Identifying Barriers Encountered by Women in the Use of Information and Communications Technologies (ICTs) for Open and Distance Learning in Africa

Sponsored by
The Commonwealth of Learning and
The Acacia Initiative, International Development Research Centre

March 13 - 17, 2000
Zanzibar, Tanzania

SUMMARY REPORT

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THE COMMONWEALTH OF LEARNING

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Organised by: *The Commonwealth of Learning*

Local Host: *The Open University of Tanzania,*
Dar-es-Salaam, Tanzania

Supported by: *The Acacia Initiative,*
International Development Research Centre
The Commonwealth of Learning

Foreword

Education and training opportunities provided through distance and open learning are one of the few educational areas in which women in the developing world are well represented. Open and distance learning helps to overcome some of the challenges that women and girls face when the only other opportunities for education are provided through conventional means. However, with the capabilities of the new information and communications technologies (ICTs) to provide access to open and distance learning, it is feared that this trend may be reversed and that women may become marginalised in accessing open and distance learning due to issues related to their access to, and ability to use, these new technologies.

Further, the influx of the new technologies may have an impact on the staff employed to work in distance teaching environments. If women are disadvantaged in accessing and using the new technologies, they may be limited in the types of positions for which they are employed. In order to further explore these concerns, The Commonwealth of Learning (COL) contracted with a consultant to carry out an environmental scan on the research and information available on issues pertaining to women and their access to information and communications technologies, with particular regard to open and distance learning. The consultant found little research in this area, although some sources acknowledged that women might face barriers when accessing information and communications technologies, especially in parts of the developing world.

In view of this, The Commonwealth of Learning decided to support activities that would provide information and research data to assist institutions delivering education and training through distance modes, organisations and agencies concerned with women's access to information and communications technologies, government agencies, and others working in the field, in order to help ensure equal access regardless of the gender of the potential users.

Preface

In March 2000, The Commonwealth of Learning organised a symposium of African experts involved in women's issues, open and distance learning, the use of information and communications technologies, or a combination of the three areas of interest. The symposium, supported in part by the International Development Research Centre's Acacia Initiative and hosted locally by the Open University of Tanzania, focused on the identification of barriers to the use of information and communications technologies in open and distance learning encountered by women in Africa. Participants from many of the African Commonwealth countries, in addition to the Acacia partner countries, were invited to attend and a representative from each country represented presented a paper for discussion at the symposium.

The country reports identified the extent of open and distance learning provision, the barriers to women's participation, possible strategies that could be employed to overcome the barriers and the possible influence and affect of communications policies on women's participation in the use of information and communications technologies. It was anticipated that the meeting would provide a valuable forum for consultation and interaction among educators involved in the provision of open and distance learning, as well as provide opportunities for strategies to be discussed and plans developed for their implementation.

Acknowledgements

The Commonwealth of Learning is grateful for the assistance and support provided by the organisations and individuals who contributed to the success of this meeting. Specifically, COL would like to acknowledge:

- The International Development Research Centre's Acacia Initiative for contributing to the costs associated with convening the meeting.

- The Vice Chancellor and staff at the Open University of Tanzania for the support provided during the initial planning, as well as during the meeting period.

- The local UNESCO and UNICEF offices in Dar-es-Salaam, which provided funding to support the attendance at the meeting of local participants.

- The meeting participants, who gave their time to attend and provide insightful and interesting contributions to the proceedings.

- Ms. Nidhi Tandon, the consultant who completed the environmental scan and Dr. Margaret Haughey of the University of Alberta, who facilitated the meeting and assisted in summarising the meeting's proceedings and country reports for inclusion in the final symposium report.

Acacia, an initiative of the International Development Research Centre, is a Canadian-led multinational programme operating in sub-Saharan Africa. It is a programme of research focussed on understanding how information and communication technologies can be introduced into rural African communities to enable these communities to take control of their own social and economic development. Working with the governments and local communities of Senegal, South Africa, Mozambique and Uganda, Acacia has supported the implementation of rural telecentres and applications related to policy development, education, health, natural resource management and electronic commerce. (Web site: www.idrc.ca/acacia)

The Commonwealth of Learning is an intergovernmental organisation established by Commonwealth governments in September 1988, following the Heads of Government Meeting held in Vancouver in 1987. It encourages the development and sharing of open learning and distance education knowledge, resources and technologies. COL is headquartered in Vancouver and is the only Commonwealth intergovernmental organisation located outside of Britain. (Web site: www.col.org)

Abbreviations and Acronyms

Acacia	Initiative of the International Development Research Centre
AIDS	Acquired Immune Deficiency Syndrome
AVU	African Virtual University
COL	The Commonwealth of Learning
EDC	Emlalatini Development Centre
HIV	Human Immuno Deficiency Syndrome
ICT	Information and Communications Technologies
IDRC	International Development Research Centre
I I A	Internet Initiative for Africa
ISM	Institute Superieur de Management
ISP	Internet Service Provider
ITU	International Telecommunication Union
MCDE	Malawi College of Distance Education
MPTC	Malawi Posts and Telecommunications Corporation
ODL	Open and Distance Learning
OUT	Open University of Tanzania
SADC	Southern African Development Cooperation
SONATEL	Société Nationale des Télècommunications du Senegal
UNDP	United Nations Development Project
UNESCO	United Nations Educational, Scientific, and Cultural Organisation
UNICEF	United Nations Children's Fund
UNISA	University of South Africa
V-Sat	Very Small Aperture Terminal
WHO	World Health Organisation
ZAMTEL	Zambia Telecommunications Limited
ZOU	Zimbabwe Open University

1 Introduction and Background

1.1 Background

In 1998, following discussions with various interested and concerned parties, The Commonwealth of Learning proposed to work with other agencies to develop strategies to increase the 'comfort level' of women using the new information and communications technologies in the open and distance learning arena. Through this initiative, a series of activities would be carried out to identify specific issues that women face in the use of information and communications technologies and to propose strategies through which these barriers might be overcome.

1.2 Rationale

Women are often well represented in the education and training opportunities open and distance learning provides. This is especially true in developing countries where the characteristics of distance education overcome some of the challenges that women and girls face when the provision of education is limited to conventional means and institutions. With the rapid expansion of new information and communications technologies for the delivery of open and distance education, however, it was feared that this participation rate by women would decrease. Women could, possibly, become disadvantaged in accessing education delivered by distance methodologies due to a variety of issues relating to the use of, or access to, these new technologies.

Additionally, the introduction of new information and communications technologies has implications for the staff employed to work in distance learning environments. If women are disadvantaged in accessing and using the new technologies, they may be limited as to the types of positions for which they are employed or it may lower their chances of being hired for certain positions.

1.3 Project Methodology

1.3.1 Phase One – Regional Surveys

During the first phase of the initiative, preliminary surveys were commissioned in each of the four developing geographical regions of the Commonwealth – the Caribbean, the Pacific, South and Southeast Asia, and Africa. These surveys asked key respondents to outline the way women use information and communications technologies for distance learning in developing Commonwealth countries. The regional survey for the Commonwealth African countries can be found in Appendix One.

Each regional survey also identified a series of questions intended to guide the content of country reports which are intended to provide the background and context for discussions at subsequent regional meetings. The questions guiding the development of the country reports can be found in section six, 'Questions that Country Reports Need to Cover: National Issues', of Appendix One (1998, 6.1).

1.3.2   Phase Two – Regional Meetings

The regional expert group meetings comprise the second phase of the project. It was anticipated that regional meetings would be held in each of the four developing geographical regions of the Commonwealth to identify the spectrum of information and communications technologies that are, or are becoming, regionally prevalent for the delivery of education, and to outline barriers to their use that girls and women face in their roles both as distance educators and as distance learners. The meetings would also deliberate on and identify possible strategies to overcome these barriers and to recommend courses of action to assist girls and women in accessing and using the new information and communications technologies.

Invited participants would have a background in working with women, as well as in distance education, educational technologies and media, or both. Key participants from each country represented would be identified to compile and present a country report addressing the list of questions posed in the regional survey before the meeting. The country reports would identify the following:

- Barriers to the use of information and communications technologies women encountered generally and with respect to open and distance learning
- Strategies that have been used to overcome these barriers
- Examples of the effects of the implementation of technologies on female learners
- 'Lessons learned' as a result of these innovations
- Implications of a national telecommunications policy for women's access to information and communications technologies

A specialist in the field of information and communications technologies and education would be invited to attend the regional meetings to help facilitate and provide insights as a resource person. This document is a report on the third regional meeting, which was held in Zanzibar, Tanzania, in March 2000.

1.3.3   Phase Three – Publication of Findings

A proposed third phase of the project will involve consolidation of the reports from the four regional meetings into a publication outlining the current situation in each region. Additionally, the report will identify strategies to increase access by girls and women to information and communications technologies for education and training purposes. It is anticipated that this final document will include examples of best practices from Commonwealth countries as a means of demonstrating initiatives, as well as proposed projects and activities that could be implemented to assist in improving access to information and communications technologies by women. This final document will be made available to:

- Distance education providers in Commonwealth (and other) countries
- Organisations and agencies interested in information and communications technologies issues for women
- Institutions involved in education provision to girls and women in developing countries
- International women's organisations' resource centres
- Those who attended, or otherwise contributed to, the regional meetings

Additionally, key findings and recommendations emerging from the overall project will be made available on COL's Web site at www.col.org.

1.4   Meeting Outputs

The primary output from each regional meeting will be a report summarising the discussions, identifying barriers to the use of information and communications technologies encountered by women, and outlining strategies to assist girls and women in overcoming these barriers. The reports will also include proposed activities and lessons learned from across the regions about the integration or use of information and communications technologies in educational initiatives. A secondary output will be the publication of the country reports.

It is anticipated that the regional meetings will also help to forge links between and among persons, institutions and agencies using open and distance learning techniques and methodologies, as well as information and communications technologies in the education of girls and women.

1.5   Beneficiaries

The main beneficiaries of this project to identify barriers to the use of information and communications technologies for open and distance learning and to propose strategies to overcome these in developing Commonwealth countries include the following:

• Girls and women in the developing Commonwealth who must, or who would prefer to, undertake their education through alternative means such as open and distance learning.

• Professional women distance educators (trainers, tutors, managers, course developers and so on) who work, or are seeking work, in an educational environment employing the new information and communications technologies.

• Policy decision-makers interested in the interface among educational objectives including access, telecommunications policies and gender development.

2   Report of the African Regional Meeting

2.1   Background to the Meeting

The Commonwealth of Learning organised the regional African meeting to *Examine Barriers Encountered by Women to the Use of Information and Communications Technologies for Open and Distance Learning* in Zanzibar from March 13th to 17th, 2000. The symposium was funded in part by the International Development Research Centre's Acacia Initiative, an 'international effort to empower sub-Saharan African communities with the ability to apply information and communications technologies to their own social and economic development' (Web site, Spring 2000). The goals and objectives for the symposium fit in well with the mandate for the Acacia Initiative and staff there were pleased to be able to join hands with The Commonwealth of Learning in bringing the activity to fruition.

The local host for the symposium was the Open University of Tanzania and its staff provided much assistance in the pre-symposium organisation as well as during the actual event.

In preparation for the symposium, experts from 15 African countries (14 Commonwealth and one, Senegal, an Acacia Initiative partner) were invited to prepare country reports that provided background about the country, as well as its education system, telecommunications policies and the extent of provision of open and distance learning. In addition, writers were asked to identify barriers to women's participation in the new information and communications technologies and in training and capacity-building strategies, and to discuss how the presence or absence of communications and gender-sensitive policies affected the provision of education through open and distance learning for women and girls. Report guidelines, including a list of the questions to be addressed (see section six of Appendix One), were provided to help ensure similarity in content across the reports. The country papers are not included in this document, but are summarised in Appendix Two. The country papers will be published in a separate document by The Commonwealth of Learning in order to provide a general resource to those interested.

The symposium itself provided a forum for the sharing of expertise and knowledge concerning the use of information and communications technologies in open and distance learning among the participants, and consultation and discussion on the barriers women face in the various countries represented at the meeting. It was hoped that this might result in further in-country discussions led by the various participants as well as encourage continued sharing and involvement in subsequent activities group members might plan as an outcome of the symposium.

2.2   Profile of Participants

The participants invited to the five-day symposium were all involved in some aspect of open and distance learning, women's issues, telecommunications, or any combination of these interests in their various countries. Most of the participants were also the authors, or co-authors, of the country papers. In all, twelve countries were represented at the meeting: Botswana, Ghana, Kenya, Lesotho, Mozambique, Namibia, Senegal, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe. The 24 delegates, the resource person Dr. Margaret Haughey of the University of Alberta, Canada, and Ms. Susan Phillips from The Commonwealth of Learning, comprised the meeting group. A detailed contact list for the participants is provided in Appendix Three.

2.3   Summary of Meeting Agenda and Methodology

It was anticipated that the participants at the five-day symposium would identify the spectrum of information and communications technologies prevalent in their country for the delivery of education and outline the barriers to their access that girls and women encounter in their roles both as distance educators and as distance learners. The participants were also expected to deliberate on and identify possible strategies to overcome the barriers identified and to recommend courses of action to assist girls and women in accessing and using the new information and communications technologies.

During the first two days, following the Opening Ceremony, presentations of the country reports were delivered to the meeting. The third day was spent in discussing and identifying the barriers to access, and the fourth day was spent elaborating strategies and initiatives that could be implemented to overcome these barriers. The final morning focused on clarifying the initiatives proposed, making recommendations, and identifying the proposed next steps. A detailed agenda of the proceedings is provided in Appendix Four.

2.4   Opening Ceremony

The symposium was formally opened by Mr. A. Y. Mzee, Principal Secretary for Education, on behalf of the Minister, the Honourable Omar Mapuri, Minister of Education, and Deputy Chief Minister, Zanzibar. Mrs. Grace Kissassi, Regional Director of the Zanzibar Centre of the Open University of Tanzania (OUT) chaired the opening ceremonies.

Professor Geoffrey Mmari, Vice-Chancellor, Open University of Tanzania, the host institution for the symposium, presented thought-provoking remarks in his opening comments. He began by remarking on the importance of this occasion when experts in open and distance learning from across the African continent were convened to discuss and deliberate on the barriers women encountered, of which access was perhaps the most obvious. He pointed out that 'access' has various components, including physical, social, psychological, sociological, and economic aspects. In theory, access should be present, but, in practice, the barriers were many and women and girls were constrained by a multiplicity of factors. He affirmed that OUT valued The Commonwealth of Learning's initiatives in this area and wished the participants every success in meeting the challenging objectives of the symposium. For Professor Mmari's complete speech, see Appendix Five.

Ms. Susan Phillips, The Commonwealth of Learning representative, welcomed everyone to the symposium, and reiterated the title and focus – *Identifying Barriers Encountered by Women to the Use of Information and Communications Technologies for Open and Distance Learning* – possibly the longest title ever! She informed delegates that this was the third of four regional meetings on this topic. The first had been held in Delhi in November 1998 for the East Asian region. The second had been held in conjunction with *TEL-isphere '99*, the Pan-Commonwealth Forum organised by The Commonwealth of Learning and held in Barbados in November 1999. Like the previous symposia, this one was to focus a regional perspective on the barriers, strategies and actions surrounding girls' and women's use of information and communications technologies for open and distance learning.

Mr. A. Y. Mzee, the Principal Secretary, in his opening speech, welcomed the participants to Zanzibar. In his address, he commented that while open and distance learning increases training and educational opportunities, without training in the new telecommunications technologies, women may become further marginalised. He reiterated the importance of the task facing participants and declared the symposium open. See Appendix Six for a copy of Mr. Mzee's opening address.

On behalf of the participants, Dr. Magdallen Juma of Kenya responded with a brief word of thanks.

2.5   Identifying Barriers and Strategies

The first working session began with the delivery of the country reports. A brief summary of the major points from the report follows and synopses of the individual papers are provided in Appendix Two.

- Many more women than men are functionally illiterate, approximately 60% in many countries.
- Most food is produced by women but they do not own the land.

- More women than men live in rural areas (with rural populations made up of 60% women and 40% men in some countries).
- Many women are expected to manage a household, rear and educate children, and run small enterprises to keep the family in food and clothing.
- In many cultures, women are expected to ask permission from their father or husband if they want to study or to spend money on education.
- Fewer girls than boys are sent to school.
- More children and youth are having to leave school and enter the workforce in order to help sustain their families because of AIDS.
- A variety of open and distance learning is provided in all countries but there is seldom strong coordination among the various providers. The combination of public and private providers further complicates the provision and can result in over-provision in some areas and non-provision in others. Few countries have any overall government coordination in this area.
- The provision of open and distance learning to women is hampered by the lack of access to technologies, be it the lack of access to the radio or audio-cassette player (because they are owned by the male), the cost of equipment, or the lack of electricity and radio signals. Print is still the most important medium, with radio and audio-cassettes having a secondary use. Information and communications technologies are confined to cities and to business and industry where there is some potential for educational use outside office hours.
- Most countries have begun the process of liberalising the government monopoly on telecommunications.
- Some countries have gender-sensitive policies in place.
- Few women participate in public life and hence there is a lack of awareness of issues affecting women and girls.

2.6   Summary of Reports from the Two Earlier Regional Meetings

Ms. Susan Phillips provided brief summaries on the previous two regional meetings held to examine the barriers to the access to information and communications technologies women encounter in open and distance learning.

2.6.1   Commonwealth Asian Region Meeting

The first meeting, a three-day meeting held in Delhi, India and sponsored by The Commonwealth of Learning and the British Council, was held in November 1998. Participants attended from the Commonwealth Asian countries of Bangladesh, India, Malaysia, Pakistan, and Sri Lanka.

The barriers women encounter when accessing information and communications technology that were identified at this meeting included:

- Access to the technology (hardware) itself
- General literacy levels and the language used
- Costs
- Lack of training
- Institutional barriers
- Infrastructural barriers

Major recommendations that emerged at the meeting included:

- Increased awareness-building through various activities including publishing reports and case studies on related Web sites
- Capacity building through the support of local groups and project development
- Arrangements for subsequent meetings should encourage more involvement at all levels and sectors

Three project outlines were developed and presented to the Delhi meeting as a whole:

- The establishment of community radio stations
- Conducting national surveys on open and distance learning for women
- Convening regional training workshops for distance education providers and distance learners who are women

2.6.2   Commonwealth Caribbean Countries Meeting

The second regional meeting to examine the barriers to women using information and communications technologies was held in Barbados in November 1999 in conjunction with the international conference, *TEL-isphere '99.* Representatives attended this meeting from Barbados, Belize, Dominica, Guyana, St. Kitts and Nevis, St. Lucia, and Trinidad and Tobago.

Three issues emerged from this meeting:

- Consideration of gender differentials with respect to information and communications technologies should encompass issues for both men and women in the Caribbean context
- Women and men cannot be categorised into gender specific, homogeneous groupings. Educational experiences and needs vary depending on social and economic circumstances and country contexts
- Information and communications technologies are neutral tools. They cannot, nor should they be, considered in isolation from the varied purposes, philosophies, and contexts for learning that they enable

Possible projects and activities that were proposed at the meeting in Barbados included:

- Conducting national surveys and carrying out research on learner needs, and on the provision of information and communications technologies and their appropriateness for open and distance learning in the Caribbean context
- Convening regional training workshops for educators, teacher educators, and educational policy makers in the use of information and communications technologies to support teaching and learning, as well as in personal and professional use
- Establishing pilot media centres to increase access for those living in rural communities

Note that complete meeting reports and country papers are available from The Commonwealth of Learning.

2.7   Barriers Identified from the Country Reports

In a brain-storming session following discussions of the country reports, a number of barriers girls and women face when accessing information and communications technologies were identified:

Education and Training
- Illiteracy among women
- Insufficient reading culture (lack of interest in reading or lack of papers and books to read)
- Language barrier (both in the language used and in the use of technical language)
- Lack of trainers in information and communications technologies
- Lack of training opportunities
- Lack of female role models as trainers in and users of the technologies

Technical Infrastructure
- Expensive to use
- Not available, particularly in rural areas

Educational Infrastructure
- Lack of access to secondary schooling
- Lack of access to information
- No employment-training link
- Lack of access to training centres
- Lack of access to technologies, because –
  - At work, men have access
  - At school, boys have more access through the types of courses they take

High Costs
- For equipment
- For connectivity
- For maintenance
- For sustainability
- For supplies

Socio-cultural Issues
- Men hold senior positions in which they have access to information and communications technologies
- Women must stay at home doing household chores, raising children, and complying with their husbands' wishes
- Women are simply too busy
- Women lack confidence
- Boys are educated before girls
- Girls often are married when they are very young
- Girls often are very young when they first get pregnant
- Women have a heavy workload because they are responsible for the household, raising children, and for supervising economic projects that are often essential for survival

Paternalistic Attitudes
- In the workplace, men hold senior positions and women face sexual harassment by supervisors

- In homes, boys are educated before girls
- In schools, girls are educated in different courses than are boys and face sexual harassment by boys and teachers

Health and Resources
- AIDS has decimated much of the professional population
- Resources are spent on health
- Women do much of the nursing of people with AIDS
- Girls are often faced with unwanted pregnancies in their teens

Governance Issues
- Lack of political participation by women
- Diversion of funds, mismanagement, and lack of accountability
- Political and economic instability
- Policy issues, including –
  o Telecommunications issues relating to liberalisation and commercialisation
  o Gender issues are absent from policy or lacking in application

Rural/Urban Split
- Population distribution means that a higher proportion of rural people are women
- Labour migration leaves women with household and economic responsibilities

2.8   Strategies Identified from the Country Reports

During a plenary session, the following strategies to overcome the identified barriers to girls' and women's access to information and communications technologies were suggested:

- Raise awareness about and advocate for open and distance learning and the use of information and communications technologies
- Negotiate for the use of information and communications technologies in the workplace
- Heighten literacy
- Network
- Collaborate and cooperate with The Commonwealth of Learning and other agencies
- Train open and distance learning staff to be sensitive to gender issues
- Liberalise policy (could have both positive and negative effects)
- Consider affirmative action
- Use female role models
- Establish telecommunications policies
- Orient girls towards science-related and technology subjects
- Mainstream gender policy
- Establish tele-centres
- Develop gender sensitive materials
- Establish and encourage the community to take control of local, community-based centres
- Use appropriate technologies
- Provide tax relief from import restrictions
- Provide information on information and communications technologies
- Train open and distance learning learners
- Link with non-governmental organisations that work with women
- Control the quality of open and distance learning for girls and women

- Act to support other women
- Take optimistic focus
- Establish income generating projects
- Survey the needs of and constraints on learners
- Explore alternative power sources
- Consider sustainability issues in relation to equipment and infrastructure
- Plan workshops to include learners
- Role-model information and communications technologies in training and management
- Protect women's legal rights
- Develop materials with appropriate indigenous content
- Find male allies
- Integrate resource centres
- Give girls preferred entry to tertiary education
- Administer open and distance learning through the Ministry of Education

2.9   Restating the Strategies Identified in the Country Reports

After reviewing the charts, the participants decided to regroup the list of barriers under four general headings: socio-cultural, political, economic, and education and training. In some cases, the barriers were reworded for clarity and then each was placed under one or more of these headings. The finalised lists were as follows.

Socio-cultural Barriers
- Sexual harassment of women and girls
- Lack of cooperation among women
- Lack of confidence
- Multiple languages
- Illiteracy
- Socio-cultural attitudes
- Workplace attitudes
- Insufficient reading culture
- Lack of information flow
- Lack of accountability
- Poverty
- Lack of political participation

Political Barriers
- Lack of political participation
- Lack of gender and telecommunications policies
- Political and economic instability
- Unemployment, with a lack of gainful employment opportunities
- Lack of accountability
- Conflicts
- Infrastructure issues
- Mismanagement

Economic Barriers
- Labour migration, leaving single mothers to care for families
- Discriminating labour practices
- Sustainability
- Population distribution
- Geography
- Infrastructure
- Economic costs
- Poverty
- Economic instability
- Access to technologies
- Problems of information flow

Education and Training Barriers
- Lack of coordination among providers
- Multiple languages
- Illiteracy
- Lack of access to secondary education and technical training
- No employment/training link
- Insufficient reading culture
- Lack of information and communications technologies trainers
- Credibility of open and distance learning programmes
- Lack of educational opportunities

2.10   Reports on the Four Barrier Groupings

Participants formed four groups based on one of the four classifications of barriers on which they wished to work. Each group was asked to review the list of barriers and add, delete or combine in order to bring coherence to the list. They were also asked to identify for each barrier on their list:

- How this barrier to open and distance learning affects access to information and communications technologies for women and girls?
- Why is this a barrier?
- To whom is this a barrier?

Most of the third day was taken up in discussion of these barriers in the small groups. Groups reported in the first session of Day Four and the reports follow.

2.10.1   Group One – Socio-cultural Barriers

In response to the question about who is affected by socio-cultural barriers, the group began by defining categories of women: rural, urban, employed women, non-employed, married, single, mothers and girls (both rural and urban). They then combined the socio-cultural barriers, describing them more fully during discussion, as follows.

Sexual Harassment, Socio-cultural, and Workplace Attitudes
- At home, information and communications technologies belong to men.
- Women, particularly in rural areas, must have permission to use the technologies available.

- In the workplace, women are deterred from using information and communications technologies.
- If the information and communications technologies are located in a learning centre, some married women and girls, particularly non-employed women, will have to get permission from husbands and parents to go there.
- Married women are expected to do household chores that leave them with no time to study or go to learning centres. Single women may have to provide for their families on their own.
- Women may not feel safe at the training centres.

Illiteracy, Insufficient Reading Culture, and Lack of Information Flow
- Illiteracy, and more especially semi-literacy, will hamper women and girls from using technologies, particularly computers, because of the language.
- Semi-illiterates have a problem studying on their own. Due to their limited reading skills and speed, they cannot conceptualise ideas and are dependent on outside assistance. This barrier is particularly relevant with respect to rural and urban groups in non-formal education that is being delivered through open and distance learning.
- Africa is not a reading culture. People depend mainly on the spoken word. As such, use of print suffers because reading is an overwhelming task. Reading speed is quite slow, words are often spelled out while reading and only small portions are read at a time. This leads to de-motivation, since it is hard to get a sense of the story or idea and loss of interest results.
- Learners might not be able to follow properly what is taught through television. Since they cannot read quickly, they will tend to concentrate on the information and communications technologies, rather than on what they hear. This particularly affects those with the lowest levels of education.
- Information does not flow to the learners partly because they do not demand it through questioning, which would trigger more information. Most female learners do not have the time to go and interact with others because of their responsibilities, lack of time, and the need for permission.

Lack of Confidence and Interest
- Most women and girls who have access to information and communications technologies are not sure that they will use the equipment properly. They are afraid to experiment with the technologies, do not practice, and seem to depend on males no matter how young the men are. Some exhibit fear of videocassette recorders and even cassette tapes. This lack of confidence is most likely a result of cultural influences.

Multiple Languages
- Learning materials are usually in English, a language in which many women and girls enrolled in open and distance learning have limited understanding. It will not be easy to translate the materials into local languages, however, and girls and women will need to understand and speak English as it is the language of business and work. For open and distance learning in non-formal education, audio programmes can be developed in the local languages of the learners. Computer technical language is difficult to understand and is in American English, which many women and girls do not commonly understand or read.

Lack of Accountability
- Lack of accountability becomes a barrier when leaders are irresponsible, misuse resources, and do not execute plans. When an initiative is not sustained, the target group will not be reached and therefore they will be affected negatively and considered non-completers.

Poverty
- Poverty is a barrier to women because they do not own property and must ask for money and other resources and considerations in order to enrol in open and distance learning programmes. This particularly affects single mothers who have no one to turn to and might not be employed. Nor is it easy for married women to get loans to purchase information and communications technologies equipment or pay course tuition without the permission of their husbands. To get a loan, single women will have to have proof beyond doubt that they can repay the debt.

Lack of Political Participation
- The absence of women in decision-making positions is a barrier as no women are present to influence the provision for women's needs and convince decision-makers about those needs. It also means that there is no one to focus on the development of women and girls in open and distance learning and information and communications technologies programmes.

Lack of Cooperation Among Women
- Lack of cooperation among women stems from women not getting moral support from each other or from their mothers. Women are then unable to share their own concerns and learn the needs and problems of others in open and distance learning. They cannot group themselves to acquire and share equipment or knowledge and ideas. Alone, with no social and emotional support, they become frustrated and demoralised as learners and leave school.

Religion
- Some religious practices prohibit their members from the use of information and communications technologies, particularly radio and television. As such, women and girls in those groups cannot access these technologies for study purposes. In some religious groups, days of worship take up all the members' free time leaving no time available for study.

Conclusion
It should be noted that most of the socio-cultural barriers to the access of information and communications technologies for open and distance learning programmes have their roots in the socio-cultural norms and relationships that prevail in homes and society as a whole. Apart from the identified barriers, it should be noted that the existence of barriers becomes more prominent as one moves from urban to rural settings. They will also tend to affect the uneducated woman more. Within urban areas, women in high-density areas will be more affected by these barriers than those in low-density areas.

2.10.2 Group Two – Political Barriers

The political barriers to open and distance learning via information and communications technologies for women and girls identified by the second group were clustered into three categories:

Governance
- Lack of accountability
- Infrastructure issues
- Mismanagement or diversion of funds

Policy
- Lack of gender and telecommunications policies
- Infrastructure issues

Politics
- Lack of political participation
- Political and economic instability
- Unemployment, conflicts, and infrastructure issues

During discussion, each of these political barriers was more fully described as follows:

Governance

<u>*How is governance a barrier?*</u>
The ruling parties lack commitment to the people to whom they should be accountable. Further, the ruling parties are not bound by any document that would ensure that they fulfil their commitments. Consequently, they lack accountability for the funds that government is to use for development activities. At the same time, the infrastructure is not meeting the needs of the people and therefore there is no relevancy to meet the specific needs of women and girls. The infrastructure results primarily from a political decision and overrides all economic and social factors.

<u>*Why is governance a barrier?*</u>
Since there is a lack of commitment on the part of the ruling parties, there is no accountability to the national priorities.

<u>*To whom is governance a barrier?*</u>
Governance is a barrier to all women, especially those in the rural areas and specifically those not in politic al positions. Those women in political positions are too few to make an impact.

Policy

<u>*How is policy a barrier?*</u>
The lack of policies allows governments to deviate from any commitment or follow up any binding or guiding document. Since no policy exists, the party in power can rule as it wishes. Therefore, the needs of the people and specifically the needs of women and girls are not considered.

<u>*Why is policy a barrier?*</u>
Most telecommunications are concentrated in the urban areas and those available are not affordable and accessible to women and girls. Furthermore, in many countries, no policies make a deliberate attempt to address the pertinent issues of women and girls.

<u>*To whom is policy a barrier?*</u>
Policy is a barrier to all women, especially those in rural areas.

Politics

How are politics a barrier?
Not enough women enter the political system to make notable contributions to bring about change and influence politics which would uplift the position of women and girls. In situations in which there is political and economic instability women's priorities change. More time is spent on ensuring the survival of the family than anything else. Due to insecurity, access to information and communications technologies becomes a secondary priority. If information and communications technologies do exist, they become a means to foster 'reconstruction' or 'rehabilitation'. As for unemployment, the economy is politically determined. Under one party rule, for example, few women work in parastatal organisations. With the multi-party system and free-market economy, even fewer women than ever are in the workforce and possibly their chances to access information and communications technologies are even lower. This issue can be linked to the infrastructure issue which is also politically tied.

Why are politics a barrier?
There is no deliberate move to develop an integrated approach that is gender-sensitive for addressing issues related to women and girls. The political and economic history of most African countries has created the current environments. Therefore, more men are employed, have access to information and communications technologies, are more educated, and dominate the political arena. In conflict situations violence destabilises lives.

To whom are politics a barrier?
Politics are a barrier to women and girls, especially those in rural areas.

2.10.3   Group Three – Economic Barriers

The economic barriers to open and distance learning using information and communications technologies for women and girls that the third group identified were clustered into three categories, as follows.

Female Poverty
Poverty often affects elderly, female peasants, both rural and urban uneducated women, women caregivers for HIV/AIDS orphans, and those who are lowly paid. Female poverty results from:
- Labour migration
- Female heads of families
- Labour discrimination

Lack of Access to Technology
- Geography
- Population distribution
- Lack of information flow
- Economic costs
- Infrastructure

Sustainability Issues
- Economic instability

Female Poverty

How is female poverty a barrier?
Poverty-stricken women cannot afford equipment such as telephones and radios, or even the electricity to power them. Their time is spent on survival for themselves and their families. They have poor conditions for home study. There is a lack of family support for studies or for themselves as students, and these women are usually passed over for training opportunities.

Why is female poverty a barrier?
The exclusion of women and their invisibility are a result of both social and political issues, and lead to their marginalisation.

To whom is female poverty a barrier?
Poverty is a barrier to women of all generations but it has the most serious implications for children.

Lack of Access to Technology

How is the lack of access a barrier?
Access to resource centres is hampered by distance, terrain and scattered populations. Lack of a postal service hampers the delivery of course materials. Lack of electricity and telephones means that there is no information flow about courses and opportunities. As well, radios and cassette players need batteries, television and computers need energy, and e-mail and the Internet need telephone lines and electricity. Low-income groups cannot afford telephones, e-mail, electricity and the payment of large sums of money at one time to purchase equipment.

Why is lack of access a barrier?
Lack of access means continued dependence on the print media.

To whom is the lack of access a barrier?
Lack of access is a barrier to those in the rural areas and to all low-income groups.

Sustainability Issues

How is sustainability a barrier?
Sustainability affects costs, human resources, the politics of technology, and accountability. In terms of costs, there are implications for open and distance learning providers who depend on state budgets and donors. And there are implications of higher costs for end users. In terms of human resources, it is difficult to create a trained nucleus of information and communications technologies and open and distance learning experts, and to retain their services. It is difficult to sustain technology and keep current and appropriate equipment in working order, overcome breakdowns, provide maintenance, and maintain a power supply. Mismanagement, lack of commitment and consistency, and corruption all lead to a lack of sustainability.

Ownership is also a sustainability issue. A lack of community ownership results in an absence of responsibility which manifests itself in difficulties that range from taking care of things to planning the future. Donor-ownership leads to short-term responsibility and may involve inappropriate projects and equipment.

Why is sustainability a barrier?
Shareholder involvement and incentives are lacking, and uncertain funding leads to a lack of continuity. All combine to create disillusionment which is sustained by a lack of political will.

To whom is sustainability a barrier?
Sustainability is a barrier to all potential learners, especially women and girls, and to all open and distance learning providers.

2.10.4   Group Four – Education and Training Barriers

The education and training barriers to open and distance learning using information and communications technologies for women and girls that the fourth group identified were clustered into three categories.

Management Barriers
- Lack of coordination among providers
- Lack of relevant training and employment
- Credibility and quality assurance of open and distance learning programming

Provision
- Multiple languages
- Illiteracy
- Insufficient reading culture

Access
- Lack of educational opportunities
- Lack of information and communications technologies trainers

During discussion, each of these education and training barriers was more fully described, as follows.

Management Barriers

How is management a barrier?
Lack of coordination among providers results in wasted resources in the development of programmes and materials due to duplication of effort, thereby increasing costs to both learners and providers. Lack of relevance between training and employment results in lost opportunity costs. Historically, open and distance learning programmes have been perceived as second best, thereby perpetuating the myth that they are inferior. The novelty of open and distance learning and information and communications technology programmes and the lack of familiarity for users, particularly women, is another barrier.

Why is management a barrier?
The lack of coordination among open and distance learning providers and lack of policy guidelines on the dissemination of information results in duplication of effort. If parents do not see the relevance of education for their daughters, they will not support education and training, thereby perpetuating ignorance, poverty, and illiteracy among women. As well, information and communications technologies carry information that is irrelevant to the needs of the majority of women, so women are not motivated to use them. The lack of credibility of open and distance learning programmes results in the non-acceptance of open and distance learning programmes

and their graduates. In some countries, this has led to the requirement that open and distance learning students sit the same examinations as conventional students to prove the viability of open and distance learning programmes.

<u>*To whom is management a barrier?*</u>
Management affects women at all levels but mainly those with low incomes, the rural and urban poor.

Provision

<u>*How is provision a barrier?*</u>
Many people are literate in their first language but are only able to recognise and sign their name in English. They have inappropriate reading skills and lack appropriate materials. Thus their ability to obtain information and access open and distance learning programmes is limited. Literacy levels differ both in reading and writing and in technological literacy. In some countries, more liberal telecommunications policies have resulted in the commercialisation of the media.

<u>*Why is provision a barrier?*</u>
The presence of multiple languages makes the costs of developing, translating, or both developing and translating prohibitive and many open and distance learning providers lack multi-lingual expertise. The poor reading skills and lack of relevant reading materials perpetuates ignorance and limits participation. For many, even newspapers are expensive and unaffordable. The commercialisation of information and communications technologies has had the effect of limiting access because they now charge providers and end-users for the service. This charge also limits women's access to information about what is available.

<u>*To whom is provision a barrier?*</u>
For women in minority language groups, language is a major barrier. Illiteracy affects all women, but especially rural women who have the lowest literacy levels.

Access

<u>*Why is access a barrier?*</u>
The lack of relevant educational programmes, facilities and female trainers in information and communications technologies limits opportunities for education and training for women and girls. Even when access to such information and communications technologies programmes is possible, the training programmes are short, training strategies are inadequate, and technical support is lacking at these centres.

<u>*How is access a barrier?*</u>
The absence of relevant facilities and the lack of female information and communications technologies trainers means that there are no role models to help women and girls think differently about what they can accomplish, or to provide support and confidence that learning these skills can benefit them. Girls and women who are able to take courses in information and communications technologies do not receive sufficient training to ensure skill maintenance.

<u>*To whom is access a barrier?*</u>
Issues of access are acute for girls and women, both urban and rural, and at all literacy levels.

2.11   Identifying Actionable Barriers

All the participants reviewed the charts of the group presentations and then convened to identify the barriers that were most actionable. After discussion, the symposium participants identified five actionable barriers:

1. Lack of access
2. Presence of information and communications technologies illiteracy
3. Lack of information and communications technologies trainers
4. Lack of coordination among open and distance learning providers
5. Absence of appropriate curriculum materials

Following discussion, the fifth barrier – the absence of appropriate curriculum materials – was seen as not easily actionable by the group. As a result, four groups were formed: one to work on each of the remaining four actionable barriers identified. Each group was to identify possible strategies and actions to overcome the identified barrier.

2.11.1   Overcoming the First Barrier – Lack of Access

The first group began by limiting their discussions to the provision of open and distance learning courses already available through information and communications technologies. They determined that there were three components of access:
- Access to the physical equipment
- Socio-cultural access
- Cost

The target group was defined as potential learners who are girls and women 14 to 20 years old and out of school, who wanted further or vocational education, and who lived in rural areas. They chose this group arguing that providing education for this group might help stabilise the rural population and reduce urban drift.

Their strategy was two-fold: to establish public access centres that make information and communications technologies available and to build on technologies that are already available in the local community.

They would begin with a needs assessment and would select pilot areas with high numbers of the target population. They would include a range of both rural and urban areas, and would develop an inventory of resources available, the needs of the community, the needs of the target group and the local socio-cultural barriers to access.

Their action plan had three components: physical, social and financial cost. In terms of the physical requirements, they would have to do the following:

- Locate a suitable base, whether a library, school or community centre, teacher resource centre, petrol station stop, or shop
- Select appropriate equipment
- Train trainers or use local resources
- Install the equipment

Alternatives discussed were to train school leavers to teach in the resource centres and to provide training for all levels of computer literacy. In terms of social concerns, they would do the following:

- Begin a sensitisation/mobilisation campaign
- Start the campaign during the needs assessment phase
- Work with local women's organisations
- Provide flexible opening hours at the centre so women and girls can attend
- Involve community participation in the drawing up of appropriate rules
- Use a long-term perspective
- Ensure ownership by a local committee which includes representatives from the community, learners, owners of the installation or building and whoever brings in the information and communications technologies. (They hoped this might better ensure security.)

In terms of cost, they would charge a minimum user fee (the amount would depend on location). They would seek core funding from the local government out of local revenues, as well as direct community funding. This funding would be used for installing, maintaining, and staffing the centre. Finally, they would lobby at local and national levels for reduced telephone charges for e-mail and Internet access, including local calls to the Internet service provider.

2.11.2   Overcoming the Second Barrier – Illiteracy in the Use of Information and Communications Technologies

Another group chose awareness-raising and the use of information and communications technologies as their strategies. They decided that three groups could make the biggest gains if their awareness and ability to use information and communications technologies were enhanced:

- Women office workers who had access to information and communications technologies
- Women's associations who could model the use for others
- Adolescent girls who could enhance their awareness through the school curriculum.

They identified an action plan for each target group.

Action Plan 1. To work with public and private employers to raise awareness about, and the use of, information and communications technologies

The group's target population was women in secretarial and managerial positions who have access to information and communications technologies through their work. The plan would begin with a needs assessment of employees and employers. It was proposed that it was possible for companies to reorganise the work day so as to allow women to access information and communications technologies for further education and to enhance their computing skills. Negotiations for appropriate time slots and facilities for female employees would be carried out with employers, as well as consultations with the female employees on the programmes most relevant to their needs. Negotiations also would take place with open and distance learning providers for the delivery of relevant programmes for the target group, and with broadcasting houses and information and communications technologies providers to advertise the programme.

Action Plan 2. To work with women's associations to raise awareness about, and the use of information and communications technologies

The focus of the second action plan was to raise awareness among the members of women's associations who could then be role models and trainers for other women and girls. Organisers would begin by determining the needs of the women in the associations and then identifying a small core group from the members who would first be trained in the use of information and communications technologies and then in how to train others. A monitoring team to oversee and evaluate the project would be identified. The action planners would negotiate to obtain facilities to be used by the target group as well as in how to use the media to create awareness of the project.

Action Plan 3. To work with local governments and Ministry of Education officials to raise awareness about, and to use information and communications technologies through the school curriculum

The third action plan focused on enhancing the awareness of primary and secondary school girls. The group planned to work with local government officials to develop a curriculum, as part of the national curriculum, which would enhance the students' media and information and communications technologies literacy skills. Radio and television were included as part of the information and communications technologies awareness strategy. The programme would enhance the students' reading and writing skills through the use of radio and audio-cassette programmes, and help them evaluate radio and television programmes. A teacher-training module would be developed and local institutions would be encouraged to provide facilities for in-service training for teachers.

2.11.3   Overcoming the Third Barrier – Lack of Information and Communications Technologies Trainers

The third group identified a series of specific skills associated with information and communications technologies. These skills related to radio and audio-cassettes, television and video-conferencing, telephone and audio conferencing, print and desktop publishing, and Internet, e-mail, and computer conferencing. Each technology required training in a set of operational skills.

The group chose as their strategy the establishment of national training teams, with each team responsible for in-country training, to create a multiplier effect. The group would develop a curriculum for the trainers that would be generic and involve all the information and communications technologies, with individual countries using the curriculum to the extent it was applicable. The group would host a Web site, where they would post the curriculum for use by the trainers and help facilitate training sessions for the national teams from the various countries. They would introduce a compulsory entry-level course in information and communications technologies for all tertiary education staff that would help enhance the use of information and communications technologies in open and distance learning programmes from these institutions. They planned to begin a sensitisation campaign for politicians and institutional decision-makers through a series of workshops on information and communications technologies.

2.11.4   Overcoming the Fourth Barrier – Lack of Coordination of Open and
           Distance Learning Providers

The fourth group discussed strategies to develop harmony or provide coordination among open and distance learning providers. They began by identifying the areas of open and distance learning provision in which coordination might prove beneficial, including policy guidelines, open and distance learning programmes, open and distance learning materials, and learner support services (that is, resources whether human, materials or infrastructure). They examined each one in turn.

Policy guidelines are important for individual institutions and governments, regions and internationally, where applicable. In instances in which guidelines do not exist, the institutions could initiate the establishment of policy guidelines and lobby to have them used. Where such guidelines exist, institutions can implement programmes within existing policy.

Programme development could occur through coordination involving existing programmes, methodologies and materials, as well as new programmes. One initiative might be to evaluate and revise existing programmes to tailor them to specific target groups in terms of programme methods, use of information and communications technologies, materials used, and income generating activities. A needs assessment for new programmes could be undertaken to assist in policy formation, to identify income-generating activities, and to identify cost recovery programmes that could be used to recuperate production costs.

The group decided to focus on the coordination of open and distance learning materials and the provision of learner support in open and distance learning for women and girls. They identified a number of activities that might be undertaken:

- Build teams to establish working groups of individuals involved in materials development in order to monitor the production and provide for quality assurance
- Network to share information sharing and resources
- Collaborate at all levels to avoid duplication and the wastage of resources
- Train to induct trainers in the use of selected technologies and have them train others
- Select and use appropriate technology
- Recruit staff and learners
- Develop promotional and marketing mechanisms for target groups and providers
- Develop appropriate and relevant organisational management styles
- Develop an open and friendly organisational culture
- Develop information management systems for record-keeping for staff and students
- Devise, monitor, and evaluate programmes

3   The Formal Closing of the Symposium

Because of local logistics and a country holiday, the closing ceremony was held at the end of Day Four. It was chaired by Mrs. Nuru Kameka, the liaison person from the Open University of Tanzania, and attended by the Permanent Secretary for Education, Mr. Abdul Y. Mzee. Dr. Magdallen Juma of Kenyetta University, Kenya provided a brief summary of the symposium. She mentioned the digital divide and the concerns for the widening gap between those able to access information and communications technologies and those who cannot. She also briefly summarised the barriers identified in the country papers, the major groupings of barriers,

including the five major barriers, and outlined the symposium's attempts to identify operational strategies to address them. The strategies examined varied from provincial resources to working with governments and rural associations, and the need for partnerships and for a concerted effort to develop a cohort of trained educators. She concluded by thanking Mr. Mzee as a representative of the Tanzanian government, the sponsors, and in particular Ms. Susan Phillips from The Commonwealth of Learning, and all who had worked to ensure that the symposium could be an appropriate venue for a fruitful dialogue on this important issue.

Ms. Susan Phillips, on behalf of The Commonwealth of Learning, thanked all for their participation. She gave recognition and appreciation to the hard work of every one of the delegates, most of whom had travelled long distances to attend, and to the local hosts and staff of the Open University of Tanzania for the organisation of the event that helped to ensure its success. She also thanked the International Development Research Centre's Acacia Initiative for their support, as well as the support provided by the local UNICEF and UNESCO offices. In closing, she invited the participants to consider meeting again at the next Pan-Commonwealth Forum in Durban, South Africa in 2002.

In formally closing the symposium, Mr. Abdul Y Mzee noted that he had been pleased to join the delegates, even if only briefly, and commented that it was encouraging that alternative forms of access were being explored since increasing access to training was important for everyone. See Appendix Seven for a copy of Mr. Mzee's closing remarks. Mr. Moses Twesigye-omwe of Uganda spoke on behalf of the delegates. He thanked the invited officials, the organisers, the sponsors, and all those involved in the symposium over the previous four days. He concluded with a response to Ms. Phillips's invitation: 'Call us! We are ready to come!'

4   Next Steps and Recommendations

4.1   Discussion and Recommendations

For the remaining participants who did not have to leave early on Day Five, an informal meeting was held to continue discussions and to identify follow up actions and make suggestions based on the meeting's deliberations. Ms. Susan Phillips opened the discussion by outlining the anticipated outcomes for the day's session – the next steps and recommendations arising from the symposium.

A discussion session followed, which focused on four topics: the reports from the symposium, continuing the discussion, the outcomes of the symposium, and the formation of an association.

4.1.1 Reports from the Symposium

First, participants agreed that the papers presented at the symposium and the report of the barriers, strategies and action plans should be completed and published in print and on The Commonwealth of Learning Web site. Delegates also discussed the importance of the involvement of government officials if the proposed action plans are to succeed. They suggested that the Ministry officials associated with open and distance learning and information and communications technologies should be briefed about the symposium and its outcomes to assess the government's commitment (whether financial or in kind) to their actualisation. In addition, they asked that all those in each country involved with telecommunications, whether in government, the media or as Internet service providers be sent the report.

4.1.2   Continuing the Discussion

Participants suggested that The Commonwealth of Learning should set up an e-mail discussion group (listserv) for the participants so they could continue the discussions begun at the symposium. One suggestion was that a topic could be set and a moderator identified. Every two months the topic and moderator could change. This was seen as one way to help continue the dialogue, to exchange information and advice among participants, and to provide full information for participants to share with government officials. The full report of the symposium would be posted on the Web site and could be a reference for the listserv.

In addition, it was suggested that not only should in-progress case studies be posted and shared, but preliminary information about the formation of an association could also be provided before the next face-to-face meeting.

4.1.3   Outcomes of the Symposium

Participants reviewed the various suggestions from the groups and recommended that a variety of activities could be undertaken. They recognised the diversity of situations and the different interests of the symposium participants and therefore suggested that recommendations from the symposium relating to barriers and strategies should be implemented through various activities.

In particular, they recommended that each participant should choose a target group with which to work, and that they should begin by holding a focus group meeting with potential learners from this target group to identify their needs and aspirations. These meetings would involve 10 to 12 people and the session would include a profile of the learners, a needs analysis of the areas of open and distance learning requested, the extent of their access to and familiarity with technologies, the types of delivery methods preferred and available, the level and kind of student support needed, and the level and kind of local resources available to provide support for the learners.

The data would be written up as a case study. Progress reports would be posted on the listserv by the end of September 2000, including implementation plans. At the Pan-Commonwealth Forum in 2002, time will be put aside for a meeting of this group. The case studies will be presented and it is anticipated that they will provide a solid database for decisions about further strategies for overcoming barriers.

4.1.4   Forming an Association

Members were very interested in continuing the discussion and suggested that The Commonwealth of Learning explore the feasibility of establishing a pan-African association to coordinate activities related to open and distance learning, information and communications technologies, and women's issues within the region. They suggested that such an association could have country chapters and might be best envisaged as a network of interested members. They recommended that The Commonwealth of Learning consult with existing associations with a view to forming a new group or linking to an existing group with a focus on women, open and distance learning, and information and communications technologies. They recommended that some research into the constitutions of existing associations be undertaken and warned that associations needed a clear focus if they were to not only survive but also be effective.

Participants suggested that The Commonwealth of Learning explore with funding agencies the possibility of acquiring support to bring people together to draft a constitution to present at a

meeting to be convened possibly in conjunction with the next Pan-Commonwealth Forum. The meeting would have two objectives. Part of the meeting would involve reporting on the case studies. The second part of the meeting would focus on the development of an association. Research on constitutions of existing associations should be presented to the group through the listserv to provide examples that will assist in drafting the constitution. Sustainability must be built in to ensure the continuance of the association and people from each country to be represented should be invited to attend a meeting in the fall of 2000, possibly in Harare or Gaborone.

4.2 Project Proposal

Ms. Susan Phillips provided a short presentation on a project that The Commonwealth of Learning is planning to start in the fiscal year, 2000–2001. She felt that this group could provide some very useful insights and feedback on the proposed activity, and possibly some advice on moving forward on it.

The proposal is to develop open and distance, flexible delivery learning materials for training orphanage workers. It is estimated that approximately 10 million children in Africa have been orphaned as a result of AIDS-related illnesses, and indications are that this number will continue to increase. As a result, more orphanages will be established. However, at present, little or no training is available for those who work in these institutions.

Through this project, pertinent materials for training orphanage workers in a variety of skills and knowledge-areas will be located or developed.

It is anticipated that those currently running 'good' or 'successful' orphanages will provide the outline for the curriculum content for the training materials. Given that, the first activity will be to bring together those responsible for managing orphanages or others who work within these institutions to develop an outline for the curriculum.

A lot of interest in this project was expressed, and most of those present indicated they would like to work with The Commonwealth of Learning on the activity. A number of the participants indicated that they currently were working, on a volunteer basis, either with children in orphanages, or with those running similar institutions.

Ms. Susan Phillips promised to keep the group apprised of the situation and of the progress made towards organising a workshop to develop the curriculum content required. She also asked that if anyone had suggestions about possible contacts, such as non-governmental organisations working in the field, or individuals and experts, that these be sent to her for follow-up.

4.3   Next Steps

The following next steps were identified as a guide to action:

- The Commonwealth of Learning will undertake to revise and publish workshop proceedings and papers
- Participants should brief ministry officials responsible for open and distance learning about this meeting and outcomes, and see what their commitments would be
- Participants would identify the open and distance learning associations in Africa and provide The Commonwealth of Learning with this information

- Participants would identify the telecommunications, media and Internet service providers for each country and provide these to The Commonwealth of Learning so that symposium reports can be sent to them
- The Commonwealth of Learning would set up a listserv for the conference participants
- Participants would begin case studies. The particulars of the process would be discussed on the listserv and preliminary reports would be posted some time around the end of 2000

Ms. Susan Phillips closed the proceedings and wished everyone a safe journey.

DISTANCE EDUCATION IN COMMONWEALTH COUNTRIES

AFRICA

A Survey on Gender Differentials in Access to Information and Communication Technologies

Compiled by: Ms. Nidhi Tandon

Distance Education in Commonwealth Africa
A survey of Gender Differentials in Access to Information and Communication Technologies
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References and Further Reading

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> Table 1: Gender Disparities, 1993
> Table 2: Education Trends
> Table 3: Information Technology Access

Annex 1:
International Telecommunication Union, Telecommunication Development Bureau: World Telecommunication Development Conference (WTDC 1998) - Proposal for the adoption of a resolution addressing gender and telecommunications policy in developing countries. March 1998

Annex 2:
Notice to students pasted outside computer room, Makerere University, Uganda, 1997

Annex 3:
Glossary of terms

Introduction

This report is one in a series of four regional surveys of the uses of ICTs in the delivery of distance education programmes and the particular gender considerations around access to these technologies.

While ICT has emerged as a common acronym for Information and Communication Technologies, in fact the range of technologies covered by the term is very much open to interpretation. Technologies are usually defined in terms of their properties, and can also be defined in terms of their appropriateness to specific contexts - which implies that the definition of technologies is reflected in their specific contexts and uses. If there are two defining characteristics of ICTs[1], they are:

- the relative strengths of the various technologies (telephones, radios, television, pagers, the Internet) as synchronous and/or asynchronous communications channels and workspaces, and
- the rapid growth of the wireless component (such as wireless phone systems).

For the purposes of this report, references to ICTs will focus primarily on the "new information and communication technologies". These include the developing technologies of telecommunications, computing and microelectronics and their convergence which has created a range of new possibilities for information collection, manipulation, transmission, storage and presentation and through these possibilities have created a whole new industry in the service of education and training. Current developments in digital communications and the convergence of telecommunications technologies exemplified by international standards such as ISDN[2] make audio, video, graphic and data communication available through an ordinary telephone line on a desk top computer. Older technologies such as television and radio which are used in innovative ways through their combination with newer devices are called "user devices" - these include optical and video disks.

There is a seamless spectrum of communication technologies which are progressively converging and integrating with each other to serve distance education needs - computer mediated communications (CMCs); low lying satellites; radio and television broadcasting; telnet; and technologies using alternative sources of energy. Some of these uses of information technology will be mentioned in the series of reports as examples of the adaptability of the new technological wave of ICTs.

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[1]   Sam Lanfranco, lanfran@bellanet.org - Senior Program Specialist, Bellanet International Secretariat, Canada, June 1998

[2]   Integrated Services Digital Network

1   Some Preliminary Notes

1.1   *Trends in Education*

World-wide demand for education by working adults is growing exponentially, it is being driven by a number of factors including globalisation, the need for continual re-training, and the complexity of employment requirements in the Age of Information.

"In 1997, the 74 business schools in Asia-Pacific ... reported a record 170,000 applications for the 11,000 full time MBA degrees in English that they will award in 1999" [3]

In response to this need, academic and private sector initiatives are burgeoning everywhere to capitalise on the use of communication technologies to link courses and trainers with the largest possible number of students. In most cases, the easiest and most profitable way to do this is to link "established brand-name" universities with technology firms who then cater for students already in the education pipeline.

The market for education, however, is very large and fragmented with only a fraction of demand for education being met by current educational systems. Within that fraction, even less attention is directed towards girls and women. Given its experience and its commitment to a whole range of education and skills development for Commonwealth citizens, The Commonwealth of Learning needs to consider where its own capacities lie in order to address some of the specific needs of people who might otherwise be marginalised by both:

- the new education and information technologies, and
- the course content delivered through this medium.

Women who have been cut off from educational resources in the past, have an uncertain future on the Internet. If men continue to dominate the computer labs, access to computer skills and related employment opportunities - which is a likely scenario since men are mostly the gatekeepers, the future of women in the Information Age may suffer.(see Table I: Gender Disparities).

1.2   *Telecommunication Policies and Gender Equity - New Resolutions*

There now exists substantive documentation addressing the gender policy issues related to the evolving information technologies. Notable amongst these are:

- *Gender Equity, Telecommunication Development and the ITU* (International Telecommunication Union) - submission to the Session on Gender Issues, in conjunction with ITU's WTDC 98, March 23-April 1998, prepared by CIDA
- *Gender and Telecommunications, an Agenda for Policy* prepared by the United Nations University Institute for New Technologies (UN/INTECH) and the United Nations Development Fund for Women (UNIFEM).

The first paper notes that

"...in order for telecommunications to contribute most effectively to its broader purpose of increasing socio-economic development, the needs and priorities of both women and men have to be taken into account, as well as a recognition of the different, gender-based constraints on access to and benefits from technologies"

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[3]   Asia Inc.' Sept. 1997 - there were no statistics for proportion of women students.

Table 1: Gender Disparities, 1993

Region	Adult Literacy rate (%)		Gross enrollment rate, all educational levels (%)		Earned income share (%)	
	Female	Male	Female	Male	Female	Male
Sub-Saharan Africa	45.4	64.7	37.2	45.9	35.6	64.4
East Asia and Pacific (a)	71.9	89.1	55.0	61.0	37.5	63.5
South Asia	35.0	61.7	43.2	59.6	23.9	76.1
Latin America and Caribbean	84.2	87.0	68.2	68.9	26.1	73.9

(a) includes all of Southeast Asia, East Asia and the Pacific

Source: UNDP (1996)

Both of these papers were fed into the most recent ITU conference which held a special session on gender issues and telecommunications. As a result of the gender session, the main conference adopted a detailed resolution addressing gender and telecommunications policy in developing countries. A task force will be established within the ITU with representatives from Member States and others including NGOs (see Annex I).

The members of the task force are expected to participate in ITU- development activities to ensure that a gender equity perspective is included in its policies and work programmes, including human resource development activities, study groups, seminars, conferences and workshops. Their focus will be two-fold:

- ensuring that the benefits of telecommunications and the emerging Information Society are made available to all women and men in developing countries on a fair and equitable basis, and
- encouraging the recruitment, employment, training and advancement of women throughout the telecommunications field.

1.3   *ICTs are no Quick Fix*

While the new wave of developments following the evolving information and communication technologies (ICTs) are exciting and hold great potential, the technologies themselves do not present a quick fix to deeply entrenched development problems. ICT tools are important when they serve to overcome physical, material and technical obstacles to teaching and learning, but in themselves are insufficient as tools aimed at improving the quality of education and its output.

It is sometimes difficult to distinguish between problems that may follow in the wake of a new technology and problems that existed before the technology was introduced. An assessment of access issues that prevent women from using one form of an education delivery system cannot be isolated from an assessment of the overall system that limits women's education opportunities in the first instance. In other words, access to ICTs is only a small aspect of a much deeper and systemic problem around the provision of education to girls and women (see Table 2: Education Trends).

As well, ICTs are just one of the tools of education delivery, the benefits of introducing expensive ICT tools need to be carefully evaluated on a country by country basis. Where it is too expensive to be efficient, then concentration on enhancing current delivery systems is just as, if not more, important in the short term.

As such, this report's focus which on the gender differentials to ICT access, while important, is narrow and needs to be read with the wider context in mind.

1.4   *The Technology is Constantly Evolving*

As the Web matures, the technical aspects tend to be far more advanced than what exists on the Net. This suggests that any strategy on the technical capacity-building side of things needs to be as far-sighted as possible. As an example, one research survey in Africa found that even during the first year of the survey, there was a major migration of subscribers of the former Fidonet nodes toward providers of full Internet access. Within the same year, full Internet access, and even competing commercial providers of access, had appeared in two countries, Uganda and Zambia, and

Table 2: Education trends

Region	Primary enrollment rate (a)(%)				Secondary enrollment rate (%)		Adult Illiteracy
	Total		Female				
	1965	1992	1965	1992	1965	1992	1995 (%)
Sub-Saharan Africa	41	67	31	60	4	18	43
East Asia and Pacific (b)	88	117	–	113	–	52	17
South Asia	68	94	52	82	24	39	50
Europe	102	99	97	–	45	–	–
Latin America and Caribbean	99	106	97	105	20	45	13
Middle East and North Africa	61	97	43	89	17	56	39

– = not available

(a) for some countries with universal primary education, gross enrollment ratios may exceed 100% because some pupils are younger or oder than the country's standard primary school age.

(b) includes all of Southeast Asia, East Asia and the Pacific

(c) includes Europe and Central Asia for 1992 data.

Source: World Bank (World Development Reports 1992, 1995 and 1996)

were emerging in a third one, Senegal. Originally, the survey had intended to consider exclusively the use of electronic mail through store-and-forward systems. Mid-way through the survey however, the scene of electronic communications had transformed, electronic mail was now possible with a much more powerful technology, thus transforming the users' experience and possibly their appreciation of the outcomes.[4]

Even in a country like Australia, where education institutions recognise the importance of having an information technology plan, it is difficult to keep the plan up to date due to the rapid changes occurring in the technology field.[5]

It pays to know what the range in options of technology are - a comprehensive overview of the structure and basic function of telecommunications such as satellite technology, electrical information access networks, telephony, wireless radio, and other multimedia such as television, audio/video reproduction is needed. Particularly important is an update assessment of the availability of basic connectivity through electronic mail. Communities are better equipped then to make an informed choice about which of the options most closely relates to their immediate needs and what options might be open to them in the future.

1.5   Characteristics of ICTs in Developing Countries

At the drawing board level, it is expected that the convergence of broadcasting technology with telephony will open up all kinds of opportunities for education development. It is also expected that the benefits of economies of scale in running all types of communications through the same "pipe" are especially realisable in Commonwealth developing countries where the bulk of the population has still to be wired for television and telephones.

At the ground level, however, the rate of change in ICT development ranges from country to country - much depending on the supporting infrastructural base. Historically, technological developments have tended to have both positive effects on, say production, in terms of rate of growth and cost reduction, and negative effects through marginalising or excluding whole sections of the population from those benefits. In the case of information and communication technologies (ICTs), this is particularly true in developing countries because most telecommunications infrastructure or connectivity is inherently urban-biased. For instance, Kampala, the capital city of Uganda has 4% of the nation's population but 60% of the share of all telephone lines. This urban bias especially affects women because they usually constitute the majority in rural areas.

"In a context of large disparities of wealth and access to services - the introduction of new technologies is likely to benefit those who are already privileged and thus deepen the gaps between the haves and have-nots. Access to electricity, phone lines, money and security play a major role in determining who can enjoy the advantages of the new opportunities opened by technology".[6]

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4   ECA/IDRC ongoing research project: Electronic communications in African development: tracking their impact (1st phase) http://www.bellanet.org/partners/aisi

5   Delaney, Bernadette and Dyson, Chloe. Women: Creating the Connection, Women and Information Technology in the Vocational Education and Training Sector, Dept of Education, Australia. 1998

6   Ran Greemstein - on-line narrative report on ICT and Education, Education Policy Unit. University of Witwatersrand, South Africa, 1997

The rationale for using of educational technologies is different for developed and developing countries. Developed countries have well-established schooling systems and high enrolment levels. They primarily use technologies to improve the effectiveness of teaching and learning, to individually tailor instruction, and to provide specialised education to small groups of learners. In developing countries, on the other hand, where good schools are affordable only to the relative few, policy makers seek alternatives that make significant improvements in educational and research effectiveness, while at the same time increasing access to education, particularly at the secondary and tertiary levels, at lower cost per student.

The managerial and technical capacity for implementing educational innovations has increased in many developing countries. In addition, the infrastructure necessary for using more sophisticated technologies is steadily being strengthened. Availability of electricity, telecommunications, and computers is generally on the increase. Therefore, in spite of educational and technological differences between low- and high-income areas, the introduction of interactive educational technologies will ultimately become more feasible in developing countries[7]. It is a question of time.

Table 3: Information Technology Access, gives the most recent figures that show the disparities in computer access and Internet connectivity within the regions that this report is concerned about. For example, in the Caribbean, Guyana - a low income country, has no available data on either Internet service providers (hosts) or the estimated number of users of the Internet. In Trinidad and Tobago, an upper middle income country, there are 55 hosts, just under 2000 Internet users and just under two computers available for every 100 people. Somewhere in between the two countries, lies Jamaica, a lower middle income country, which has more hosts per population but only 1600 users.

What these figures show is that developing countries are at very different levels of internet connectivity and one has to be careful about making generalisations even at a regional level. The figures by themselves probably need to be combined with the socio-economic data of each country to present the actual distribution and spread of computer access. This extends to an analysis of women's access to ICTs as a middle income country is more likely to have a higher literacy rate and a higher proportion of women taking up education and employment opportunities, than in a low income country.

In Nattering on the Net, Spender notes that women's marginalisation from the new communication technologies is "less to do with women and more to do with computers" which she argues are the sites of wealth, power and influence[8]. I would suggest that this is probably true to varying degrees in developing countries. In the Cook Islands, for instance, it is apparent that a majority of the women who participate in distance education, come from households where the amenities and telecommunication technologies are modern. Their higher standard of living is also reflected by the fact that the vast majority are employed and thus have a considerable degree of economic independence. In addition, many come from relatively "smaller" families, in the sense that the extended family concept is a diminishing phenomenon.[9]

Suffice it to say, that even if we agree that there are very specific gender differences in access to and use of ICTs, these differences will probably be somewhat modified or influenced by national infrastructure and national income levels.

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[7]   Bojana, Boh. Interactive Educational Technologies in Higher Education, ESP Discussion Paper Series, Education and Social Policy Department, The World Bank 1994

[8]   Spender, Dale. Nattering on the Net - Women, Power and Cyberspace. 1995

[9]   COL and University of South Pacific - South Pacific women in distance education, 1995

Table 3: Information technology access

	INTERNET				Estimated P.C.s	
	Hosts:	Per 1million	Estimated users:		Total (k)	Per 100
	Total 1995	inhabitants	Total 1995	Per 1m. inhab.	1995	inhabitants
Low income countries(a)						
Ghana	6	0.35	60	3.51	20	0.12
India	788	0.85	10000	10.76	1200	0.13
Kenya	17	0.64	200	7.49	18	0.07
Sri Lanka	6	0.33	60	3.27	20	0.11
Uganda	58	3.05	600	31.54	10	0.05
Zambia	69	7.34	800	85.05	....	....
Zimbabwe	93	8.45	900	81.74	33	0.3
Lower Middle Income (b)						
Belize	1	4.63	10	46.3	6	2.78
Fiji	52	66.33	70	89.29	....	....
Jamaica	164	64.95	1600	633.66	....	....
Namibia	11	7.09	110	70.88	....	....
Senegal	6	0.72	60	7.19	60	0.72
Swaziland	1	1.06	10	10.62	....	....
Tonga	1	10.2	10	102.04	....	....
Upper Middle Income						
Antigua & Barbuda	160	2424.24	1500	22727.27	....	....
Barbados	2	7.66	20	76.63	15	5.75
Malaysia	4194	208.39	40000	1987.48	800	3.97
Mauritius	....	....	....	....	36	3.19
South Africa	48277	1164.51	460000	11095.83	1100	2.65
St Lucia	1	6.02	450	2710.84	....	....
Trinidad & Tobago	55	42.15	1960	1501.92	25	1.92
High Income						
Australia	309562	17146.45	1000000	55389.39	4979	27.58
Bahamas	276	989.25	2700	9677.42	....	....
Brunei	156	549.3	834	2936.62	8	2.87
Canada	372891	12595.07	1220000	41207.72	5700	19.25
New Zealand	53610	14923.17	180000	50105.78	800	22.27
Singapore	22769	7623.97	90000	30135.61	515	17.24
United Kingdom	439732	7512.55	1500000	25626.57	10900	18.62

Notes:

(a) No data available for Bangladesh, the Gambia, Guyana, Malawi, Mozambique, Nigeria, Sierra Leone and Togo
(b) No data available for Angola, Botswana, Grenada, PNG, Vanuatu or Western Samoa.

Source: ITU and Internet Society

1.6 Aspects of "Access"

I suggest that there are three aspects to the term **access.** One is the physical proximity to the technologies, or connectivity - a case of 'you cannot teach them if you cannot reach them'. Then even once women are ideally located to the technologies, they may not be able to use them because they do have the capacity. This implies that women need to be encouraged and trained to use, and to adapt, ICTs for their own purposes - or in the case of telephone and radio use they need to be able to afford to own the technology. The third aspect is about access to affect content - which suggests that women are not just receivers of information and knowledge, but are agents of influence and can help change the content delivered by the technologies to make it more culturally or otherwise relevant.

In this report, most of the statistical evidence is only available for the first aspect of access, i.e. connectivity. There are a few anecdotal examples of how women's capacities to use or adapt the technologies are being enhanced. I was not able to find evaluations of women's access to designing course content and left this aspect out altogether.

2 Profile and Growth Trends of ICTs Available for Education Delivery in Africa

There can be no question that the education sector is one of the potentially most important beneficiaries of ICTs. The whole area of application of interactive technologies to education, however, is relatively new and still at an experimental/ developmental stage. As such, it is difficult to draw any distinctive conclusions or evidence on the growth trends of ICTs in distance education other then to note their growing popularity and adaptability for use in different contexts. It is also evident that where there is research on the use of ICTs in distance education, very little exists on the specific needs or interests of women. COL's initiatives in this area therefore, are timely.

The U.S. National Centre for Education Statistics has just released a major survey on Distance Learning in Higher Education in the USA in which it was recorded that 57% of distance education was delivered by two-way interactive video, and 52% by one-way pre-recorded video. Only about 25% of the institutions used two-way audio with one way video, and computer-based technologies other than two-way on-line interactions (e.g. the Internet). Three quarters of the institutions surveyed reported that they were planning to offer distance education courses with increased use of computer based technologies in the next three years[10]. This is of relevance to this report because even in North America, where the telecommunications infrastructure "backbone" is well established and extensive, ICTs are still the relatively unexplored phenomena in distance education delivery.

In Africa more than 200 million adults are illiterate (44% of the adult population) and the gross enrolment figures in sub-Saharan Africa are 73.1% for primary level, 23.1% for secondary and 3.3% for tertiary level education. There are also increasing numbers of drop outs and high unemployment figures among educated youth. Furthermore, the fast-increasing enrolment during the '70s and '80s has resulted in ongoing excessive pressures on school systems through increased need for training and re-training of teachers, for more schools, for adaptation of curricula, for more textbooks and learning materials and for improved communications and administration systems.[11]

The spread of the Internet in African formal and informal education needs to be considered within the context of the development of the Internet on the continent as a whole. That inevitably raises the

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[10] "Distance Education in Higher Education Institutions" by the US Department of Education. 100 page PDF file. Available at: http://nces.ed.gov/pubs98/distance/index.html

[11] Berg, D & Vogelaar, J: The Need For A New Perspective: Creating Learning Networks for African Teachers, Change, Professional Development and ICTs 1997

subject of telecommunications infrastructure, because Internet traffic almost always travels down ordinary telephone lines, usually those of the public telephone network. This goes some way to explaining why less than one percent of the world's Internet traffic currently reaches Africa: the telephone network barely exists. Compare the UK (with 53 telephone connections per 100 inhabitants), on the one hand to Zimbabwe (1.22) and Ghana (0.3), on the other.

Not all Internet traffic travels via the public telephone network. Very busy routes are served by lines with very large throughput capacity. These lines are dedicated solely to Internet traffic and are usually leased from the public network. But, at the time of writing, these "backbones" of the Internet are only established in South Africa. Of the approximately 1 million Internet users in Africa, 700,000 live in South Africa, or put another way, internet use in South Africa is about 1 in 65 compared with 1 in 5000 for the rest of the continent.[12]

Electronic mail is gaining popularity across the continent, mainly because when it does work, it is more efficient and less expensive than all other modes of telecommunications. According to a South African magazine <u>Business Day</u> [13], a profile of Internet users in South Africa shows that the percentage of female users has increased from 16% in 1997 to 19% this year. Having said that, however, the establishment of internet links, in even the major universities in the rest of the continent, is still very basic. In Makerere University for instance, students are required to pay a contribution fee towards using the internet - an hour's worth of surfing cost approximately US$6.00 (1997). The only way students can afford this is to group together around a computer screen and share the costs. (see Annex II). There is no evidence that this necessarily works against women students, but it must work against students who cannot afford to subsidise the service.

There are now a number of projects underway throughout Africa to revitalise higher education, notable amongst these are those centred on connecting institutions to the Internet and to the African Virtual University (AVU). The AVU began its pilot phase in July 1997, with limited broadcasts being made from participating institutions in North America and Europe via satellite to partner institutions in Africa. A small number of courses were selected for the trial and subject content was agreed upon by the participating African institutions.

"At Makerere University in Uganda, AVU started out by providing courses in Physics, Electrical Engineering, Mathematics and Business Studies. In Electrical Engineering, the course offered was Electric Circuits to First Year students (Semester1, 1997/98). The course involved receiving lectures by satellite while a facilitator helped locally, as well as complemented the course to meet the standards of the Electric Circuits offered by the Department. The class comprised of about 15 girls out of total of 52 students. Comments obtained from the local facilitator are that on the whole the course was good, however, the books provided by the AVU project were not enough to adequately cover all students. The course itself was gender neutral[14] ".

In the next two years, the merging of technologies is likely to see live and pre-recorded broadcasts going directly into lecturing facilities across Africa. Students would be able to have audio

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[12]   Paul West. Report on selected technologies, April 1998 http://pgw.org/str

[13]   Business Day, 30 April, 1998

[14]   E-mail correspondence from Dorothy Kabagaju Okello, lecturer, Department of Electrical
         Engineering, Faculty of Technology Makerere University, Kampala, Ugandadotama@mukla.ac.ug.
         June 22nd, 1998. Dr Okello had requested some additional information from the director of AVU -
         not yet available at time of writing this report. The director is Jessica Aguti and her email address is
         avumuk@imul.com.

interaction contact with lecturers and fellow students both in their institutions and elsewhere. If students are unable to attend a lecture, they will be able to view the same lecture on a "video on demand" basis at their institution's computer laboratory facilities. Institutions across Africa are rapidly gaining numbers of computer laboratories with new Pentium equipment and connection to the Internet sponsored by international agencies.[15]

Uses of radio

At the other end of the technology spectrum, wind-up radios which require no electricity or batteries are bring used in Eritrea for mass education. Thirty seconds of hand-winding activates a spring that drives a generator to provide electricity for one hour of radio AM, FM or shortwave. The radios are distributed to formal educational "listening centres" to provide distance learning and information for millions of people through a new adult education radio channel.[16]

Satellite radio is an efficient means to improving distance education access in remote parts of Africa where other means of communications are limited. Currently most radio stations need expensive terrestrial equipment to reach a broadcast range of only 1000 miles. Digital radios are being developed to receive information directly from the satellite with the same quality and variety of broadcasts in both rural and urban areas and can cover an area of 14 million square km.[17]

The RADIO PROJECT aims at educating both adults and children of the rural population through the distance education technique using the Clockwork Radio. The Clockwork Radio operates without electricity or dry cell. It is, to date, the most effective and rural-friendly device invented. It functions by winding up a spring device which then activates an electric field that receives radio signals. The radio is being manufactured in South Africa. Since rural Ghana is without electricity, the clockwork radio comes in handy to provide education and entertainment. The facility also functions continuously without replacement, maintenance or regular replacement of battery during its life cycle. The project has negotiated to buy FM time (and will eventually install a dedicated FM station) to broadcast English language lessons to pupils and students of rural Ghana. The children are also encouraged to tune in to BBC English programmes when at home.[18]

3   Gender Differences in Access to ICTs, Reasons and Short Term Trends

Understanding the gendered nature of the social, economic, policy and technology systems which frame opportunities for women is key to assessing and promoting women's access to and use of ICTs. Women's needs for information are often influenced by their gendered roles and responsibilities, which in turn affects their use of and response to ICTs.

In the education sector, women tend to have less access to education and training, and those who do continue in school tend to keep to socially accepted or peer-group non-technological streams - all this has long term implications for continued gender differences in access to and use of ICTs.

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[15]   Paul West, Centre for Lifelong Learning: Report on Selected Technologies, October 1997

[16]   CIDA: Gender Equity, telecommunication development and the ITU. Paper submitted to the International Telecommunication Union WTDC 1998

[17]   WorldSpace Foundation - conversation with Lisa Slifer, Director of International Programs, June 1998 and joint report with COL: Opening New Frontiers for Learning: International Conference on Technology and Distance Education, April 1997

[18]   Rural Schools: Distance Education through Radio. Paper presented at the Ghana Computer Literacy and Distance Education Conference by Professor Kwesi A. Andam. May 1998

In most African societies, women's places are markedly distinct from that of men in almost all aspects of life. The perceptions of women's abilities, roles and needs are strongly held, defining the boundaries of both what women are expected to do by their communities and societies and what women expect of themselves - this has profound implications for the education prospects for girls and women right up the education chain.

Social norms continue to be the key factor for gender disparity in education. In Ghana, for example, the percentage of primary school enrolment rate of boys is 80 as opposed to 67 for girls. Enrolment rates in Tanzania are much higher at primary level at 82% and girls actually outnumber boys - the gap arises, however, at secondary level and up, where places become scarcer and the drop out rate of teenage girls is high.

Since personal ownership of ICTs for the vast majority of African women is not feasible in the immediate future, where and how they can gain access to ICTs is central. ICT access for women in Africa depends almost entirely on where the technologies are located, while the most efficient and beneficial use of ICTs is closely connected to the kind of information produced and distributed, i.e. information that directly supports women's activities and responsibilities. This includes institutional, sectional and geographical contexts.

Currently, it is primarily middle-class and professional women who use ICTs. In an ongoing ECA/IDRC research study, the gender distribution of mail users is confirmed to be predominantly male. The study suggests that women users make up 12% of total users in Senegal, 14% in Ethiopia and 31% in Uganda. In the case of Ethiopia, the proportion of women users is 20.5% among expatriates and only 9.52% among nationals.[19]

In order to facilitate access for women from other classes and sectors, the indications from this survey are that ICTs will need to be located in local institutions to which women have open and equal access, such as health centres, women's NGOs, women's employment centres, libraries, women's studies departments and institutes, rural credit and resource centres and perhaps even churches. The location in these types of contexts also pertains to the practical, specific kind of information that women require as a result of their time constraints.

These kinds of numbers are also reflected in the number of students who enrol for IT and IT-related courses. At the NITEL engineering and technical training centre in Nigeria, statistics obtained from the school for the period between 1981 and 1987 showed that the percentage of graduating females technologists never rose above 4%. In 1981 the percentage of female graduates was 1.3%, in 1985 it was 1.5%, in 1986 2.7% and it rose slightly to 3.9% in 1987. Significantly, however, over 98% of these females graduates are from the School of IT and commercials while only about 2% graduated from the four other schools viz; Power Engineering and maintenance, Transmission, Telegraph, and External line plants. Almost all 98% of these females opted strictly for the commercial training. No women trained as technicians in any of the departments.[20]

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[19]   ECA/IDRC ongoing research project: Electronic communications in African development: tracking their impact (1st phase) http://www.bellanet.org/partners/aisi

[20]   Female Enrolment For Information Technology Training In Nigeria by Oolajire Bosede Ajayi and Ahbor Dolly A. Ighoroje, University Of Benin, Benin City

4   Barriers to Women's Use of ICTs, Strategies to Redress These

Due to limited mobility, double workload, and lower education levels, women are traditionally not the first to gain access to, or to use and experiment with available technologies.[21] Cost-related issues also impede progress and discriminate against non-elite women who have less financial resources than men.   According to the 1997 APC Women's Networking Support Program survey [22] on women's experiences with electronic networking, lack of training and the cost of equipment to get connected rank highest as barriers to women getting on-line. The specific barriers women face vary regionally Southern participants, for example, listed poor infrastructure, recurring charges for E-mail or Internet usage and lack of appropriate training and support systems as the major barriers they encounter.

Women also identify lack of time and human resources as common barriers. As one woman wrote: "in some ways the Internet is a tool for those with lives of leisure." Another recurring theme relates to the issue of one computer and/or one modem per office which means that competition for existing technology becomes a limiting factor.

In order for women to benefit most from use of ICTs, and, therefore, for them to be able to use ICTs to the fullest, the following barriers to women's use of ICTs need to be addressed:

4.1   Access to the Technologies

Apart from the more obvious issue of Internet connectivity to established education institutions, alternative means for enabling women to access the existing information and communication infrastructure are being explored.

Community Access Points, telecentres or Multipurpose Information Centres are community focal points to empower historically disadvantaged communities to collect, analyse and share information related to their development needs, typically through the practice of development support. The centres are of particular importance to rural and peri-urban communities who can be empowered to begin communicating with their own environment. Relatively expensive equipment can also be made available to women and their communities through centres visited by students and mobile equipment such as computer-bus classrooms[23].

To ensure that these community centres will benefit women, the following factors need to be taken into account:

- availability of women support staff and trainers to help women use the technologies; and

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[21]   Gender and Telecommunications, an Agenda for Policy prepared by the United Nations University Institute for New Technologies UN/INTECH and the United Nations Development Fund for Women (UNIFEM) 1998

[22]   The Women's Networking Support Program of the Association for Progressive Communications (APC) 1997 Countries that participated in the survey were Cameroon, Nigeria, Senegal, Tanzania, Zimbabwe, Australia, India, Japan, Malaysia, Philippines, Croatia, Russia Federation, Ukraine, Austria, Belgium, France, Ireland, Italy, Netherlands, Switzerland, UK, Brazil, Colombia, Ecuador, Mexico, Peru, Uruguay, Jordon, Canada and the U.S.

[23]   UNESCO. Information and communication technologies in development: A UNESCO perspective. 1996

- establishment of information centres within or as part of community locations where women have other tasks or are taking advantage of other resources, such as health centres, libraries, women's NGOs, etc.

A Canadian initiative in Alberta North embraces the concept of "community access points" or CAPs. Their definition of a CAP is a physical location within a community intended to function as an educational centre for all adult learners in the community. Communities are designated as CAPs through a self-nomination and qualification process, which includes a requirement for a minimum of local financial investment. Following this designation, CAPs are eligible to receive a threshold level of equipment (e.g., multimedia PCs with scanners, cameras, desktop video-, audio- and audio graphics conferencing capability) along with a threshold level of telecom services. CAPs will be electronically connected to the seven NAPSIS[24] institutions and to each other so that a wide range of educational programs and services can be delivered to the community.

Plans are to designate several CAP sites each year, up to approximately 150 northern communities over the next few years. During 1996-97, 23 communities have been designated CAPs.[25] A further aspect to "physical access" is that of bridging the connected with the unconnected. From the experience of a number of African women's groups, multi-media is a 'de-facto' means to accessing, translating and distributing information using more traditional mediums of newsletters, radios, meetings and workshops. In the distance education sector, multimedia applications are being improved continuously, these include interactive videodisks (IVD), Compact Disks - Digital Audio (CD-DA), Photo CD, CD-ROM and CD-ROM XA, Digital Video Interactive (DVI), Compact Disk Interactive (CDI), Video Information Systems (VIS), electronic books and virtual reality. This range of technologies serves to show is that they can be adapted and developed to meet the specific needs of the intended beneficiaries and stakeholders.

4.2   General Literacy and Language

The higher rate of illiteracy among women means that ICT projects will need to be integrated with literacy education in many areas. This can be done by integrating literacy programmes with micro-credit and small business programmes for women. One example is INFOLIT, an information literacy initiative aiming to promote information literacy in the Western Cape Region of South Africa. At the moment it mainly serves higher education, but is extending its work to schools and communities to ensure that it develops a framework for lifelong learning for all, irrespective of gender and class.

We believe that in developing information infrastructures, we must ensure that people have the abilities to use information critically and to produce their own knowledge. Our primary activities are in the field of educating people in the use of the new ICTs and, most importantly, in the critical use of the raw materials of information. Our challenges have included how to extend information competencies to all subordinated groups so that the new skills are distributed among all people and do not remain only in the hands of an elite.[26]

The Internet has the potential to reduce illiteracy and step up agricultural productivity. Products like "Virtual farmer schools" could be developed, and be made accessible to women farmers with no

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[24]   Northern Alberta Post-Secondary Institutions Society

[25]   W. Leigh Hill, Alberta North: Enhancing Adult Distance Learning Opportunities

[26]   Correspondence with Cathy-Mae Karelse, INFOLIT, cmk@grove.uct.ac.za, April 1998

formal training in agricultural skills. This service would also link community telecentres in Africa and provide for South-South dissemination of indigenous knowledge, sharing of resources, ideas, experiences and success stories. Web pages of agricultural stakeholders could be published and this would avoid duplication of effort and enhance co-operation. Where rural women farmers are not able to directly harness the benefits of the Internet, NGOs, extension departments, rural women's associations and unions that serve them can take advantage of the technology and repackage critical information for the rural stakeholders.[27]

4.3   Cost

Cost issues of ICT access especially affect women. They are generally lower paid than men and often do not have control over their income. Their family responsibilities, such as health and education of children are the primary priorities for the income they do earn, so that often there is little left for other less immediate needs. Strategies to assist women include:

- training users in these areas and supporting them with equipment and installation subsidies;
- addressing the needs of those without computers through the establishment of shared community telecentres and promotion or support for wireless link alternatives where necessary, promotion of improved interfaces for the non-literate and less educated such as text to voice output, touch screens, webTV, and voice recognition; and
- improvements in existing technologies rather than entirely "new" technologies that can best be used to meet the needs of learners. For example, the new compressions and digital transmission technologies can give new life to "traditional" education television by permitting many more channels to be broadcast over a given bandwidth at a much lower cost per channel, and, in the case of direct-broadcast satellite, over a wider geographic area.

4.4   Technical Training

Compared to men, women generally have less access to training, and less opportunity to learn the skills necessary for participation, including basic technical skills, technical repair, and language training (for those whose first language is not English). Women are unacquainted with ICTs and uncomfortable with using them. They need to be supported in learning to work with, and to feel confident in their ability to use these technologies productively. Capacity building and training are important components in the promotion of information technologies amongst women. The lack of basic computer skills is the first step in discouraging women from using e-mail.

Training in ICTs for women will need to be gender-sensitive, and offered by women trainers as much as possible. In addition, relevant training guides, documentation and on-line tutorial software to support trainers have been insufficiently developed.

To facilitate the adoption of computer communication technologies, the APC survey respondents anticipated different kinds of training needs. In addition to basic training, many respondents called for customised training in information facilitation skills, building and maintaining Web sites or bulletin boards, HTML design and programming, setting up and running mailing lists, and exploring other (and new) Internet tools and resources. Technical training for trouble-shooting was also raised, particularly from women in the South. As one woman from Malaysia wrote:

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[27]   Hilda Munyua: Application of Information Communication Technologies in the Agricultural
        Sector in Africa: a Gender Perspective with Special Reference to Women. Paper presented to the UN
        Economic Commission for Africa, May 1998

"technical knowledge in computer technology so that we are capable of identifying computer problems and solving the basic ones minimally, rather than waiting for technicians."[28]

In January 1998, a Kenyan based women's organisation, ABANTU for Development, organised and ran a pilot Internet training workshop for women and their organisations in the East African region. The workshop proposed to draw upon the experience and knowledge of participants from organisations which were working with the new ICTs. Apart from enabling some twenty-five people to develop concrete strategies and action plans for using ICTs to strengthen their organisational capacities, the workshop provided a valuable forum for information workers to consult with each other and to share their particular experiences and expertise, to understand the policy implications of the liberalisation of that sector and to build their own skills in Internet use.[29]

The training programme was designed to provide Internet training within a specific policy context, it was not just about technical training in a vacuum, but attempted to strike a balance between gender analysis, policy training and technical training.

4.5   Institutional Barriers

The low level of computerisation in many organisations exacerbated by the high price of equipment relative to the available resources and the ensuing competition for access, affects women adversely. Scarcity of computers and the small base of skills also contributes to the low level of institutionalisation of much of the networking activity. E-mail and Internet access is usually limited to those with the most resources, very often to people with international projects and contacts.

4.6   Infrastructural Barriers

The high price of Internet services in most developing countries coupled with the absence of local dial access outside almost all of the capital cities severely limits access for the bulk of those with computers.

In some cases, because of saturated public telephone exchanges, the difficulty in obtaining large numbers of local telephone lines to maintain the desired ratio of 10-15 users per modem has limited the accessibility of ISPs during periods of peak demand as all the available dialling lines quickly become occupied. In the same fashion, users requiring telephone lines to access the Internet have faced problems in obtaining new telephone lines. That is why there is some argument to be made for alternatives to telephone lines. Some have suggested the equivalent of the existing community radio stations in Latin America, which are collective, independent and service-oriented. The model for the future community Internet could be based on radio more than on telephone.

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[28]   Association for Progressive Communications. Global Networking for Change: Experiences from the APC Women's Programme, 1997

[29]   ABANTU for Development, training workshop report, March1998

5 How and Why Women are Using ICTs, with Particular Reference to Electronic Communications

5.1 What Existing Research Shows

According to the APC surveys' initial findings, women are increasingly active in using electronic communications, and many tools such as E-mail have become a routine part of their day-to-day communications activity. Increasingly, women are experimenting with on-line conferences, mailing lists and web sites. At the same time, the survey showed that women continue to face barriers in using the information superhighway, such as lack of training and the high cost of equipment and, in some places, getting connected.

Networking has been recognised by female scholars as a tool for women's empowerment, and women have taken to the Net to create a "cyberspace of their own". In many places, women writers, editors, news directors and lobbyists, are not only surfing the Net, but have become active in establishing numerous WWW sites of special interest to women. Women's sites cover subjects such as gender and sexuality, feminism, women's health, women in computer science, engineering, women's studies, women in academia and women in industry.

Research carried out for the UN Division for the Advancement of Women found that women face two particular challenges in their use of computer networks. The first is to master access tools so they can make the best use of ICTs. The second is to use the new Internet publishing tools to develop their own publishing and media activities on the networks as paradigms of gender-sensitive media products.

5.2 Particular Advantages of ICT use for Women Distance Learners

Until the advent of telecommunications technologies, distance educators were hard pressed to provide for two-way real time interaction. With the development of synchronous (two-way, real time interactive technologies) such as audio teleconferencing, audio graphics conferencing and video conferencing it became possible to link learners and instructors who were geographically apart. Now, the asynchronous (time-delayed) feature of computer-mediated communications (CMC) offers more advantages in that the CMC class is open 24 hours a day to accommodate the time schedules of distance learners. Any technology that offers flexibility in location and in time allocation tends to be woman-friendly.

CMC systems provide an important medium for facilitating co-operative group work among distance learners. This seems to fit in well with the ways in which women learn and counter-act. As well, CMC systems arguably provide simple on-line training along with accessible and easy sources of trouble shooting. Through differentiation, specificity, and better learner and teacher control, ICTs should be able to accommodate the individual needs of most users.

5.3 Existing Data on ICTs Being used for Distance Education

Given that distance education is expected to take off with the advent of the new ICTs, it is surprising how little data there is on the trends and future of ICT use as a medium of education delivery. Most of the available detailed information on distance education development trends is from the U.S.[30] Even less available are statistics on how many women are accessing education programmes through ICTs.

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[30]   As in US Department of Education 1998 survey, op. cit

The Satellite Telecommunications Educational Programming (STEP) network[31], a division of Educational Service District 101 in Spokane, Washington was developed to provide equal learning opportunities for all students regardless of geographic location or educational resources. In 1990, STEP joined with state education agencies from Alaska, Idaho, Montana, Oregon, and Washington to form the Pacific Northwest Star Schools partnership to provide distance education services to the five-state region. Using federal funds, STEP enhances and expands distance learning in a region connected by culture and economy. The program offers telecast courses on a wide range of topics including foreign languages, mathematics, and science in support of federal policy initiatives. Distance education is provided to approximately 500 schools serving some 6,000 students in middle and high school in the five states. Participating schools receive start-up equipment (e.g., satellite dishes, computers, modems, and scanners) through federal funding. A predominant majority (90%) of the participating schools are located in rural areas. The average program site is approximately 80 miles from the nearest university or college. A survey conducted in 1994 indicated that a predominant majority (72%) of the STEP/Star students were in high school grades, and there were slightly more female students (57%) than male students (43%).

Certainly in developing countries there needs to be more gendered needs assessment and more statistics tracking the numbers of women learners coming through distance education programmes.

6.   Questions that Country Reports Need to Cover: National Issues[32]

6.1   Impact of ICTs on Distance Learning - a Gendered Status Report

- Is there any education or training provided through open/distance learning (ODL) in the country? If yes, generally at what levels, and provided by which institutions? Is the ODL education/training provided by publicly or privately owned institutions?
- What are the present national priorities in ODL, and the resulting implications for women in this regard? (levels of training, subject-areas, skill training, delivery modes, etc.)
- What might be the priorities with respect to the needs of women?
- Are the new ICTs being used for the delivery of, or for supplementary purposes for ODL? If for supplementary purposes, in approximately what proportion in terms of the overall delivery? If ICTs are being used, identify which ones.
- What local institutions have access to ICTs which might be applicable to ODL? (schools, clinics, chambers of commerce, churches, etc.) To what extent are these institutions supportive of ODL?
- Is there data available that indicates how many women distance learners register and complete programmes by ODL? Is there data available showing how many learners use ICTs in ODL and what proportion of these are women?

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[31]   Kim O. Yap. Distance Education in the Pacific Northwest: Program Benefits and Implementation Barriers, Northwest Regional Educational Laboratory (NWREL) 1997

[32]   The questions that follow are compiled from Cavanagh, C: Adult Learning, Media, Culture and New Information and Communication Technologies, CONFINTEA, Fifth International Conference on Adult Education, July 1997 and from a series of questions posed to the Global Knowledge in June 1997 by the Independent Committee on Women and Global Knowledge. They are not comprehensive but are meant to guide country report authors on the kinds of issues which might be relevant.

6.2 Widening Women's Access to ICTs for Education Purposes

- Are there barriers encountered by women and girls to the access of ICTs for ODL? If yes, what are these barriers? Have there been any initiatives or strategies put in place in an attempt to overcome these barriers? If yes, what are these?
- Does the increased availability and use of the new ICTs impact on women teachers, instructors, tutors, etc.? If yes, in what ways?

Recognising that access to computers remains beyond the means of certain areas and certain marginalised people:

- What are the best practices or examples where ICTs have been found to be useful, particularly in reaching out to women and to those who have difficulty accessing education?
- With particular regard to rural women and girls, what are the implications with respect to the increased used of ICTs to deliver education and training?

As the user-profile of the new technologies continues to be dominated by men and persons with higher education and income:

- Are there particular programmes that could be developed to support training of women in the use of the new ICTs?
- Are there ways to ensure that women are not further disadvantaged or marginalised?
- In identifying the socio-cultural constraints that prevent women from accessing education programmes, note:
    - special features of women students
    - affordability and time issues
    - physical location (in relation to educational institutions, etc.)
    - attitudes
    - skills and literacy

- Are there ways in which the increasing power, accessibility and decreasing costs of the technologies can assist women to overcome these constraints?
- If so, how can ODL programmes ensure that women's needs are being met, using the capacities of the new technologies?
- Can problems of illiteracy be overcome using these new information delivery systems? If yes, in what ways?

6.3 Training and Capacity Building

- Are there ways in which women's and girls' awareness of the potential benefits of ICTs and their confidence in their ability to use them can be increased?
- Do working women have the opportunity to enhance or upgrade their skills, knowledge and access to ICTs? If yes, in what positions, careers, professions, etc?
- Are there existing examples of initiatives to build capacity through ODL programmes, such as:
    - development of courses and programmes which use gender sensitive training methodologies, materials and language?
    - learner support that particularly encourages interaction between learners, and between learners and tutors?

- How can ICTs contribute to three chief concerns for women as defined by the Platform for Action of the Fourth UN World Conference on Women:
    - education and appropriate technical training;
    - school curricula that encourage girls to enter technology and science related areas; and
    - support of women organising and mobilising for empowerment?

6.4   *Is Public Policy Working for Women?*

- Is there an understanding of what national telecom policies might comprise? What are the implications of the liberalisation of the telecommunications sector?
- What are the national (telecommunication) policies in the education section? on distance education? How do these policies address the issue of technologies for ODL?
- Does public policy address gender differentials in the education sector? What are the opportunities offered by ICT policy to address gender differentials in the education sector?
- Do education and telecommunication policy makers collaborate to support women's use of ICTs? Do current policies enhance and build on each other's objectives? If not, how can this be changed?
- Are the national policy makers aware of the latest International Telecommunication Union resolutions on gender and development in the telecommunications sector?

7   Questions that Regional Meetings Need to Address: the Wider Issues

In addition to the questions covered in the national reports, regional issues should include:

7.1   *Infrastructural Framework*

- What is the current technological infrastructure that delivers education in the region?
- Does the current system integrate different levels of education, formal and non-formal, and different academic institutions? If not, why not?
- Which is the most Internet-connected country in the region, which is the least? What bearing, if any, does this have on access issues for women?

7.2   *Regional Integration*

- How are distance education projects co-ordinated at the regional level?
- What mechanisms are in place to ensure circulation of existing country studies and research to provide more detailed information for determining distance learning needs and strategies in the region?

7.3   *Potential of ICTs in the Region*

- What proportion of current distance education programme content is developed within the region? What proportion is developed outside the region?
- What kind of partnerships can be established between educational institutions to support the evolution of these new technologies?
- Has there been any evaluation of the successes, failures and effectiveness of general distance learning initiatives in the region? How might ICTs build on current successes through extending reach?
- What are the key differences between countries in the region, in terms of need for distance education programmes, particular needs of women, rural and urban differences, etc? How might regional distance education programmes bridge these differences?

8   Some Key Web Site References

Distance Education Clearinghouse   http://www.uwex.edu/disted/home.html
Distance Learning Resource Network   http://www.wested.org/tie/dlrn
The Southern African Institute for Distance Education http://www.saide.org.za
Linkages with African schools   http://members.xoom.com/kmgraduw

What did the Fourth World Conference on Women say about electronic networking? FWCW Secretariat/ Division for the Advancement of Women: http://www.un.org/womenwatch/daw

IDRC - ongoing project Integration de la dimension genre dans la stratégie ACACIA Project 978152 (065202)

IDRC ongoing project: Utilisation and appropriation of Information and Communication Technologies by popular organisations in Senegal. Project 978151 (065198)

The NATIONAL ASSOCIATION OF DISTANCE EDUCATION ORGANISATIONS OF SOUTH AFRICA is running a project to gather information for a baseline study of the use of communication media and technologies for distance and open learning. The project will examine:

1.   Status of the use of postal and telecommunications media and technologies for open and distance education in South Africa institutions. This will include information on:

    1.1   Organisational status: the number of students and courses, the communication requirements, and current organisational capacity for the use of media and technology for administration; for communicating with students and educators, communicating with other institutions, and with the public.

    1.2   Past, current, and if possible three-year projected use, particularly for communication with and between students and educators. It will also include assessments of the usefulness, problems, costs, and particular strengths of various media and technologies, and strategies to find the best solutions for specific contexts of use for different institutions and programmes.

2.   Aggregated trends and requirements for distance and open learning, and recommendations on policies and strategies that would enable open and distance education to flourish in South Africa.

References and Further Reading

Association for Progressive Communications. Global Networking for Change: Experiences from the Women's Programme, 1997

Berg, David and Vogelaar Jeannette. *The Need For A New Perspective: Creating Learning Networks for African Teachers, Change, Professional Development and ICTs*. Paper presented at the conference: Capacity Building for Information Technologies in Education in Developing Countries' (CapBIT) (25-29 August 1997, Harare, Zimbabwe)

Blumenstyk, Goldie.   *A feminist scholar questions how women fare in distance education*. Chronicle of Higher Education v44, n10, Oct 31, 1997

Bojana, Boh. Interactive Educational Technologies in Higher Education ESP Discussion Paper Series, Education and Social Policy Department, The World Bank 1994

Bray, C. *Women's studies at a distance: experiences of students and tutor*. Canadian journal of university continuing education. Vol. 14 (2), 1988. p. 37-49.

Brunner, C. Gender and distance learning. New York, NY: Centre for Technology in Education, 1992.

Byron, I. and Gagliardi, R. *Communities and the Information Society: The Role of Information and Communication Technologies in Education*, UNESCO: International Bureau of Education.

Cavanagh, C.   *Adult Learning, Media, Culture and New Information and Communication Technologies* CONFINTEA, Fifth International Conference on Adult Education, July 1997

Chale, Egino M. & Michaud Pierre (Open University of Tanzania and University of Ottawa) *Distance Learning for Change in Africa: A Case Study of Senegal and Kenya*. Policy and Research Prospects for the International Development Research Centre (IDRC), February, 1997

CIDA: Gender Equity, telecommunication development and the ITU. Paper submitted to the International Telecommunication Union WTDC 1998

Cole, A. et al. *Information technology and gender: Problems and proposals* Gender and Education, vol. 6,   no. 1, 1994

ECA/IDRC ongoing research project: *Electronic communications in African development: tracking their impact* (1st phase) http://www.bellanet.org/partners/aisi

Greenstein, Ran. *Narrative report on ICT and Education*. Education Policy Unit, University of the Witwatersrand 1997

Hopkins, Annis H. *Women's studies on television? Its time for distance learning* (women's studies and new technologies) NWSA Journal v8, n2 Summer, 1996

International Telecommunications Union: *World Telecommunication Development Report* 1996/97: Trade in Telecommunications, 1997.

International Telecommunication Union, Telecommunication Development Bureau: World Telecommunication Development Conference (WTDC 1998) - Proposal for the adoption of a resolution addressing gender and telecommunications policy in developing countries. March 1998

Mitter, S and Bastos, M. (Eds) *"Europe and the Developing World in the Globalised Information Economy: Employment and Distance Education"* Routledge, (to be published) London February, l999.

NADEOSA *Workshop on Distance Education in Further Education and Training* held at the South African College for Teacher Education (SACTE) August 1997.

O'Rourke, J and Schachter, L. *New learning technologies: Promises and prospects for women: a discussion paper*. Toronto, ON : Canadian Congress for Learning Opportunities for Women, 1997.

Rao, Madanmohan. *Education and research in the Virtual University: The Internet Challenge for DC's*. Information Technology in Developing Countries, Newsletter of IFIP Working Group 9.4 and Commonwealth Network for Information Technology, Vol 7 No. 1 January 1997

Reinen, I. J. and Plomp, T. *"Some gender issues in educational computer use: results of an international comparative survey",* Computers and education, vol. 20, no. 4., 1993

Rose, Ellen Cronan. *"This class meets in cyberspace": women's studies via distance education*. Feminist Teacher v9, n2, Fall-Winter, 1995

Sloper, D.W. *Meeting the needs of overseas postgraduate women students through flexible distance education.* Distance education. Vol.11 (2), 1990, p. 266-86

UNESCO. *Information and communication technologies in development*: A UNESCO perspective. 1996

UNESCO. *Towards Open Learning Communities: Reflections on opportunities past and present.* Concept Paper: Learning without frontiers. http://unesco.uneb.edu/educprog/lwf

United Nations Division for the Advancement of Women, *'Women and the Information Revolution"* Women 2000 Oct 1996, http://www.un.org/dpcsd/daw/w2cont.htm

US Department of Education. *Distance Education in Higher Education Institutions*. Available at: http://nces.ed.gov/pubs98/distance/index.html

Webster, J. Shaping Women's Work: *Gender, Employment and Information Technology*, London: Longman, 1996

Women's Environment and Development Organisation: *Mapping Progress: Assessing Implementation of the Beijing Platform,* March 1998

Synopses of the Country Reports

The country papers provided a common basis for the subsequent identification of barriers, and so, as much as possible, time for discussion, clarification and elaboration was provided after each report. A brief synopsis of each report is provided below. The quality of the papers was such that The Commonwealth of Learning agreed to publish the full papers separately.

Botswana

Ms. Obonye P. Mphinyane, an open and distance learning consultant, and Ms. Judith W. Kamau, head of the University of Botswana's Distance Education Unit, Centre for Continuing Education, co-authored the country report for Botswana.

Background

Botswana is located in southern Africa, just north of South Africa, and has been independent since 1966. A land-locked country with a land area of 585,370 square kilometres, it is predominantly flat or gently rolling tableland with the Kalahari Desert in the southwest. Approximately 46% is under permanent pasture but only 1% is arable. Subsistence farming and cattle rearing are the main occupations. The population is concentrated in the eastern part of the country. Within the population of 1.46 million, 51% are female and 42% are under 15 years of age (1999). Of those over 15 years of age, 70% are literate; that is, 80% of males and 60% of females can read and write (1995).

The telephone system is sparse and mainly confined to urban areas. There are seven AM, 15 FM, and five short wave radio stations (1998) but no television stations (1997). Reception is poor in many areas. There are six privately owned newspapers and one government paper, but their circulation is mainly confined to urban areas.

Primary education is recognised as the most important stage in the education system and the government encourages school enrolment, teacher training, and the development of junior secondary programmes. In 1997, 99% of primary students continued into junior secondary school programmes. The government plans to achieve 50% access to senior secondary schooling by 2003. The major pressure is for additional senior secondary places.

Distance Education Providers

Out-of-school education is considered an integral part of the education system in Botswana. Junior and secondary school courses, and now vocational and management courses, are provided through the Botswana College of Distance Education and Open Learning. The main medium is print, supported by radio broadcasts and face-to-face study at local centres. The University of Botswana's Centre for Continuing Education provides tertiary level programmes for adults. The distance education programmes are offered through print, with audio-cassettes and residential weekend seminars as additional supports. The Institute of Health Sciences, Ministry of Health, provides a distance education Nursing Diploma course, also through a combination of print, audio-cassette, and face-to-face sessions. Other professions – school administrators, teachers, and police officers – are also working to obtain and upgrade credentials using distance education.

Access to Information and Communications Technology

The high cost of information and communications technologies in developing countries is amplified in Botswana by a scattered population, which makes it difficult to provide resources. Electricity and telecommunications structures also need to be expanded so that every household in the country can access them. Poor telecommunications capabilities relate to severe capacity constraints, institutional inefficiency, inadequate maintenance of the telecommunications system, low levels of skills, the diversity of equipment in use in the region, and the lack of common operating standards and procedures among the networks of the region. The government plans to expand telecommunications in rural areas and provide telephone services that connect villages with a population of more than 250 people.

Employers in Botswana are demanding graduates who can find their way along the emerging superhighway of information and communications technology. A media-use survey carried out at the University of Botswana in 1999 discovered, however, that while many of the students surveyed have access to radio and cassette players, less than half have access to television, let alone a computer. None of the students surveyed had a computer at home, but almost a quarter of them had access to a computer at work. Although these results cannot be generalised to represent the entire country of Botswana, they are good indicators of the media that is currently available to students, both men and women either at home or at their places of work.

Ghana

Mrs. Agatha Gaisie-Nketsiah, Information Technology Manager of the Public Financial Management Reform Programme of the Ministry of Finance, prepared the country report for Ghana.

Background

Ghana, located in western Africa between Côte d'Ivoire and Togo, has been an independent nation since 1957. Bordering the Gulf of Guinea, it has a land area of 230,020 square kilometres. The country contains a series of low plains, with a heavily dissected plateau in the south and central area. About 22% of the country is under permanent pasture, 12% is arable, and 7% is planted with permanent crops. Although it has exports of gold, timber, and cocoa, subsistence agriculture employs 60% of the workforce. Ghana has a population of 18,887,626 (1999); 50% are female and 42% are under the age of 15. Of those over 15 years old, 65% are considered literate (76% male and 54% female).

Ghana's telephone system is growing but expensive. There are about 76 telephones for every thousand people (1999). On average, there is one television set for every 80 people (1998) and approximately 10 radios for every 35 people. In 1998, there were 35 radio stations (four AM and the remainder FM stations). There are about seven television stations, in addition to repeater stations that bring in satellite channels. The viewing audience was estimated to be about 1.9 million in 1997.

Ghana has a well-developed system of primary and secondary schools. Primary and middle school education is tuition free. School enrolment is almost 1.3 million primary students, and about 600,000 middle and senior secondary students.

Distance Education Providers

Ghana can trace distance education provision back to the early 1960s. Today, four of the five publicly funded universities provide open and distance learning programmes. The University of Ghana is a member of the African Virtual University. In addition, it is developing arts courses to be offered mainly in print with study centre support. The Kwame Nkrumah University of Science and Technology is also a member of the African Virtual University. It is developing print and resource centre-based programming for a Bachelor of Science in Building Technology. The University College of Education also provides a distance learning programme to diploma students to upgrade their qualifications to a Bachelor of Education degree. The University of Cape Coast is another member of the African Virtual University but has not yet developed open and distance learning programmes of its own. In addition, a private institution, Ghana College, has advertised UNISA-developed courses for secondary, senior-secondary, and baccalaureate students and there are other initiatives in the planning stages.

Access to Information and Communications Technology

Other open and distance learning programmes that use information and communications technologies are in the pipeline. UNESCO has employed a consultant in Ghana to look into the establishment of Internet cafés for the use of open and distance learning programmes. The Ghana government is also working with a Japanese non-governmental agency to support open and distance learning programmes with facilities for information and communications technology. An entrepreneur is working on open and distance learning using video, audio, and Internet facilities. Other private organisations link with colleges and universities outside Ghana and offer open and distance learning courses using the Internet and print media. Several courses are offered in various disciplines – accounting, marketing, and theology – although virtually no enrolment data is available on them.

Ghana's draft communications and distance education policies, yet to be ratified and implemented by Cabinet and the Parliament of Ghana, target 2005 as the year in which technology should be extended to reach all educational institutions. Planned improvement in the telecommunications infrastructure would increase the current tele-density of six lines per thousand people to a minimum of six lines per hundred people by 2005, covering all geographical locations and all public institutions, including universities, colleges, and schools.

Kenya

Dr. Magdallen N. Juma of Kenyatta University and the African Virtual University in Nairobi, prepared the country paper for Kenya.

Background

Kenya is located in east Africa between Tanzania and Somalia. It received its independence in 1963. Bordering the Indian Ocean, Kenya, with an area of 569,250 square kilometres, is composed of low plains that rise to the central highlands. To the west is a fertile plateau. About 3% of the land is arable and 1% is under permanent crops; pastureland covers 7% of the country's land area. About 75 to 80% of the population is involved in agriculture. Recent years have seen a rapid population growth. In 1996, Kenya's population was estimated to be 28,176,686. Forty-five percent are under 15 and, of those over 15 years of age, 78% are literate (1995). This literacy rate represents 86% of males and 70% of females. However, when urban and rural districts are compared, while the literacy rate in urban areas is as high as 89%, the percentage falls to 76% in

rural areas. In sum, many women, especially in rural areas, are illiterate. English and Kiswahili are the official languages, but many indigenous languages are spoken.

The telephone system is one of the top African systems but is still relatively sparse, especially in rural areas, at about 12 telephones for every thousand people. There are about 20 radio stations and six television stations in the country. Just over half of the urban Kenyan population has access to the radio but this falls to about 48% in rural areas. Very few households have television sets.

The education system includes eight years of primary, four years of secondary, and four years of university or vocational education. Primary education is free and is accessible to about 98% of the children between the ages six and 13. While more than five million students attend primary schools, a much smaller number are able to attend secondary schooling because of the lack of space. A similar press for space occurs at the tertiary level.

Distance Education Providers

Government ministries and public educational institutions, as well as churches and non-governmental agencies, offer open and distance learning. The College of Education and External Studies, University of Nairobi, offers upgrading and external degree programmes to teachers through a combination of print, radio, and a three-week residential seminar. The African Virtual University is based at Kenyatta University. Funded by the World Bank, it involves partnerships with 28 universities in 16 African countries to provide greater access to higher education, especially in the areas of science and technology. Courses are broadcast via satellite from North American countries. It is hoped that participating universities can develop courses for offering among the partners.

A variety of institutions provide specific open and distance learning programmes. The African Medical Research Foundation offers some print-based courses to nurses and many audio programmes targeted at the general health practitioner. The Kenya Institute of Special Education offers a print-based course following a two-month residency to in-service special education teachers. The Cooperative College of Kenya provides print-based materials on bookkeeping and management leading to a certificate for its members. The Christian Churches Association has designed curriculum materials for a distance education course in Christian Religious Education for primary school teachers. The Institute Africanne de Economie et Sociale Formation provides a combination of print materials, study groups, and residential workshops to adults in agricultural communities.

Access to Information and Communications Technology

Telkom Kenya Limited has a monopoly of providing telephone services in Kenya. The tele-density is about four lines per hundred people and in the rural areas tele-density is 0.16 lines per hundred people. The limited tele-density is also linked to the fact that a much smaller proportion of the population can afford their own telephone. Telephone installation in Kenya costs slightly more than US $100 and the monthly payment depends on the amount of usage.

Internet services in Kenya are fairly new with the first Internet company, African Regional Computing Centre, established in 1995. Since then, 24 more Internet private companies have started in Kenya, 16 of which have been licensed; and only a little more than half of these companies are operational. This has unleashed competition, which has brought down prices. For example, full Internet connection now costs between US $100 and US $166 per month, which is

still high when compared to Uganda and Tanzania, where costs run at US $50 per month, and Egypt and South Africa at US $20 per month.

The government has progressively reduced the tariff barriers in the information and technology sector. In the 2000 financial year, the import duty on computers and software is now 5%, down from the 40 to 45% rate in the early 1990s. Lower duty rates have reduced computer prices and enhanced affordability. Consequently, the number of personal computers in the country has increased. It is estimated that the country has 20,000 personal computers, a number that is estimated to increase at a rate of 10 to 15% per year.

Lesotho

Ms. Matitireng Fiee, Education Broadcasting Officer and Head of the Educational Broadcasting Section of the Lesotho Distance Training Centre, prepared the country report for Lesotho.

Background

Located in southern Africa, and surrounded by South Africa, Lesotho has been independent since 1966. Known as the Mountain Kingdom or the Kingdom in the Sky, Lesotho, with an area of 30,350 square kilometres, is a country of highlands, plateaus, and mountains. Approximately 66% of its land use is for pastureland and 10% is arable. Its economy is based on agriculture and most people depend on subsistence farming. Light manufacturing and remittances from labourers employed in South African mines (which supplement domestic incomes as much as 45%) are the other major employment sources.

Children under the age of 15 years old comprise about 41% of Lesotho's population. Of those over 15 years old, more than 70% are literate, with 81% of the men and only 62% of the females being able to read and write. The official languages are English and Sesotho, but Zulu and Xhosa are also spoken.

The telephone system is not well developed throughout the country. Telephones are readily available in towns but less so in rural areas. There are seven radio stations (three AM and four FM) and one government-owned television station. Radio is used widely for public broadcasts and non-formal education. Programmes that support primary, junior, and senior secondary schooling are also broadcast. However, electricity is only available in towns and batteries are expensive. In addition, the topography of high mountains precludes signal transmission and reception in some areas.

The school system is based on a partnership of government, churches, and parents. The government provides the facilities and teachers' salaries, the churches run the schools, and parents pay fees to help support their child's education. In 2000, the government introduced free primary education up to standard one. Many children do not go beyond six grades of primary schooling.

Distance Education Providers

The Lesotho Distance Teaching Centre was established by the International Extension College in 1974. It offers correspondence programmes to out-of-school youth and those seeking junior and senior secondary school qualifications. The centre also has some audio- and videocassettes that it uses in training workshops.

Access to Information and Communications Technology

In Lesotho, computers are not used in teaching and learning outside courses in computer studies. Most people in the country do not have access to computers. The National University of Lesotho is assisting the Ministry of Education in the development of a policy and programme of computer education for schools. The university is also mounting a computer education programme to prepare teachers for the promotion of computer literacy and the use of information and communications technology in Lesotho schools. The Internet is a rare facility in Lesotho, however. Most people know that it exists but have not observed how it operates.

Malawi

Ms. Mary Shawa of the Ministry of Gender, Youth, and Community Services prepared the country report for Malawi.

Background

Malawi, in southeastern Africa, stretches 118,484 square kilometres along the western shores of long, narrow Lake Nyasa (Lake Malawi), neighbouring Tanzania and Mozambique, with Zambia to the west. Malawi has a rural agrarian economy, based on tea, tobacco, and sugar crops. The country achieved independence in 1972.

Population growth and population density in Malawi rank among the highest in Africa. Malawi's population is estimated at 9.8 million people, of whom five million (51%) are women, and 4.6 million are children under the age of 14 years old, with 1.7 million (or 17% of the total population) under the age of five years old. In Malawi, life expectancy is about 36 years old for both men and women, and the mortality rate among children in 1998 was 134 deaths for every thousand live births. Women contribute 69% to agricultural production, 80% to food production, and 71% to casual labour in the estate sector.

Literacy levels among women are still very low, at 31% among women, compared to 58% among men. More than 600,000 illiterate women over the age of 12 years old have joined adult literacy classes and 560,000 have become literate. The enrolment ratio in adult literacy classes is 86% female. They tend to lapse into illiteracy after some time because of a lack of post-literacy books and communications technologies.

Malawi introduced free primary education in 1995, increasing enrolment from 1.9 million to 3.2 million. In an effort to reduce overcrowding, the government has recruited 20,000 new teachers (UNESCO, 1999). Although enrolment figures are equal for boys and girls, very few students who enrol at the primary level complete their education. Only 25% of the standard one enrolment reach standard eight, out of whom 40% are girls. Approximately 3% of the girls enter university, compared to 60% of the boys. Girls leave school for various reasons, including shortage of food (85%), poverty (66%), pregnancy (35%), and being orphaned (30%).

Malawi operates a fair system of open-wire lines, microwave radio relay links, and radio and telephone communications stations, with an estimated 43,000 working telephones in 1995. Ten AM and 17 FM radio stations are licensed in Malawi. There were about 1.011 million functioning radios in 1995 in the country.

Distance Education Providers

Students who cannot find a place in the secondary schools register in the Malawi College of Distance Education (MCDE) or enrol as external students at various local and foreign institutions. A publicly funded open and distance learning institution, MCDE runs 340 centres, enrolling 108,846 primary school leavers who did not make it to formal secondary school. In 1996, MCDE enrolled seven times as many students as the Oxford and Cambridge distance education courses, Aggrey Memorial School, as well as some secretarial, typing, and accounting schools. A majority of these centres serve the working class, while others meet the needs of school age students. In addition, a privately run adult education programme enrols 90,000 adults per year.

Access to Information and Communications Technology

Until 1997, the Malawi Posts and Telecommunications Corporation (MPTC) was the sole issuer of radio station licences but many people considered this anomalous since the MPTC had a vested interest as it runs other subsidiary companies like Malawi Television and an Internet firm. In 1997, the Malawi government, under pressure from its citizenry and donors, softened its stance on the operation of private radio stations by setting up a task force to work on issuing licences and allocating frequencies to applicants.

The information and communications technologies being used in education are mainly for secretarial and accounting courses. MCDE uses computers only for administration, not as part of the curricula. Local institutions, including government, private sector, and the offices of non-governmental organisations have information and communications technologies available, including computers, photocopies, calculators, and video. Unfortunately, they are not accessible to open and distance learning students.

Mozambique

Ms. Madelina Lino of the National Directorate of Secondary Schooling, Ministry of Education, prepared and presented the paper on Mozambique.

Background

Mozambique, with a total area of 799,380 square kilometres, is located in southern Africa between South Africa and Tanzania and neighbouring on Zimbabwe, Zambia, and Malawi. Bordering the Mozambique Channel, its coastal lowlands rise to uplands in the centre, which give way to high plateaus, and mountains in the west. One of the poorest countries in Africa, peace accords signed in 1992 have helped bring stability but the recent floods (February and March 2000) have resulted in diversion of funding to support the relief effort. More than 56% of the land is in meadow and pastureland with 4% under cultivation. Mozambique has been independent since 1974.

Mozambique's population was estimated at 16.5 million in 1997. About 46% are under 15 years old and more females than males are 15 to 64 years of age. The literacy rate is estimated at 40% for those over 14 years old, with more males (57.7%) than females (23.3%) being able to read and write. In the 1997 census, the female illiteracy rate was 74.1% while the male illiteracy rate was 44.6%. (In 1975 the illiteracy rate was 97%.) Portuguese is the official language but many indigenous languages are spoken.

In Mozambique, telephone coverage is fair, but while the telecommunications infrastructure for full Internet service is developing in the capital and major towns, rural access is often poor. Low population density and mountainous terrain further complicate network development. There are 29 AM and four FM radio stations and three television stations, one public (TVM) and two private (RTK and TVMiramar).

The education system is based on five phases: phase one is the first five years of primary education, phase two is the two years of upper primary schooling, phase three is the three years of secondary schooling, phase four is two years of pre-university schooling, and phase five is higher education. Primary education is free but secondary and post-secondary education are not. About 40% of the primary schools were destroyed in the conflicts before 1992. In 1997, about 2.8 million children enrolled in phase one schools. Of those, only about 190,000 will continue to phase two schools, and less than 10,000 will enrol in secondary schools, mainly because of the lack of sufficient schools. At the last census in 1997, female enrolment at the primary level was 57.7% while for males it was 75%. Female enrolment at the university level was only 0.2%.

Distance Education Providers

The Mozambique Ministry of Education provides two in-service teacher training programmes through open and distance learning. One is for primary teachers, and the other is for secondary English language teachers. The primary teachers' course is offered through print while the secondary teachers' course also uses residential classes. The Ministry of Education is also preparing programmes for secondary school students. One is to address the out-of-school secondary student while another, in cooperation with Telescola, is a television pilot programme to help prepare students for grade 10 mathematics and physics, and to explain the rationale for, and procedures involved, in doing accurate physics experiments. A second programme is being prepared.

In 1999, 'Radio Interactiva', a programme on mathematics for grade three students was piloted. It involved children from two urban schools and one rural school, and was coordinated by the Instituto de Aperfeiçoamento de Professores. The plan is to broadcast the programmes on radio in the next phase. Another initiative is the opening of the Instituto Superior Polytechnico e Universitario, a private high school that plans to include a School of the Arts using distance education.

Access to Information and Communications Technology

In Mozambique, information and communications technologies are accessible free-of-charge at some banks, embassies, and cultural centres. The majority of the population in general does not have access to information and communications technologies, neither to participate in training nor to make use of available facilities. The few technologies that exist are concentrated in the main urban centres, benefiting a few people who are financially favoured. Information and communications technology training is offered mainly by private enterprises and people pay expensive fees for it. Some computer rooms exist in some schools where courses are offered both for students and for the communities. Even then, these few technologies are not equally distributed among rural and urban areas, or among women and men.

Women face multiple barriers to the access to information and communications technologies, including cultural problems, with boys and men favoured with access to, and control of resources, while girls and women are overloaded with domestic chores to the point that they have no time available to train or to make use of information and communications technologies. Further, the

high rate of illiteracy among girls and women, and their poverty, constrain their access to education and to the few information and communications technologies available.

Some strategies proposed to be put in place in an attempt to overcome these barriers:

- Create a policy of information and communications technologies that considers gender issues
- Sensitise the community to the importance of education and training of girls and women
- Create facilities in the community to allow less overload of work for women
- Provide resource centres in rural and urban areas available for the population for training, to send and receive information, and to share experiences through information and communications technologies.

To reverse poverty in Mozambique, information and development services are needed. There is no policy for open and distance education or for the integration of information and communications technology, but efforts are being made to create them. The liberalisation of the telecommunications sector is necessary. Like other developing countries, Mozambique is faced with a great challenge to assimilate the changes of technologies because the very low literacy rate makes using the new technologies difficult. The need to expand the school network is implied so that more people have access to education.

Namibia

Ms. Frances van Wyk, Director of the Namibian College of Open Learning, prepared the country report for Namibia.

Background

Namibia is in southern Africa and gained its independence in 1990. Situated west of Botswana, on the South Atlantic Ocean between South Africa and Angola, it covers an area of 825,418 square kilometres. Much of it is high plateau with the Kalahari Desert in the eastern part of the country and the Namib Desert along the coast. Much of the land is under meadow and pasture with only 1% arable. While Namibia is a major exporter of minerals, more than 50% of the population depends on agriculture, mostly subsistence farming. Although the urban unemployment rate is about 35% (1997), the major migration flows are from the north to the capital region.

Namibia has a population of 1.7 million (July 1997) and, of those, 44% are under 15 years old. The majority of the population live in the northern part of the country. Literacy levels from the 1960s were estimated to be 38% overall for those over 15 years of age, with 54% of men and 31% of women able to read and write; no more recent figures are available. English is the official language, but Afrikaans is the common language for most of the population. German and various indigenous languages, especially Oshivambo, are also spoken.

Namibia had to develop a new school education system after independence. Based on 1991 census data, more than 40% of people aged six years old and older in the northern and eastern regions had no education and less than 20% had secondary education. At that time (1991–1993), 349,000 students were enrolled in primary schools, representing about 53% of all school age children. The basic Education Reform Programme has developed a new curriculum for students who now attend seven grades in the primary programme, three in junior secondary, and two in senior secondary. A learner-centred curriculum is being implemented.

Namibia has a good urban telecommunications service and has increased services to the northern and rural areas. A fully automated digital network is close to completion. There are four AM and 40 FM radio stations, and eight television stations.

Distance Education Providers

Open and distance learning programmes are available for non-formal education, secondary school completion, and a variety of professional degrees and certificates.

The requirements of out-of-school youth and adults who need to complete their secondary schooling are addressed through programmes developed and offered through the Namibian College of Open Education. The College also provides post-degree courses for those seeking further vocational or professional qualifications. In 1998, the out-of-school programme enrolled more than 20,000 learners who use either the print materials alone or a combination of print materials and face-to-face sessions.

Not only were there insufficient spaces for students who wished to go beyond primary education, but also many teachers' qualifications needed to be upgraded. The Basic Education Teacher's Diploma, the required certification for teaching, has been designed for open and distance learning, and it is offered through the four colleges of education. The design and pilot were completed in cooperation with the National Institute for Educational Development. The programme, which uses print materials, will be coordinated through the University of Namibia's Centre for External Studies. This centre offers two teaching qualifications which are being phased out and replaced with the Basic Education Teacher's Diploma, a Diploma in Education (African Languages), and three baccalaureate degrees, in Nursing, Education, and Business Administration. It has also implemented a bridging programme for students needing additional coursework in English and Mathematics before entering the university. These programmes are print based.

Similarly, the Polytechnic of Namibia's Centre for Open and Lifelong Learning provides post-secondary career education opportunities. It uses a combination of print and face-to-face sessions at regional centres in its two open and distance learning programmes that offer further certification at three levels in Public Administration and Police Science, and in its Bachelor of Technology (Nature Conservation). Other programmes in Financial Accounting and Personnel Management are being planned and it is likely that, eventually, degree level programmes will be available in these subjects. In 1997, the Polytechnic provided distance learning opportunities to approximately 1,580 students. (Global Distance Educationet, 1999)

The government of Namibia is gradually developing a network of open and distance learning centres. The plans are not only to have a centre in the major towns in all 13 regions, but also to set up subsidiary centres to supplement them. In addition, it was recognised that, despite a relatively high population density, in the northern part of the country the public infrastructure outside the regional centres is very limited and so additional centres will be placed in schools to enhance access to resources for groups of learners.

Most of these institutions have also worked with the Namibian Broadcasting Corporation, which provides about seven hours of programming weekly. In addition, a number of private sector providers offer a range of secondary education, certificate, and baccalaureate programmes. Some of these are based in Namibia while others work out of South Africa.

Access to Information and Communications Technology

The MBEC established a task force on information and communications technologies in July 1998 which made several recommendations to the MBEC in October 1999, including that provision be made in the curriculum for one period per week for all learners for information and communications technology, and that a unit within MBEC be established to be responsible for information and communications technologies on all levels of the Ministry, including schools and regional offices.

In 1996, the United Nations Development Project (UNDP) launched the Internet Initiative for Africa (I I A), the main purpose of which was to assist African countries, especially those without a national Internet gateway, to introduce or expand Internet services in the countries. Namibia, which already had fairly extensive Internet connectivity in the capital, Windhoek, had little or no Internet service in the rural areas, especially in the north, where most of the population lives. This project thus aims to improve Internet connectivity to rural Namibia by building on existing national initiatives.

The three-year project involves coordination of the public, private, and other sectors (including academic institutions, research institutes, and non-governmental organisations) to extend the existing national Internet network to Namibia. The project will enhance the Namibian National Information Infrastructure and will specifically foster Internet access in the country.

Senegal

Ms. Fatimata Sylla, Director General of Solutions 3+ in Dakar, presented the country report for Senegal.

Background

Located in western Africa between Guinea-Bissau and Mauritania and bordering the North Atlantic Ocean, Senegal has been independent since 1960. Covering 196,190 square kilometres, the country consists of gently rolling plains that rise gradually to foothills in the southeast. The lowlands tend to seasonal flooding, but 12% of the land is arable and 16% is under permanent pasture. There is internal migration to the cities and urban youth unemployment is about 40%.

The population is estimated to be 10,051,930 (July 1999), 51% are female, and 48% are under the age of 15 years. Of those over the age of 15, only 38% are literate (1997), with 43% of the men and 23% of the women being able to read and write (1995). French is the official language but Wolof and Pulaar are also spoken widely. Muslims made up 95% of the population.

Senegal's education system involves both primary and secondary education, but few schools exist in the rural areas. At the primary level, 72% of the boys and 57% of the girls attend school, with 20% of the boys and 12% of the girls in secondary schools. The illiteracy rate is 60% for those 15 to 19 years of age, and 65% for those 20 to 24 years of age (1995).

Senegal's telephone service, run by SONATEL (Société Nationale des Télècommunications du Senegal), is the national telecommunications carrier providing telephone services. It uses a combination of microwave, coaxial, and fibre-optic cable to provide a fairly sophisticated urban system and an adequate rural system throughout the country. As of April 2000, there are more than 12,000 tele-centres, 168,000 fixed telephone subscribers, and 100,000 mobile phones throughout Senegal. In 1996, Senegal obtained full Internet connectivity, creating a rapid growth

in Internet-based services with a bandwidth up to two megabytes and more than 10,000 Internet subscribers in eight private and public Internet service providers. There are eight AM, six FM, and one short-wave band radio stations. There is one television station.

Distance Education Providers

The availability of telecommunications technologies has encouraged the development of distance learning opportunities in both the public and the private sector. One of the public sector projects is focused on training trainers for sustainable development. A network of universities in six different North and South American and West African countries contribute expertise to help create training programmes employing distance education to encourage the involvement of women in development. Another project is targeted at developing literacy in local languages. A third project is involvement in the African Virtual University, which provides preparatory and university courses to students, especially in the sciences and technology. A similar initiative, the Francophone Virtual University, has been in development since 1997.

Within the private sector, the national telecommunications company has made its videoconferencing room available for educational programming and the Institut Superieur de Management (ISM), a local management institute, provides professional courses to its students who live in another city. The Multinational Institute of Telecommunications (École Superieure Multinationale de Télècommunications) uses videoconferencing to provide its students with access to the first two years of a baccalaureate degree and to graduate level courses from France and Switzerland. About 15 to 20 people have enrolled in these courses.

Access to Information and Communications Technology

The World Bank project, called World-Link, reached 10 secondary schools (one per region) equipped with computers and connected to the Internet. Many private schools, the two universities, and other training institutions have similar facilities, which are only for the use of teachers and their students.

Other non-governmental organisations, including GEEP, a study and training group for the population which has 22 sites in the country, and SIUP, the people's urban information system, open their doors to the whole community.

The chambers of commerce, hotels, hospitals, clinics, and laboratories in Senegal have computer equipment suitable for management purposes.

Swaziland

Dr. J. Thuli Nhlengetfwa and Ms. Stella Nkosi of the National Curriculum Centre of the Ministry of Education for Swaziland co-authored the country paper for Swaziland.

Background

Situated in southern Africa and bordered by Mozambique and South Africa, Swaziland has been an independent kingdom since 1968. With an area of 17,360 square kilometres, it is a land of mountains, hills, and plains. About 11% of the land is arable and 62% is meadowland and pasture. The majority of the population depends on subsistence farming and labour migration to supplement locally generated income. More than 22% of labour migrants are males 25 to 29 years of age.

Swaziland has a population of about one million (July 1996) of whom 49% are under 15, 52% are female, and 75% live in rural areas. More than 78% of those over 15 years of age are literate, with 78% of men and 76% of women being able to read and write. This figure increases each year because of the effects of the Universal Primary Education initiatives in subsidising educational materials and employing teachers. However, parents still have to pay tuition for all levels of education, which generally continues to disadvantage children of the poor, and orphans and girls in particular.

English and siSwati are the official languages but education is entirely in English after grade four. The Swaziland educational system involves seven years of primary education followed by five years of secondary school. All teachers have the minimum professional training qualifications. School enrolment from 1991 to 1993 was 186,000, indicating that most children received at least some primary education. However, many do not complete secondary education, often for economic or social reasons. In 1998, the number of students enrolled was 269,609 with increasing numbers in secondary schooling.

Swaziland has a small telephone network that is linked to South Africa. It has 13 radio stations (seven AM, six FM) and 10 television broadcast stations, many of which re-broadcast signals from South Africa.

Distance Education Providers

Open and distance learning in Swaziland is provided through various public agencies. The Sebenta National Institute, a non-profit government agency in operation since 1960, uses a combination of print materials and tutorials at local community centres to offer literacy and non-formal education opportunities to people throughout Swaziland. In January 2000, about 2,100 people were enrolled, with just more than 61% female, and the majority of those over 15 years old. Almost half the number of people attending the programmes are under the age of 15, indicating a continuing need for upper primary and secondary school programming.

The Emlalatini Development Centre (EDC) is a government agency that provides secondary education courses in preparation for the junior and 'O' level examinations. In 1998, 785 students were enrolled, 56% of whom were 15 to 20 years of age. EDC has set up six rural education centres and local part-time tutors are hired to assist students and run the study sessions. Each course has a series of workbooks and some local tutorial sessions, and learners pay tuition towards their learning materials and examination fees. In addition, a few programmes, mainly on examination study hints, are broadcast on local radio stations and those who have access to telephones can contact their tutors for assistance. The majority of students use the postal system.

The Institute of Distance Education of the University of Swaziland was set up in 1999 to help address the need for university education among secondary school graduates. It offers two baccalaureate programmes (Bachelor of Arts and Bachelor of Education), and three diploma programmes (in Commerce, Law, and French). The Institute prepares self-instructional print modules and provides some tutorial classes in campus facilities and at the regional centres.

The Ministry of Health and Social Welfare has undertaken a feasibility study to provide programmes for health care workers through open and distance learning. In particular, the Ministry plans to develop a collaborative network of overseas universities who could offer online courses to provide continuing education for health and social welfare professionals.

Access to Information and Communications Technology

Open and distance learning institutions in Swaziland are minimally exposed to utilising information and communications technology. One initiative taken by the Ministry of Health and Social Welfare in Swaziland in collaboration with the World Health Organisation is a proposal for the delivery of a distance education programme through an information and communications technology network. The network would incorporate all the open and distance learning institutions in Swaziland and benefit rural, urban, literate, and illiterate women. Information and communications technologies could be used to widely circulate HIV/AIDS information that is needed by the Southern African Development Cooperation (SADC) region for survival.

Swaziland is in one of the regions of the world hit worst by HIV/AIDS. An estimated 35% of the adult population is infected with the virus. Home- or hospital-bound women would benefit from open and distance learning institutions equipped with communications satellites and mobile libraries with television, computers, and radio programmes. These facilities could be set in rural education centres and in hospitals.

Tanzania

Mrs. Niwael Kilato and Ms. Illuminata J. M. Masenge, both resident tutors at the Institute of Adult Education, prepared the country report for Tanzania.

Background

The United Republic of Tanzania, which includes the island of Zanzibar, has been independent since 1964. It is located in eastern Africa, on the Indian Ocean between Kenya and Mozambique, and shares its border with Burundi, Rwanda, Uganda, Malawi, Zambia, and Zaire. Covering an area of 945,090 square kilometres, it rises from coastal plains in the east to a central plateau and to mountains in the northwest, which include Mount Kilimanjaro, the highest point in Africa. About 5% of the land is arable, while 40% is meadowland and pasture. Agriculture is the main occupation and source of income.

The population is approximately 30 million (1999). Almost 45% are 15 years old or younger and, of those over 15, 68% are literate, with 79% of men and 57% of women able to read and write Kiswahili, English, or Arabic (1995). Kiswahili is the official language, English is the language of instruction in secondary and post-secondary education, and Arabic is widely spoken in Zanzibar. Many indigenous languages are also spoken.

The Tanzanian education system involves six years of primary education and six years of secondary education, culminating in 'O' and 'A' level examinations. About 56% of eligible children attend primary school and the enrolment is about equal between girls and boys. However, only about 15% proceed to secondary schools and, due to the lack of public secondary schools, many girls are forced to attend less-effective private schools.

The telephone infrastructure is fair with a disproportionate number of telephones in the cities and towns. There are 12 AM and four FM radio stations, and two television stations.

Distance Education Providers

Tanzania has a history of foreign-owned enterprises offering secondary and post-secondary programmes in the country since the 1940s. After independence, the Cooperative College in

Moshi set up an extension education centre, the Field of Extension Education, to provide courses in various aspects of cooperative education to its members. It also offers diplomas and certificates to extension officers. Since 1995, in cooperation with the University of Leicester (United Kingdom), it offers a Master's of Arts in Cooperative Management. The college's programmes use a combination of print, radio programmes, and tutorials at local study centres.

The Distance Education Department of the Institute of Adult Education is a government agency mandated to offer secondary school, vocational, and non-formal education through print-based distance education. Over the years, more than 75,000 students have registered with the department but only 19% were women. However, 19% of the women and only 5% of the men have completed various courses and received certificates. In 1992, the government established the Open University of Tanzania to offer foundation courses, diplomas, certificates, and seven degree programmes (Bachelor of Arts, Bachelor of Science, Bachelor of Commerce, Bachelor of Laws, Bachelor of Arts, Bachelor of Commerce, or Bachelor of Science in Education) through open and distance learning. The Open University of Tanzania uses a combination of print, audio-cassettes, and local tutorial support. Only about 12% of its students are female. The Open University of Tanzania is also the site for the link with the African Virtual University, although students have to come to campus to access these courses.

Other open and distance learning providers include the South African Extension Unit, which provides a mainly print-based programme on local government to government councillors. The Health and Sanitation through Water Education programme in the Lake regions is a non-formal programme run by the Ministry of Health and the Continuing Education Institute of Sokoine University.

Access to Information and Communications Technology

Tanzania has tried to widen women's access to information and communications technologies but lacks the basic infrastructure of a reliable source of electricity. Not only is there inadequate electric power in about 90% of the country, but also the cost is high. The cost of electricity installation for residential and commercial houses ranges between US $1,200 and US $5,000, depending on the source of power. Women, who in the majority are living in abject poverty, can hardly afford the service.

As an alternative, the Umbiji village solar electrification project in Zanzibar is a model community-based institution with access to information and communications technologies.

Although quite a large number of institutions in the country have some kind of information and communications technologies available, including telephones and computers, access to the technologies in open and distance learning has been limited. It is estimated that Tanzania has only 15,000 actual Internet users. Exorbitant charges for the use of computers and telephones hinder the wide usage of the Internet. On average, a computer costs US $1,250, while the same computer would cost about US $625 in Dubai. Local Internet users are charged a little more than 25 cents per minute, while in North America people are often charged a fixed rate of US $10 per month or less. Internet users who are connected via the telephone are charged US $49 per month.

A communal centre on the Tanzania mainland, the Sengerema Multipurpose Community Tele-centre pilot project, provides computer and telecommunications equipment to enable the rural community to have access to telephone and other teleservices.

The African Virtual University, a project of the World Bank at the Open University of Tanzania, has advanced the educational use of electronic media and other technologies.

The Commission for Science and Technology has been promoting the use of the Internet in the country by conducting awareness courses, training individuals and offering consultancy services to various institutions. As well, the Africa On-Line Tanzania Company, launched in 1994, monitors the development of new technologies and adapts them for the African market. To some extent, they have offered a reliable Internet connection in the country. The company has also started to offer e-mail services through the post offices, which have a national network. Other Internet service providers operating in the country include Cyber Twiga, University of Dar-es-Salaam, Raha, Internet Africa, and Zantel.

Uganda

Ms. Dorothy Kabagaju Okello, lecturer in the Department of Electrical Engineering of the Faculty of Technology Makerere University at Kampala, prepared the country report for Uganda.

Background

Located in eastern Africa, west of Kenya, north of Tanzania, and east of Zaire, Uganda is a landlocked country of approximately 236,000 square kilometres. It is mostly a country of high plateaus that is rimmed by mountains. About 23% of the land is arable, 25% is meadow and pastureland, and 30% is wooded. About 80% of the population is involved in agriculture.

Uganda gained its independence in 1962 but then suffered a series of civil wars that ended with the election of a constitutional government in 1995. Half of the population of approximately 20 million are under 15 years of age. The literacy rate for those over 15 is about 62% (1995), with 74% of men and 53% (1999) of women able to read and write. The official language is English but Kiswahili and Luganda are widely spoken.

The Ugandan system of education is a four-tier model. Seven years of primary schooling and four years of secondary education for the high school certificate ('O' level), lead to two years of senior secondary school for the higher education certificate ('A' level), which, in turn, is mandatory for entrance to post-secondary education.

The continuing decades of unrest has had a negative effect on the education system. Schools fell into disrepair and instructional materials were scarce. Teachers were poorly trained and lacked adequate compensation. Parents were forced to finance primary education so that wide disparities based on available discretionary income were evident. In 1993, only 53% of school-age children were enrolled in school and over half left school before they obtained basic literacy skills. The government has been taking steps to rectify the rate of girls leaving school, which was higher than for boys. In 1996, the government announced that primary school attendance would be free to four children per family and enrolments rose from 2.7 million in 1996 to 5.2 million in 1997. The shortage of teachers and school spaces has resulted in strategies such as double-shifting, multi-grading, and community-based management.

The telephone system is rated fair and is more readily available in the capital and major towns. Digital equipment is confined to the major centres while others have older, less effective equipment. There are 13 AM radio stations and nine television broadcast stations.

Distance Education Providers

Three organisations are involved in open and distance learning. Makerere University has been offering open and distance learning programmes since 1967. It began by offering foundation courses for teachers who needed to upgrade their academic knowledge and for those unable to obtain or complete secondary schooling, as well as by offering courses for clerical workers. Now students can also take certificate programmes in business management and administration. The African Virtual University has centres at Makerere University, Uganda Polytechnic, and the Uganda Martyrs' University. Using satellite technology and videoconferencing, the AVU provides courses in computing, engineering, and science to university students. With the withdrawal of subsidies for courses in 2000, enrolment has fallen from 321 to 66 students. The Ugandan government is in the process of planning for the Open University of Uganda, which is to be opened in 2000.

Access to Information and Communications Technology

In Uganda, women and girls encounter barriers, which include a limited telecommunications infrastructure, to the access of information and communications technologies, particularly the new information and communications technologies such as email and the World Wide Web. As of August 1998, the telephone density of Uganda was 2.9 lines per thousand people. Uganda also faces a limited power supply. For instance, it is currently technically possible for all corners of Uganda to access email via a high frequency radio service provided by a local company – Bushnet – or even via satellite. However, many in the rural areas would still be restricted by the lack of electricity for the information and communications technology equipment, even if they were able to afford the equipment. In Uganda, an Internet service subscriber can expect to pay an average of US $65 per month in service fees, in addition to a telephone usage charge for the time they are online.

Liberalisation of the telecommunications sector has led to the introduction of other telecommunications providers such as CelTel Cellular and Mobile Telephone Network, which in turn has provided some areas with the chance to access better connections as well as to increase the service penetration. However, cost of access still remains a factor, particularly for the rural community.

Liberalisation has also led to a growth in the number of commercial and community-based radio stations. In addition to the national Radio Uganda, there are now fourteen new radio stations, of which four are based in Western Uganda (Voice of Toro, Radio West, Radio Maria, Greater Afrikan Radio), two in Northern Uganda (Radio Paidha, Radio Apac), one in Eastern Uganda (Voice of Teso), and the rest in the Central Region (which includes Kampala).

The increasing power and accessibility and the decreasing costs of information and communications technologies can assist women to overcome socio-cultural constraints in obtaining an education in the following ways:

- Using the radio stations to broadcast awareness campaigns about the benefits of education, as well as to broadcast educational programmes
- Working at one's own pace and therefore accommodating the multiple roles women have to play as home maker, field worker, and so on
- Setting up tele-centres, which allow the sharing of resources, and in turn, bring down the cost per person for access to information and communications technologies

Zambia

Dr. Mildred M. Nkolola-Wakumelo, Head of the Department of Literature and Language at the University of Zambia, prepared the country paper for Zambia.

Background

Zambia, a southern African country situated east of Angola, and west of Zimbabwe, Mozambique and Malawi, has been independent since 1964. A landlocked area of approximately 752,500 square kilometres, Zambia is a high plateau rising occasionally to hills and mountains. About 7% of the land is arable and almost half (47%) is under meadow and pastureland. In the past, copper mining has been important to the economy but the decrease in world prices, combined with droughts, has caused a severe depression in Zambia's economy.

Zambia has a population of about nine million (1996), almost half of whom are under 15 years of age. Of those older than 14 years of age, 78% are literate (1995), with 86% of men and 71% of women able to read and write. English is the official language but many indigenous languages are spoken.

Zambia has one of the best telecommunications systems in sub-Saharan Africa. Most larger towns and cities are connected with high-speed microwave relay stations. Of the16 radio stations, 11 broadcast on the AM band, and there are nine television stations.

The Zambian education system involves six years of primary, three years of junior secondary, and three years of senior secondary schooling, culminating in the school certificate examination in year 12. Many students are unable to complete the programme, however. Primary schools have room for only 83% of those eligible, junior secondary for 34%, and senior secondary has room for only 14% of the eligible students. While the enrolment of girls is almost equal that of boys in grade one, it decreases rapidly in every subsequent grade. The government is in the process of implementing a plan to ensure that all students have access to basic education to grade nine.

Distance Education Providers

Open and distance learning is provided in primary, secondary, non-formal, informal, and post-secondary education. The National Correspondence College, a government agency, was initially set up to help secondary teachers obtain the necessary academic qualifications and to provide secondary education to adults who wished to obtain post-secondary certificates. In 1972, the National Correspondence College began offering secondary school distance education courses to successful primary students who were unable to obtain places in secondary schools. It now also offers open primary education to students who are unable to attend school. In 1998, more than 20,000 students were enrolled in open secondary programmes, an increase of 3,000 from 1995. In order to implement the government's latest initiative of expanding access to basic education, more than 3,000 teachers will need to receive training. The plan is to use the existing infrastructure of computers in regional teacher resource centres and teachers' colleges to provide the Primary Teacher Training Diploma. Plans are also underway to bring back the educational radio broadcasts from the Ministry's Educational Broadcasting Service, which were used to supplement the primary and secondary school open and distance learning course materials but were discontinued in the 1990s.

The Zambia Cooperative College, like its counterparts in other countries, offers correspondence courses in topics associated with cooperative education. More than 100,000 people have participated since 1980. Although the college uses print materials supported by radio broadcasts, the Ministry of Agriculture, Food, and Fisheries also uses radio broadcasts to provide agricultural extension information through its Radio Farm Fora. In addition, the National Broadcasting Corporation allocates both radio and television time to non-formal education programmes, and the Zambia Information Services employs magazines and newspapers to disseminate news and information, and to encourage non-formal reading.

The University of Zambia has been offering diploma and degree programmes through open and distance learning since 1966. Students attend a one-month residential school at the beginning of the year and then receive the rest of their education through self-instructional materials. In the 1997–1998 school year, 371 students enrolled in these programmes. The Department of Technical and Vocational training has been negotiating to make open and distance learning technical and vocational programmes available to Zambians through the University of South Africa (UNISA), the Technikon South Africa and the Azalia College of Further Education (South Africa).

Access to Information and Communications Technology

Although the National Correspondence College was connected to the Internet in 1995, information technology has not been utilised to enhance distance education at the college because the target group does not have Internet facilities. Whereas most Zambians, whether in the urban and rural areas, have access to a radio because of the available infrastructure and affordability of the service, the majority of Zambians do not have access to television, telephones, faxes, or computers because the infrastructure for the provision of such services is very restricted. Not all areas of the country are connected to telecommunications lines or can receive radio and television transmissions. In fact, some border areas of the country find it easier to access foreign radio and television transmissions than local transmissions. Similarly, only a few educated or very rich Zambians have access to modern information and communications technologies. In Zambia, a two-page fax message to Canada can cost K 20,000 (US $10) while a trunk call (long-distance telephone call) is K 1,500 (US $1.15) per minute, both of which are a lot of money for the average Zambian worker.

The major telecommunications provider is the government-owned Zambia Telecommunications Limited (ZAMTEL), which until 1991 had the monopoly of telecommunications operations in Zambia. In 1991, private participation was encouraged and a number of service providers came on the market. Zambia Telecommunications Corporation is now competing with other private service providers including Zamnet, Postnet, and Coppernet, among others. Unfortunately, most of the private service providers that have come into the telecommunications sector have concentrated on the large urban areas. They have not targeted marginalised rural populations.

The liberalisation of the industry has also brought about other positive changes in telecommunications provision. The country has witnessed the opening up of several other television and radio broadcasting stations other than the government owned Zambia National Broadcasting Corporation.

Zimbabwe

Ms. Susan Manhando-Makore, Head of Media Studies for Zimbabwe Open University, prepared the country paper for Zimbabwe.

Background

Located in southern Afric a, Zimbabwe is bordered on the east by Mozambique, on the northwest by Zambia, on the southwest by Botswana, and in the south by South Africa. It obtained independence in 1980. An area of roughly 390,000 square kilometres, Zimbabwe is a country of high plateaus that rise in the centre to a higher plateau and to mountains in the east. About 7% of the land is arable, about 13% is pasture and meadow, and almost 50% is forest and woodland. More than 70% of the people are employed in agriculture and the unemployment rate is more than 45% (1994).

Zimbabwe has a population of roughly 11.3 million people (1996) and about 44% are less than 15 years old. Of those over 14, 85% are literate (1995), with 90% of men and 80% of women being able to read and write. English is the official language but Shona and SiNdebele are spoken widely. Many other indigenous languages are also spoken.

Since 1980, the government has been promoting a policy of compulsory primary schooling to grade seven, as well as encouraging parents to send their children to the five-year secondary education programme. A programme of early childhood school involvement was quite successful in increasing primary school attendance until government subsidies were withdrawn in the mid-1990s. Since that time, the attendance at secondary school continues to drop. At present, while more than 200,000 students complete secondary school each year, less than 10,000 places in tertiary level education are available.

The Zimbabwe telecommunications system has been affected by Zimbabwe's economic problems and has not been maintained and upgraded. There are eight AM and 18 FM radio stations, and eight television stations.

Distance Education Providers

In the 1930s, public and private correspondence colleges started offering school services to those seeking schooling but unable to access schools. Today, they continue to offer certificates, diplomas, and degrees, most often from foreign educational institutions in locations outside the country. One, the Government Primary Correspondence School, which began in 1930 to offer the first five years of primary education to the children of white settlers, is still in operation and still has a majority of white students. Following independence, the government encouraged access to education through the provision of evening courses in schools, colleges, and community centres. When government subsidies stopped, the programmes were forced to close for lack of local funds. Similarly, the government supported the development of study groups in cooperation with another private correspondence institution, Rapid Results College. While the programme has been very successful, the government has reduced its funding and new groups cannot be formed. More recently, the pressure for post-secondary places has renewed the government's interest in increasing access.

In 1993, the Centre for Distance Education, University of Zimbabwe, began offering open and distance learning courses leading to a Bachelor of Education in Administration, Policy, and Planning Studies. The programme, designed to provide head teachers with opportunities for professional development, had an enrolment of 4,208 men and 2,478 women in 1999. The Centre obtained constituent college status in 1995 and, with the formation of the Open University of Zimbabwe in 1999, the Centre became part of the new university. The new university already offers five baccalaureate degrees and three diploma or post-graduate programmes and has plans

to begin a further eight programmes in August 2000. The courses are offered through a combination of print modules, radio programmes, and set tutorials at the 10 regional centres.

Access to Information and Communications Technology

New information and communications technologies have yet to be used in a significant way in Zimbabwe. Of all the distance learning institutions in Zimbabwe, the Zimbabwe Open University is the only institution that has made remarkable progress in intending to use information and communications technologies. The Zimbabwe Open University is in the process of setting up a very small aperture terminal (V-Sat) programme, which will provide programmes to students via satellite to all parts of the country. The Zimbabwe Open University's V-Sat involves the use of satellite, some stations, a hub, and terminals for the reception of the broadcast. This is a remote classroom concept in which students are able to see the presenter on the television screen or monitor of a multimedia computer. The ZOU's V-Sat project is an example of efforts to introduce information and communications technologies that have a national reach, regardless of location. V-Sats provide total independence from telephone companies. Sites can be installed and removed easily. Consequently, V-Sat combines low cost video, audio, and data, and offers direct high-speed access to any location the satellite covers.

Information and communications technologies are a growing phenomenon in distance education, but the current actual use is restricted to specific courses that deal with information technology.

In Zimbabwe, the computer as a tool for general office work and research gained momentum in the mid 1990s. As a result, training in computers is still in its elementary stage because a very small percentage of people have advanced knowledge in computers. In all tertiary institutions in Zimbabwe, computers are taught to post-graduate students except for undergraduate degrees which are specific to computers, for example, in the Bachelor of Computing Science programme. The National University of Science and Technology in Bulawayo, Africa University in Mutare, and Solusi University in Bulawayo all have computers and access to electronic mail. The Scientific and Industrial Research and Development Centre (SIRDC) in Zimbabwe is well equipped with various technologies. At most Zimbabwean universities, academic members of staff tend to have unlimited access to e-mail and Internet. However, the use of information and communications technologies at these institutions is restricted for use in specific programmes and projects.

The rural areas do not have access to information and communications technologies because of the lack of infrastructure such as electrified or solar powered locations and because the majority of Zimbabwe's population, and the majority of women, reside in rural areas. Only half of the secondary schools in Zimbabwe are linked to the electric grid and no more than 1% have a computer lab or access to a computer. Zimbabwe Posts and Telecommunications has never been able to install enough telephones to meet the requirement of consumers, even those in urban areas and in commercial companies. Added to that, the bandwidth commercial Internet service providers use in computer networks is narrow band, using a speed of four kilobits per second, which does not provide for transmission of data for video conferencing purposes.

In urban areas, information and communications technologies are often found in private establishments, for example, through private Internet cafés and libraries that charge for their services at a rate that is often US $50 for 30 minutes.

Symposium to
Examine Barriers Encountered by Women to the Use of Information and
Communication Technologies for Open and Distance Learning
Zanzibar, Tanzania - March 13th-17th, 2000
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**Symposium to
Examine Barriers Encountered by Women to the Use of Information and Communication
Technologies for Open and Distance Learning
Zanzibar, Tanzania March 13th-17th, 2000**

AGENDA

Day 1 – March 13, 2000

9:00   Opening Ceremony

10:00   Introductions

10:30   Coffee/tea

11:00   COMMONWEALTH OF LEARNING/UNICEF

              Chair: Dr. J. Thulie Nhlengetfwa

11:30   Country presentations

              Botswana
              Senegal

12:30   Lunch

1:45   Summary points

              Chair: Ms. Frances van Wyk

2:00   Country presentations

              Zambia
              Zimbabwe

3:00   Summary points

3:15   Coffee/tea

3:30   Country presentations

              Tanzania
              Swaziland

4:30   Summary points

5:00   Adjournment

Day 2 – March 14, 2000

9:00   Welcome and summary of previous day's points

9:30   Country presentations

                    Ghana
                    Mozambique

10:30   Summary points

10:45   Tea/coffee

11:00   Summary of Caribbean and Asian meetings

11:30   Country presentations

                    Lesotho
                    Namibia

12:30   Summary points

12:45   Lunch

2:00   Country presentations

                    Malawi
                    Kenya
                    Uganda

3:30   Summary points

3:45   Coffee/tea

4:00   Round table – identification of commonalties/barriers

4:30   Tasks defined and groups identified

5:00   Adjournment

Day 3 – March 15, 2000

9:00   Welcome and summary
           Review of group tasks

9:30   Group work

10:30   Coffee/tea

10:45 Progress reports

11:15 Group work

12:30 Lunch

1:30 Group report preparation

3:00 Break – shopping/sight seeing tour

Day 4 – March 16, 2000

9:00 Welcome and summary to date

9:15 Reports from small groups

10:30 Coffee/tea

11:00 Plenary – summary of group reports
       Identification of realistic strategies

11:30 Small groups – development of strategies
                      initiatives/activities to support strategies

12:30 Lunch

1:45 Group work on initiatives

3:30 Coffee/tea

4:00 Group reports – strategies and initiatives

5:30 Adjournment

Closing Ceremony

Workshop Dinner

Day 5 – March 17, 2000

9:00 Informal wrap-up
            Summary
            Recommendations
            Way forward
            Next steps

1:00 Lunch

Opening Remarks by Professor Geoffrey Mmari
Vice-Chancellor of the Open University of Tanzania

Symposium Organisers,
Symposium Participants,
The Commonwealth of Learning Education Specialist,
Distinguished Ladies and Gentlemen,

It gives me great pleasure to be here this morning at the beginning of this week-long symposium. This is an important occasion to meet people from across the continent and make friends.

We consider it a great honour that The Commonwealth of Learning selected Tanzania as the venue of this symposium. We hope that your decision will be proved right as you stay on through the week.

We owe a lot of gratitude to the sponsors of the symposium, who have made it possible for delegates to meet and discuss this very important issue.

The question of access to education or information technologies or to any of the other important aspects of human activity is a fairly broad one. When ministers of education met in Durban, South Africa, two years ago they had this to say about access.

'Access to education' can be defined as the possibilities offered to people to acquire knowledge, skills, values, and attitudes in a systematic and harmonious manner and to ensure their overall personality development. The concept can be seen from different angles. First physical and social access deal with the location of education facilities, both of which can facilitate or hinder access to education opportunities. Another aspect of access relates to psychological and sociological factors. Among these factors, the manner in which target audiences, for various reasons (religious, cultural, and so on) do accept or reject education programmes can hinder or, on the contrary, catalyse access to education. Examples of well-known psychological barriers to education are gender insensitive curricula and teaching methods, and educational programmes that have little bearing on local realities and traditional cultural values. The economic dimensions of access to education are even more striking in Africa, where financial and opportunity costs can be a serious problem to poor families and communities.

In theory, the possibilities for access to specific education programmes can be quite wide. In practice, however, as you will corroborate during your discussions, access to various education programmes could be impaired by a multiplicity of constraints. In theory, policy and decision-makers can choose to create free and universal access to primary education. But in practice, free and universal access can be hindered by problems such as insufficient classrooms, teachers, and financial and material resources.

Translating these views to the topic of this symposium, it is obvious that realities, on the ground, tell us that we are limited in what we can do. The constraints should not discourage us but rather spur us on to further efforts to explore possible solutions. Others have done it; we can do likewise.

I wish you a very pleasant stay in Zanzibar and a productive symposium. We look forward to your final report.

**Opening Address by Mr. A. Y. Mzee, Principal Secretary,
on behalf of the Honourable Omar Mapuri, Minister of Education and
Chief Minister, Zanzibar**

The Commonwealth of Learning Representative, Ms Susan Phillips,
Vice Chancellor, Open University of Tanzania, Professor Geoffrey R. V. Mmari,
Distinguished Guests,
Ladies and Gentlemen,

It is indeed a great privilege and honour for me to officiate at this opening ceremony of the international symposium on Gender and Technology. The theme *Identifying Ba rriers Encountered by Women to the Use of Information and Communications Technologies for Open and Distance Learning in Africa* could not have come at a better time.

We are at the dawn of the twenty-first century of science and technology. I especially wish to welcome those of you who are coming from outside Zanzibar and Tanzania. To you all I say, welcome to Zanzibar, and please feel at home.

I understand that this symposium is among four others scheduled to take place in the developing countries of the Commonwealth. It is indeed deeply inspiring for me to be here to witness the third meeting in the series, being held in Zanzibar. I want to take this opportunity to commend the efforts of The Commonwealth of Learning, the International Development Research Centre, and all those who have worked so hard and devotedly to see that the symposium takes place today.

Ladies and gentlemen, I believe, as all of us do, that distance and open learning, especially for women, could increase education and training opportunities. Open and distance learning helps to overcome some of the challenges that women and girls face when the only opportunities for education are provided through conventional means. However, the frequent emergence of new information and communications technologies may not be without problems. Since these new technologies in the delivery of education through open and distance learning approaches must be learned before they can be utilised effectively, the whole process will depend in the first place on the availability of training opportunities in the new technologies. They have the potential of opening up yet another dimension of the exclusion of women. I believe you may share with me the fear that women may become further marginalised in accessing education delivered through open and distance techniques due to issues related to the inability to use these new technologies, if women are excluded in learning these new information and communications technologies. Such fear arises because, traditiona lly, women are disadvantaged in the sense that they are not exposed to new inventions. Men have always tended to grab every new initiative. Not only has the multitude of roles been allowed to hinder the chances of women to be in the forefront in learning new ventures, but also the resulting outcome of having men dominate the staff employed to work in open and distance learning environments seals the fate of the women in effective and meaningful participation in education.

Ladies and gentlemen, this symposium draws together distinguished women from Commonwealth countries in southern Africa. I hope the different reports will provide enough ground for a fruitful discussion. From your deliberations on issues raised by each country report

you may be able to take note of the identified barriers to the use of technologies women encounter, and the strategies, if any, that have been used to overcome them. This symposium provides a blend of the best arena for the participants to recommend 'best practices' to be replicated in your countries or elsewhere. It is my hope that the results of the five days of deliberations at Fisherman's Resort will have a lasting positive impact on the provision of education and training to women and girls through open and distance learning, with proper utilisation of information and communications technologies.

I take this opportunity to wish the symposium every success. I want to thank the Open University of Tanzania for assisting the hosting of this event and providing an atmosphere so conducive in promoting successful deliberations. This symposium will be inspirational to us in Zanzibar who have adopted and put into practice the open and distance learning strategy in the in-service training and upgrading of our teachers through a network of teachers' centres. I again hope that our friends who have come from afar will have a pleasant stay in Tanzania.

With those very few remarks, I now have the honour and pleasure to declare your symposium officially open**.**

Thank you for your attention.

Closing Address by Mr A. Y. Mzee, the Principal Secretary,
Ministry of Education, Zanzibar

The Commonwealth of Learning Representative, Ms Susan Phillips,
Distinguished Guests,
Ladies and Gentlemen,

It gives me great pleasure to be with you this afternoon. I have received gratifying information on the progress of the symposium sessions. I am indeed glad to be able to join you, though at this closing session. Some people say that 'All good things must come to an end, and there is nothing we can do about it.' On the other hand, others might say, 'All good things must come to an end, in order that better things would follow.' The enthusiasm of the latter group of people and realistic approach on issues of eradicating all barriers to education and training for women and girls should be adopted.

Ladies and gentlemen, while acknowledging the value of traditional school-based education, which continues to be the prevailing and predominant mode for basic education, it is encouraging that alternative non-formal avenues are being sought for those who are unable to benefit from the formal school system. Even for those who have profited from formal schooling, alternative or additional modes of delivery of education would be valuable in fostering continuing life-long learning.

I believe, as all of us do, that distance and open learning, especially for women and girls, could increase education and training opportunities. Open and distance learning helps to overcome some of the challenges that women and girls face when the only opportunities for education are provided through formal school system. However, with the onslaught of new information and communications technologies to deliver open and distance learning, it is feared that this trend may be reversed, and that women may become marginalised in accessing education delivered by distance methodologies due to issues relating to use of these new technologies.

I have little doubt that as a product of these five days you have come up with answers to the questions the Honourable Minister for Education and Deputy Chief Minister Omar Mapuri posed in his opening speech 'Are the women able to use these new information and communications technologies?' As he pointed out, such questions arose because traditionally women are disadvantaged, in the sense that they are not exposed to new inventions; men grab any new initiative. Not only that, women's multiple roles hinder them from being in the forefront in learning new ventures. As a consequence, with the accelerating pace of technological advances and the rapid globalisation of knowledge, no one can possibly escape the process of adding new skills in this new millennium. As a matter of fact, flexible multi-skilling would become a norm for everyone who hopes to remain employable and not saddled with obsolescent skills.

Ladies and Gentlemen,

The symposium has utilised the valuable experiences, skills, knowledge, talent, and imagination that the distinguished delegates in Commonwealth countries south of the Sahara possess on the issue of taking learning and training beyond the classroom.

It should be remembered that, just as the use of information and communications technology in the classroom does not automatically enhance teaching and learning, it cannot be assumed that

the use of information and communications technology, however sophisticated in facilitating open and distance learning, would automatically be more effective or efficient than the limited use, or non-use, of technology. I hope that besides focusing all attention, as you continue thinking on issues of barriers to accessing information and communications technologies, that you extend your concern to the quality of learning women and girls achieve through open and distance learning.

On this note, may I wish you every success in meeting the challenges ahead. For all those travelling out of Zanzibar, I wish you safe travel back home and for friends who are staying behind, I wish you a safe and peaceful stay.

I now have the honour to declare the symposium closed.

God bless you!