.

The Aids-HIV program is a common unit given at different levels to all students. The curriculum is developed in conjunction with the University of Nairobi. The cost and the management of the Aids - HIV program is shared with hospitals, NGOs, UNICEF, research institutes, the Ministries of Health, Agriculture, Water, religious organizations and the Kenya Red Cross.

4.2.3.2 The (AMREF) Africa Medical Research Foundation is responsible for the distance health education programs in Kenya. Health workers have very different basic training and when sent out in the countryside, they often assume responsibilities for which they are not trained. To upgrade their skill, it was decided to resort to distance education using mainly printed material. The first group in 1978 had 100 registered students. This was sufficient to show that it could be done, that health workers were interested; subsequently, the approach was accepted and recognized by the Ministry of Health. AMREF prepared the material and the first course offered was on communicable diseases. The curriculum was presented in simple English, and there were no time limits to answer the questions and do the assignments. In the long term AMREF offered courses in community health, child health, obstetrics and gynecology, communicable diseases, mental health, medicine, helping mothers to breastfeed, environmental health and family planning.

4.2.3.4 Kenya Institute Education is basically a curriculum development institute which is responsible for the preparation of audio and video cassettes to be used for educational broadcasting throughout the country. At present, it has produced cassettes in the form of short radio programs for teachers and students at all primary levels and for most secondary subjects. Due to economic difficulties, (the cost of air time) diffusion was stalled during the last year. There are, however, plans to restart in May 1997.

4.2.3.5 Kenya Institute of Special Education is responsible for the training of special education teachers. It offers two types of programs: a two years residential post certification program, a three month residential initiation program for certified teachers. Until 1996, it also offered a distance education program for qualified teachers who could not leave home for an extended residential period of study in special education. This program was abandoned due to financial difficulties. In five years of operation, an average of 80 students per year have graduated from the KISE. It is unfortunate that the management of that institution has chosen to abandon the distance education program because it had the potential to reach the largest number of students.

4.2.3.6 Kenya Broadcasting Corporation is the official broadcasters of programs prepared by KIS and other educational agencies. In this case, it provides a technical service. It is also involved in producing a limited number of radio and television programs for popular education. The cost of air time for educational broadcast is an issue that needs to be revisited.

The present policy inhibits services to extended populations. We know that in some countries the broadcasting of educational programs is free or provided at a much reduced cost. The same approach may be applied in connection with emerging private radio stations.

#### 4.2.4 Findings in Kenya

From the outset, it was observed that distance learning programs in Kenya are provided by dual modes of instruction, i.e.: institutions offering some instruction to residential as well as to external students. Most of the personnel in the system have no formal training distance education. They

experience difficulties in providing expert guidance to contracted part time course developers, tutor-counselors, editors, producers and media technicians for broadcast, computers and Internet technicians. Thus, printed and correspondence material is not supplemented or complemented by audio and video materials on account of either incompetent personnel, lack of material resources or broken down equipment. Following withdrawal of donor support in recent years, most distance learning programs are funded largely by the Kenya government. Subsequently, a number of program managers have resorted to raising student fees to revive stalled distance learning.

Delivery of distance study materials is done by mail, i.e., e.i.: through roads, railways and air each of which plagued with problems. Some roads, for example, would be impassable due to poor maintenance, and out of order telephone lines lead to delayed turnaround two-way communication. On the one hand, the learning component encompasses correspondence and face-to-face sessions which are scheduled during mid-term breaks in the residential institutions. On the other hand, audio/visual components are hardly used. While broadcast through radio and TV were deficient, cassettes were considered to be suitable media of communication between the students and the distance units. Air time and dubbing services were reportedly too expensive. Thus, learners' progress and performance relied on tutor-marked assignments, tests, demonstrations and, in some cases, teaching practice.

With respect to gender and parity issues, men outnumber women participants, despite efforts of positive discrimination in favor of women. For the program participants, learners reportedly interact, regardless of gender, social or marital status.

#### 4.2.5 Emerging needs in Kenya

4.2.5.1 Arising from our findings, the first area that would call for strengthening, in our consideration of the ICT based learning, is human resources capacity building. Program managers need to be updated and instructed on all the aspects of technologies related to distance learning, including program design, broadcast programs, computer skills, Internet, budgeting and financial control.

4.2.5.2 Some believe that the development of distance learning is hindered by the fact that institutions utilize a dual mode, e.i: distance learning and residential learning. Consequently they propose that distance learning providers be made autonomous so that they can make appropriate decisions related to their governance and rid themselves of being affected by host institutions or deal directly with the private sector for services that could be self sustaining.

4.2.5.2 It is also becoming apparent that an enabling environments for adoption of ICT based distance learning could be piloted on carefully identified target groups such as educational administrators, managers, teachers, and health workers in the primary development sector. Such groups have already access to some requisite technological infrastructures: telephone lines, television sets and computer soft and hardware.

#### 4.3 Similarities between Senegal and Kenya



The overall problem of financing distance education in developing countries has been discussed in *The Opportunity Cost of Distance Education* (Boyle, 1993); *The Practicalities of Running a Distance Learning Programme* (Walsh, 1993); *The Costs of Distance Education* (Morrison and Taylor, 1993). But probably the best summary of ongoing research on the economic aspects of distance learning is probably given by Dodds, (1992) in a paper presented at the Distance Education Conference: Strengthening Partnerships in Gaborone, Botswana, in February 1992. He recognizes that distance education seems to be well established at the university level and in teacher education as well as in secondary and adult basic programs. These programs have been successful in many countries but they lack recognition. The implementation at the non-formal and informal levels remains problematic because they are not universally accessible. We believe that distance learning can be cost effective if it is conducted in large enough programs to achieve economies of scale. Problems and challenges facing distance education, especially in developing countries, fall into the following areas:

- a) Material development and delivery. In Francophone and Anglophone Africa, there have been major problems with the production of culturally suitable educational material. Africa is sometimes referred to as a continent of contrasts. Thus, to be meaningful, most applications should consider the environment and the culture of the people to whom they are directed. This does not exclude some form of pan African co-operation in the production of classroom material like books, audio and video supports to most educational programs. Some quality textbooks are used with very large populations in other parts of the world, and they allow significant economies of scale. Why couldn't this be done in English-speaking, in Kiswahili and in French-speaking African countries?
- b) The maintenance of technical material in educational institutions presents major problems in most of Africa. For instance printing equipment or minor deficiencies in pieces of equipment have prevented communications. Damaged typewriters and other office equipment cannot be repaired or maintained to be used effectively. The postal system is also slow and not reliable in some areas. Next door, the local industry might be using the same kind of equipment effectively.
- c) Tutorial and student support services. Many of the services including instruction services offered to students, are provided by unqualified personnel. In West Africa, the expression used to refer to such persons is "volunteers in education". These persons need coaching and accompaniment that is lacking in many instances. If computer technology is to be implemented, the participants will need considerable initial support. Teachers will have, at times, to become technical resource persons to their own students.
- d) Administrative structures are very centralized, local initiatives and creativity of teachers and local school authorities. Why can't more autonomy be given and promoted?
- e) Lack of political commitment and of understanding explains the failure of many projects. In the past, educational projects sponsored by donor countries or international agencies have not been sufficiently

acknowledged, nor promoted by national authorities. They are viewed as projects of other countries, and if additional resources are necessary, the local authorities either refuse to contribute or are ill-prepared to take over. If cost-sharing were well accepted even the private sector would be involved in supporting such projects. Advanced communication and information technologies have the potential of promoting democracy, equity, participation and co-operation between citizens of all ages, of every milieu and of all social groups. To achieve this objective, an enhancing environment is necessary.

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## Chapter 5

### 5.0 Issues and Recommendations

Prior to the implementation of information and communication technology to education systems in any country, a series of issues must be addressed. Once they are addressed, and once the ground rules are laid, there are areas of application to be investigated. A selection, taking into account national and cultural characteristics, is necessary among the many areas of application. This chapter first discusses issues related to the implementation of ICT in distance learning in Africa, and then identifies five areas of applications in Senegal and in Kenya with respect to which recommendations are made.

#### 5.1 Issues related to distance learning

Most of the current constraints to African entry into the global information society lie in the area of policy, human infrastructure and culture (ADAE, 1995). Enabling legislation calls for telecommunication policy reforms, policies governing the growth and the development of ICT industry and support services, and finally policies that relate to ICT support for the delivery of public goods such as education and health

(ACACIA, 1996). In response to the International Monetary Fund and to the World Bank call for Structural Adjustment Programs (SAP), a number of public corporations relevant to ICT such as post, and telecommunication and the electric power, are considered for privatization. Such structural adjustments have policy implications in creating an ICT enabling environment.

The edge-cutting role of distance learning, thought to be made possible by technological developments, requires a review and clarification of relevant policies and statutory base in African countries. Today's policies will shape the society of tomorrow. Therefore enabling legislation is essential if Africa is to compete in a world environment characterized by an increasing globalization of activities and rapid technological changes.

For example, our interlocutors in Kenya, mentioned the problems arising from a recent policy change in the costing of air time. Since 1996, educational radio broadcasting air time has to be assumed by the producers of the programs. Such an ill-conceived policy has resulted in the abandonment of all school broadcasts. Ill-conceived policies will not promote universal access, democracy, equity, and co-operation within the country, all of which should normally be the by-products of distance learning.

National enabling policies must be developed to ensure the maintenance of equipment, the training of technicians, teachers, administrators and users of technologies. These policies must be built on the principles of service accessibility and equity. The entire continuum of educational needs for the African countries must be addressed. For instance, provisions must be made for decentralized management, allowing certain activities to be cost-effective and permitting local revenue generation. The basic medium of ICT being the information highway, an enabling environment requires comparable conditions promoting flexibility and creativity.

Following this discussion we believe that a recommendation is appropriate.

#### Recommendation 1

That IDRC promote immediate research on ICT policies being formulated in the wake of wide ranging structural adjustment programs in Africa. Knowledge base for such policy formulation and stakeholders need to be defined in a bid to influence trade off and strategic plans. We can only hope that Senegal and Kenya address these issues in order to ensure the successful implementation of ICT in distance learning activities. While the reflection is progressing, we have identified areas of priority intervention as recommended further below. Finally, it is very important to remember that blind use of new information and communication technology will not, by itself, remedy to the educational ills of Africa. If poverty, discrimination and underdevelopment are to be conquered, ICT will have to be adapted and used in the light of Africa's context and cultural traditions. It will have to be respectful of the essential characteristics of the African population: programs and curricula cannot simply be imported from America and Europe; they will have to be adapted and made relevant to the milieu. In other words providing an enhancing environment for ICT also means defining the parameters of such a milieu, it means research and

development and providing for African appropriation of the technology.

## Recommendation 2

That all development project involving ICT in Africa provide an important component of research into the appropriation and adaptation of technological environment and of the curriculum to that specific milieu.

### 5.2 Priorities of application in Senegal and in Kenya

Following a two week visit to Senegal and Kenya five priority application areas have been identified where new enabling policies could be applied in the context of distance learning. They are: distance learning centers, regional African co-operation using technologies, distance learning and equity, learning languages for change and administration and management requirements.

#### 5.2.1 Distance Learning Centers

Advocacy for Distance Learning Center (DLC) that take advantage of the evolving information and communication technology is evident in a number of extant policy documents. Such a center or centers are also regularly referred to as a multi-channel learning base (AISI, 1996; ACACIA, 1996; UNESCO, 1995; AVU, 1996). These centers play the same roles as the classroom in the traditional educational system.

Establishment of an ICT based learning center represents an initiative to test its potential usefulness as a tool in responding to African community development needs in health, education, agriculture and other primary sectors of interest. This is recognized as a challenge by many African countries which are part of a larger world currently building a global information society. If Africa is to retract from globalization forces fueled by the spread of information technologies, it might lead to a progressive marginalization of the sub-Saharan Africa. This was crystallized at the Information Society and Development Conference in South Africa (1996) in which the IDRC was also a participant.

The vision and hypothesis underlying the establishment of an ICT based DLC is that such an institution would present a framework for community institutions to access, for local people to engage in continuous learning programs, for local communities to participate in modern ICT applicable in distance learning and for ensuring long term sustainable strategy for measurable impact on local community problems. An ITC based DLC could focus on informal, non-formal and formal systems and processes through which knowledge/skills and other values are acquired utilized and transmitted.

#### Divergences in existing facilities and practices

Educational practices in Francophone and Anglophone Africa are very different with respect to the management of distance learning centers.

a) In Kenya, the University of Nairobi has six major regional centers: Kakamega, Nakuru, Nyeri, Kisumu, Mombasa, Nairobi and two minor centers, Kisii and Eldoret. Each center is equipped with electrical power, a

telephone line, a two way teleconference line, a FAX service and as well an office and a classroom. Minimal personnel is available to help learners, usually clerks. AMREF has access to less well equipped centers to do health education, yet they are acceptable. In Kenya, other groups and populations particularly basic education groups, small scale farmers, marginalized groups living in distant regions and women, rarely have access to equivalent centers.

b) In Senegal, community centers are very rudimentary. Outside urban areas, they are neither provided with water, electricity nor telephone connection. These community-owned centers have no permanent personnel and are simply available for community activities. This is hardly an environment to install expensive high technology equipment. There is, however, a new and evolving concept in the country, that of telephone centers. These are privately owned and they are equipped with telephones, faxes sometimes photocopy machines and printing services. Since these services have been privatized recently, it is difficult to judge their effectiveness and financial viability. Very few telephone centers can provide classroom, meeting space or a room in which to install computers. Again, this does not seem the ideal place to install ICT equipment for distance learning.

Thus before a DLC can be established in Senegal the following question must be considered: Should a community center be enhanced to the level acceptable to make it a distance learning center or should a telephone center receive a grant to have it transformed into a distance learning center?

In Senegal, we have met advocates of both solutions and, having spent only five days in the country, we are not in a position to pass judgment on arguments that were tinted with as much ideology as pragmatism. Thus, we think that both solutions should be tested and evaluated. It seems inevitable that different models of distance learning centers will be developed in the light of the present economic constraints. They should be evaluated empirically in each country as to their capacity to meet the needs of communities. Such experimentation could be done in conjunction with the initial resort to ICT.

Prior to the implementation of community learning centers using CIT, the following characteristic of the project must be noted: a) The phasing-in of the implementation of a distance learning center using ICT can be done in a progressive and sequential manner:

- i) Initially the number of sites in a country may be initially restricted to selected distance learning centers where two-way electronic connections are available. These could be expanded after a successful tryout.
- ii) The initial target population could be restricted, for instance to educational administrators in Kenya and of *Écoles communautaires de base* in Senegal. But, in the long term, distance learning centers must offer a large variety of programs in order to fulfill the multiple needs of the population in developing countries.
- iii) The range of services available through telecommunication could be increased gradually from simple and rapid e-mail service to teaching

material, image, graphics, sound, and some day, hopefully to eventually animation in either a face to face or a differed context.

Figure 5.1 illustrates how information and communication technologies could be introduced into a distance learning center that can grow or expand along three axis. With respect to this figure, the reader will note that we are suggesting a modest initial contribution along the three axis of growth, of communication, and information technology in a distance learning center.

b) There is a real danger of underestimating the need for the initial training of technicians, pedagogues and administrators. It would be dangerous to assume that once the equipment is in place the donor country or agency can forget about it. Training will have to be planned

Figure 5.1 Graphical representation of paths of expansion - Information and communication technology in a DLC in details and it will have to be sustained. Initial training will have to be followed by a period of application, then by further training at all levels. The eventual success of such a venture is very dependent on the amount of training and coaching received by Africans. It will be necessary to have a resource person responsible for the pedagogy, and a technician will have to be trained to overcome all possible electronic difficulties before the initial implementation period. Some of the African personnel may benefit from visits to ICT centers in developed countries.

c) A distance learning center can become a revenue generating organization and not be entirely dependent on government funds. Once the equipment is in place, many services can be sold to the community. It could compete with telephone and fax centers, it could serve as a public secretariat, it could sell specialized information to individuals and businesses. It could even be used as an entertainment center outside class time.

Once the system is taken over by the receiving communities, it can become an effective means of reaching many target populations in need of further education. In the long term, such a pilot project will become sustainable and will prove to be cost-effective.

Finally, this kind of experimentation will extend modern age technologies into the domain of education, and at the same time will be respectful of the national educational priorities; in Kenya, the areas of priorities are: teacher education and training of educational administrators and health workers. Despite recognizing about 40 indigenous languages in addition to the national language, English is officially recognized as the medium of instruction in all institutions and levels. In Senegal, priorities go to the formal, the non-formal and to vocational and technical education. French and Wolof are the main languages of instruction but instruction, in six other native languages is offered.

Thus the following recommendations:

#### Recommendation 3

That, the IDRC and other donors contribute to the creation of proper infrastructures in two Distance Learning Centers and in a production center

in Senegal and

a) that, the initial service be text interaction and

b) that, the initial population be non-formal education classes.

#### Recommendation 4

That, in Senegal, the production center be located at the École normale supérieure, and that one distance learning center be in a suburb of Dakar and the other in a rural area in the vicinity of St-Louis.

#### Recommendation 5

That, one distance learning center be community- owned and that the other be privately owned. A research project comparing the relative merit of both experience should be initiated immediately.

#### Recommendation 6

That, following acceptable progress reports, the number of centers, the diversity of the programs offered and the increase in the number of computer services be increased with an equal contribution from Senegal and other donor countries or agencies.

#### Recommendation 7

That, the IDRC and other donors contribute to the establishment of proper infrastructures in two distance learning centers and in a production center in Kenya and

a) that, the initial service be text interaction and

b) that, the initial population be non-formal education classes.

#### Recommendation 8

That, in Kenya, the production center be located at Kenya Institute of Education, and that one distance learning center be at the University of Nairobi distance learning center in Mombasa and that the other be in Nakuru.

#### Recommendation 9

That, following acceptable progress reports, the number of centers, the diversity of the programs offered and the number of computer services be expanded with an equal contribution from Kenya and other donor countries or agencies.

#### Recommendation 10

That, prior to the implementation of any ICT project in Africa, detailed provisions be made for the training of all personnel involved, including technicians, teachers and administrators. 5.2.2 Regional African

## co-operation using Information Technologies

Two aspects of this question were brought to the attention of the researchers: inter-institution co-operation and educational material development. We were informed that efforts are being made by different organizations to promote co-operation in Africa, i.e.: the Association for Development of Education in Africa (ADEA), the Distance Education Association of Southern Africa (DEASA) and the West African Association in Distance Education (WADEA). These associations have not made a breakthrough in accessing distance learning technologies to communities. However, such a collaboration would have the potential to bring about great individual and collective benefits.

a) Inter-institution co-operation. From the IDRC preliminary research report on Distance Education Studies in Eastern and Southern Africa (DESESA, 1996) and from interviews, it is clear that there has been growing distance learning activities in Kenya's neighboring countries namely Tanzania, Uganda, Malawi, Zambia and Zimbabwe. Distance learning encompasses overlapping programs at all levels and this is particularly true in a number of professional programs such as teacher and health education. Distance learning is resorted to, because of the realization that conventional education to meet increased demand for continuing or lifelong education in order to cope with the rapid developments in knowledge, technologies and skills. Furthermore distance education in the regions demonstrates that there is communication infrastructure and academic support for regional co-operation. At the tertiary level, for example, the Open University of Tanzania, Makerere University of Kampala, Uganda, and the University of Zimbabwe have all reportedly acquired study material developed for the external degree program of the University of Nairobi. Such experiences should be followed by tracer studies to determine which communication technologies and expertise need to be strengthened and improved. It is now possible to think in terms of regional educational networking.

### Recommendation 11

That the IDRC and other donors promote the extension of the ICT applied to distance learning to other Anglophone and Francophone African countries, and that they also encourage the sharing and the joint development of appropriate courseware.

b) The production of print material. Both in French and in English-speaking Africa, it was noted that agencies offering distance learning programs had either their own obsolete printing service, or that they experienced problems getting material replicated and forwarded to students.

With many of our hosts offering courses in either health education, vocational education, special education, etc. it was agreed that when programs were offered in either in French, English, Kiswahili or some of the most popular indigenous languages of the Sub Saharan region, there may be economies of scale if educational material were produced centrally, and that with the aid of ICT, the quality of the material could be enhanced significantly. Technology could also play an important role in the distribution and in the reduction of surplus stocks.



All persons to whom we have submitted this issue have responded positively. They have also said that this issue was raised many times in recent years but that little has been done in that direction yet. Could ICT enhance the quality of production of distance learning material? Could it ease distribution? Could it make the use of present technologies more effective?

#### Recommendation 12

That, the IDRC promote or sponsor a major study into the possibilities of enhancing present communication and publication technologies used in distance learning in Africa. The study could examine the technical aspects of the production of educational material, and it could identify programs in which co-operation is possible.

#### 5.2.3 Distance learning and equity

Inequalities in provision of schooling particularly for women and marginalized groups, pose a major challenge for redress to African countries in their bid to respond to the Jomtien Conference (1990) advocating "education for all". This is no doubt a relevant issue if sustainable development is to be attained.

Our visits to various centers in Senegal and in Kenya have revealed that the principle of equal access for women and marginalized groups is generally accepted. However, there is little, positive action, if any, and the number of women in schools, in non-formal education programs and particularly in secondary, vocational and technical programs is still much lower. Action in this direction is promoted by groups like the Forum for African Women Educationalists (FAWE). It seems that working men have more time to participate in continuing education programs offered at fixed times either by radio or at community centers than working women who also take care of family responsibilities. This may be due to the fact that the structure for dispensing distance education is deficient and does not favor women's participation. In one case, in Kenya, we were told that approximately 60% of health workers are women and that approximately 60 % of students registered in continuing education courses are men. Why this difference? Could ICT facilitator access to women at times and places that are more convenient for them and for marginalized groups? It should be noted that the introduction of ICT in distance education will not by itself resolve the long lasting problems of inequities and discrimination in Africa; it may simply provide an effective means of reaching marginalized populations, and of providing educational services to far and less developed areas. ITC has to be willfully used as a provider of equity and equal opportunity. Nothing will happen if there is no political will behind the initiatives, thus the following recommendation:

#### Recommendation 13

That, IDRC and other donors sponsor a study on the issue of gender equity and regional marginalized groups as they relate to different educational structures and technologies used in distance learning. Such a study could cover a sample of countries in all of Africa.

#### 5.2.4 Learning languages for change in Africa

Acceptable language (medium) of instruction (LOI) amidst diverse indigenous and foreign languages has arisen as a debatable issue with policy implications in Africa, particularly following the advocacy of the Jomtien Conference in 1990 for "education for all". The underlying parallel issue is the languages for learning as tools for change. Broadening access to distance learning similarly presumes a clearly defined and implemented language policy. In response to a need expressed by African Ministers of Education to explore issues related to LOI, including the use of mother tongues and national languages, a research was carried out in 1996 (IDRC, 1996). The research examined:

a) the relationship between LOI and school outcomes, such as cognitive learning, demands of schooling and attitudes, and

b) pedagogical organizational requirements for the implementation of such policies. It was based on case studies in six African countries Botswana, Kenya, Mali, Nigeria, South Africa and Tanzania.

It was found that the use of the mother tongue in basic education not only enhances pedagogical effectiveness but also facilitates the acquisition of second/foreign language competencies. The findings also established the need for clarity of objectives in policy statements and for the creation of a conducive policy implementation environment. It was subsequently recommended that: African countries move towards implementing bilingual or multilingual LOI policies whereby mother tongues and the language of wider communication (English, French, Spanish and Portuguese) be used in systematic manner so as to suit both the educational needs and the political realities of the African countries.

This recommendation is well taken in the context of this Francophone and Anglophone case study of Senegal and Kenya. Endorsement of this policy guideline strengthens our advocacy for ICT- based distance learning that spans beyond community and pan- African needs for change. While indigenous languages as media for learning are well taken care of in both Senegal and Kenya, policy stand on use of French and English respectively has the potential of enhancing distance learning beyond national borders to attain regional and pan-African co-operation.

#### Recommendation 14

That IDRC and development agencies promote research to determine the relationship between the use of emerging desktop publishing ICT in the production of learning material in both mother tongues and second national languages and cost effectiveness in bid to reduce dependency of African countries on foreign publishers and broaden access to learning through print.

#### 5.2.5 Administration and management requirements

In many instances distance learning has developed as an answer to needs of business and industry or to compensate for the low performance of the public educational system. In many countries, distance learning programs have been left to the initiative of groups, organizations or individuals. Thus, they are not comprehensive, not coordinated, not sequential and not

mutually exclusive. Whether they are relevant to the needs of the students or the countries is questionable.

The administration and the management of a DLC within the ACACIA initiative need to be developed within partnership of institutions in local communities, namely schools, clinics, chambers of commerce, co-operatives, community based organizations and NGOs. The DLC is also expected to cooperate with intermediate organizations: provincials and central governments, private sector organizations, as well as academic and research centers. Emerging distance education associations in Africa, including national and regional NGOs, could also be partners. Such distance education associations include DEASA for Southern Africa, WADEA for Western Africa, and national ones such as KECODE for Kenya, DEATA for Tanzania. and ZADE in Zambia.

If broadly based education is to be provided in keeping with the ACACIA initiative, it needs no longer be left exclusively in the hands of governments whose budgets continue to shrink. To reach long term and sustainable results, a DLC needs to be designed, managed and funded through partnership between parents, communities and the business world. Education must be seen as an investment whose returns neither accrue to an individual nor to the Ministry of Education, but to society as a whole.

#### Recommendation 15

That, the IDRC promote research to determine the constitutional status of a DLC's prospective partners, organizational structure and management as well as sources of finance for adoption of user-friendly ICT.

Finally, the authors wish to stress that the time is appropriate for taking initiatives in the area of distance learning using modern information and communication technology. If the proper steps are taken, and if they are successful, they may result in major savings for the African community and help achieve many of the development goals of equity and non-discrimination.

#### Recommendation 16

That IDRC promote early initiatives in using ICT to provide distance education in Africa. These initiatives should be provided for in the spring 1997 budget.

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## Appendix A

### Terms of Reference

#### A- Mandate of Egino M. Chale, Ph.D.

To undertake a preliminary study to gather information about distance learning in Africa. Under this contract, the services required are:

- a) To carry a literature survey on the possibilities offered by alternate teaching and learning approaches and strategies. The survey will seek to answer what is being done, and can be done in the near future with regard to advances in technology, in the delivery and management of distance education.
- b) To examine past African experiences in distance learning, with particular emphasis on what has been done, the infrastructure existing, as well as the level of professional staff available.
- c) To indicate African needs in distance learning, ranging from informal, non-formal to formal short courses on specific topics to structured long term instruction.
- d) To review discuss issues (e.g.: efficiency, cost effectiveness) related to language of communication in context where indigenous languages are utilized in distance education. How does this relate to learning on health, knowledge, business management agriculture, environmental issues, etc.

This analysis should include questions such as how difficulties related to language have been surmounted, which are the on going projects as well as what are other countries and other agencies are currently contributing to the development of distance learning in Africa. To submit a detailed and satisfactory report of the work accomplished to Dr Kabiru Kinyanjui by January 31, 1997

#### B- Mandate of Professor Pierre Michaud, Ph.D.

Under this contract, the services required (of you) are as follows:

- 1) to travel to Senegal and Kenya to conduct a study about distance learning in Africa, consisting of a survey of the possibilities offered by alternate teaching strategies, past African experiences in distance learning and African needs in distance learning. In each country the institutions contacted will be: Ministry of Education; other government agencies involved in distance education; universities; other educational institutions; research institutes specialised in social sciences; NGOs; and consultant firms in the domain. Details of the selection of these institutions will be finalised in Dakar at the beginning of the constancy;
- 2) to conduct interviews to determine quantitative parameters needed as background information, equipment, personnel, qualifications, past

experiences, opportunity for individuals to express their vision and expectations with respect to distance learning in the two countries, as well as discussions regarding compatibility of equipment, the mechanism of establishing priorities for services to be offered and the amount of resources considered adequate and adaptable in a real learning situation;

3) to participate in focus group discussions on basic issues such as functionality, the priorities and efficiency of distance learning;

4) to attend national workshops in Senegal and in Kenya; and

5) to submit a detailed and satisfactory report of the work accomplished to Jean-Michel Labatut, the Senior Program Officer of the Program Branch Division of the Centre by January 15, 1997.

## Appendix B

### Interview with Focus Groups

CRDI Centre de Recherche pour IDRC International Development le  
d'veloppement international Research Centre B.P. 11007, CD Annexe, Dakar,  
P.O. Box 62084, Nairobi, Kenya

### Distance Learning for action in Africa Interview with Focus Groups

Interview Schedule to serve as a guide for discussion

(N.B. : With permission the interview is to be recorded magnetically)

Name of group \_\_\_\_\_

Institution of attachment \_\_\_\_\_

Date \_\_\_\_\_

This research focuses on information with respect to : institutions programmes and courses, target groups, learning models, available information technology, student support, resources and cost , human resources and expertise available, future needs and plans in distance learning. It also looks at concessions and procurement of information technology applicable in African developing countries to distance learning.

Sponsored by IDRC

January 6, 1997

Egino M. Chale Pierre Michaud

#### 1. Identification of participants

a) Name \_\_\_\_\_

Occupation \_\_\_\_\_

Institution of attachment \_\_\_\_\_

b) Name \_\_\_\_\_

Occupation \_\_\_\_\_

Institution of attachment \_\_\_\_\_

c) Name \_\_\_\_\_

Occupation \_\_\_\_\_

Institution of attachment \_\_\_\_\_

d) Name \_\_\_\_\_

Occupation \_\_\_\_\_

Institution of attachment \_\_\_\_\_

e) Name \_\_\_\_\_

Occupation \_\_\_\_\_

Institution of attachment \_\_\_\_\_

f) Name \_\_\_\_\_

Occupation \_\_\_\_\_

Institution of attachment \_\_\_\_\_

g) Name \_\_\_\_\_

Occupation \_\_\_\_\_

Institution of attachment \_\_\_\_\_

2. How has distance learning evolved in your country since 1990? (areas of learning, providers, learning modes, etc. )

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3. Among the trends that you have identified in distance learning, which one will be important after the year 2000? (areas of learning, providers, learning modes, etc. )

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4. What are the present priorities in distance learning and what are their implications? (areas of learning, providers, learning modes, etc. )

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5. What important changes have taken place in basic education programmes since 1990? And why? (institutions, policies, modes of instruction, target groups, etc.)

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6. To what extent does distance learning promote equity and equal opportunity throughout your country? What are the difficulties and constrain is encountered in reaching these goals? (participation of woman, minorities, nomads, refugees, and other marginalised groups such as the disabled)

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7. What measures have been adopted since 1990 to promote distance learning? (enabling legislation, policies, directives, plans, etc.)



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8. What measures have been taken to promote gender equity and parity through distance learning? (policies and practices, positive discrimination in favour on frontier on marginalised groups)

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9. To your knowledge are there in your country development projects in preparation that will use the support of distance learning? (interactive TV, computer and internet, trade and technology, special groups)

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10. How do you perceive the contribution of distance learning to the promotion of individual welfare? (culture, peace, justice, freedom, tolerance, solidarity, mutual respect, etc.)

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11. In your view, who provides the financial and material support for distance learning projects? (central, regional or local government, NGOs, learner tuition fees, donor countries or agencies, etc.)

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12. What kind of distance learning programmes are offered in your agency?  
(certificate/non certificate, pre/post-service, vocational/technical)

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13. What are the target groups for distance learning in your agency

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14. How has distance learning been provided by your agency since 1990?  
(correspondence, on the job training, radio or television, computer and the  
internet, integrated multi-mediated courses)

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15. What information and communication technology can distance learners  
access to for effective achievement?

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16. Are there provisions for appropriate access to credits for the development of technology in distance learning?

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17. What kind of human resources are employed to provide distance learning? And in your view, what kind of training do they need?

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18. Are there provisions for official recognition of the work done through distance learning?

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19. What local and community institutions have access to information and communication technology applicable to distance learning? (schools, clinics, extension agents, chambers of commerce and community based organisations) To what extent are they supportive of distance learning?

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20. What is your perception of distance learning? How would you define it, based on your experience and knowledge of the milieu?

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## Appendix C

### Persons Counsulted

#### In Senegal

BA Amadou Mahtar PANA

BAI MinistØre de l'Éducation de base

CAMAARA Alouine CRDI

CAMARA Boukara BREDA (UNESCO)

CAMARA Mame Less SYNPICS

CISSÉ Abdoulaye Ministry of Communications

CORENTHIN Alex École supérieure polytechnique

DAMIBE Aimé BREDA (UNESCO)

DANFA Alioune ADEF/Afrique

DEL CASTELLO, Riccardo FAO

DIAGNE Fadhel Teacher

DIALLO Abdoul Ministry of Basic Education

DIALLO Pape Kane RODAL, Thies

DIENG Momar Fondation rurale de l'Afrique de l'Ouest

DIOP Mouhamet SONATEL

DIWA Fara Ministry of Health

DRAMÉ Moussa CRDI

FALL Moussa ENDA

FAYE Alouine IUCN, Dakar

FAYE Makane Commission Économique pour l'Afrique

QUEYE Mamadou Ordre des médecins

KANE Lamine SUDES

KHOUMA Boubacar CRDI

MOTTIN-SYLLA Marie-Hélène ENDA

NDIAYE Momar Ali Délégué à l'information

NDIAYE Madiengue Association des élus locaux

NGOM Alassane Sud Informatique, Ziguinchor

NIOUKY, Léopold Victorien Conseil national de la jeunesse

SAGNA Olivier

SALL Moussa Centre de suivi écologique

SALL Hamidou Nacuzon École normale supérieure

SARR Binta APROFES, Koalack

SARR Chérif Interactive Communication et multimedia

SAVANÉ Malimine CONGRAD

SECK Matar SONATEL

SENE Djibril Député at the National Assembly

SIGNATE Cheikh Oumar Automatisation des fichiers

SMITH Ola CRDI

SONKO Mamadou Lamine Comité national de concertation des  
ruraux

SYLLA Fatoumata Compagnie générale d'informatique du  
Sénégal

SYLLA Yero SAFEFOD, Point E

TAPSOBA Sibry CRDI

THIOUNE Alioune AFRICATEL

TOUR Pape Gorgui

ZONGO Gaston Ecole multinationale des telecommunications

In Kenya

ADAMBO Greg KBC TV Programme manager

AMHAYA B. Department of Educational Studies

ASAAVA F.B. Lecturer of Educational studies

BOWA O Chair of Educational studies

GITAU Ben University of Nairobi

GUSA K K.I.S.E.

KIDOMBO Harlette Registrar of Kikuyu Campus

MBOROKI Guantai Lecturer educational studies

MUITA, G. M K.I.E.

MURAI M Acting head of Educational Studies

MURERI J M Ministry of Education

MWANGIRI Dupin N K.I.S.E.

NAMAI E KBC Radio programmes manager

NAMAI Eulalie Radio Programmes Manager, KBC

NDUBA Stephanie A.M.R.E.F.

NTHENGE John N. K.I.S.E.

OBONYO J.S. Ministry of Education

TUUKUO Paul KMTC

## Appendix D

### List of Recommendations

### List of Recommendations

#### Recommendation 1

That IDRC promote immediate research on ICT policies being formulated in the wake of wide ranging structural adjustment programs in Africa. Knowledge base for such policy formulation and stakeholders need to be defined in a bid to influence trade off and strategic plans.

## Recommendation 2

That all development project involving ICT in Africa provide an important component of research into the appropriation and adaptation of technological environment and of the curriculum to that specific milieu.

## Recommendation 3

That, the IDRC and other donors contribute to the creation of proper infrastructures in two Distance Learning Centers and in a production center in Senegal and

a) that, the initial service be text interaction and

b) that, the initial population be non-formal education classes.

Recommendation 4 That, in Senegal, the production center be located at the École normale supérieure, and that one distance learning center be in a suburb of Dakar and the other in a rural area in the vicinity of St-Louis.

## Recommendation 5

That, one distance learning center be community- owned and that the other be privately owned. A research project comparing the relative merit of both experience should be initiated immediately.

## Recommendation 6

That, following acceptable progress reports, the number of centers, the diversity of the programs offered and the increase in the number of computer services be increased with an equal contribution from Senegal and other donor countries or agencies.

## Recommendation 7

That, the IDRC and other donors contribute to the establishment of proper infrastructures in two distance learning centers and in a production center in Kenya and

a) that, the initial service be text interaction and

b) that, the initial population be non-formal education classes.

## Recommendation 8

That, in Kenya, the production center be located at Kenya Institute of Education, and that one distance learning center be at the University of Nairobi distance learning center in Mombasa and that the other be in Nakuru.

## Recommendation 9

That, following acceptable progress reports, the number of centers, the diversity of the programs offered and the number of computer services be

expanded with an equal contribution from Kenya and other donor countries or agencies.

#### Recommendation 10

That, prior to the implementation of any ICT project in Africa, detailed provisions be made for the training of all personnel involved, including technicians, teachers and administrators.

#### Recommendation 11

That the IDRC and other donors promote the extension of the ICT applied to distance learning to other Anglophone and Francophone African countries, and that they also encourage the sharing and the joint development of appropriate courseware.

#### Recommendation 12

That, the IDRC promote or sponsor a major study into the possibilities of enhancing present communication and publication technologies used in distance learning in Africa. The study could examine the technical aspects of the production of educational material, and it could identify programs in which co-operation is possible.

#### Recommendation 13

That, IDRC and other donors sponsor a study on the issue of gender equity and regional marginalized groups as they relate to different educational structures and technologies used in distance learning. Such a study could cover a sample of countries in all of Africa.

#### Recommendation 14

That IDRC and development agencies promote research to determine the relationship between the use of emerging desktop publishing ICT in the production of learning material in both mother tongues and second national languages and cost effectiveness in bid to reduce dependency of African countries on foreign publishers and broaden access to learning through print.

#### Recommendation 15

That, the IDRC promote research to determine the constitutional status of a DLC's prospective partners, organizational structure and management as well as sources of finance for adoption of user-friendly ICT.

#### Recommendation 16

That IDRC promote early initiatives in using ICT to provide distance education in Africa. These initiatives should be provided for in the spring 1997 budget.

1 Only two groups refused to have their interviews tape recorded.