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**ICT as an Instrument for Participation:
The Regional Perspective from Africa, Examples of the
Internet use at the Grassroots Level**

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INTRODUCTION

Common sayings :

- 'Information is power.'
- 'Information is the currency of democracy'
- 'Democracy is the basis to economic and social development.'
- 'Who ever holds the information holds the power.'

I would say that who ever produces the information and disseminates it, holds the power. Any developmental process goes through information gathering, processing and distribution whether it is about growing crops, selling or buying goods, accessing to education, health care, public services. African women, like anybody else, need to go through this process for their own development and their participation in the global economy. Information and communication technologies are means to produce, receive and disseminate information and thus, can be tools for social changes through development of civic awareness and sharing of knowledge.

Communicating, getting access to, creating and disseminating information requires infrastructure and the competencies to produce content and administer the networks. But what is the situation in Africa in terms of infrastructure, content and competencies ? Is everybody involved in the process of holding the power ? Where do women stand ? What has been done to integrate women in the process of holding the power ? What can be done ?

I. STATE-OF-THE-ART IN AFRICA :

I.1 INFRASTRUCTURE

ICT infrastructure includes :

- Telecommunications
- Internet
- Computers and Software
- Broadcasting - TV & Radio
- Human resources to install, operate, develop, set policy and produce content.

Africa's ICT infrastructure is the least developed in the world even though it has expanded very rapidly, and with a population of 816 million people in 2001, the estimated indicators are as follows, according to Mike Jensen's report :

- All of the 54 countries & territories in Africa have public local dialup Internet access services in the capital cities.
- 25% of the 816 million people have a radio,

- 1 in 13 have a tv,
- 1 in 35 have a mobile phone,
- 1 in 40 have a fixed line,
- 1 in 130 have a pc,
- 1 in 160 use the internet. (“1.7 million of dialup Internet subscribers. North Africa and South Africa are responsible for about 1.2 million, leaving about 500 000 for the remaining 49 Sub-Saharan African countries. »)
- 1 in 400 have a pay-tv
- Most African capitals now have more than one ISP, and in mid 2002 there were about 560 public ISPs across the region
- 9 Countries have only one public access full service ISP
- 28 Countries have local POPs for dialup access in secondary towns
- 19 Countries have local dialup Internet access nationwide
- 24 Countries have GSM mobile phone international roaming

However, in Africa, the indicator « numbers of users » is not appropriate because many people share accounts and computers, use corporate and academic networks, or visit cyber cafés, telecentres and business centres.

The international Internet bandwidth for instance, has become an important tool of measuring the amount of internet usage in developing countries. Most of the traffic occurs within the international bandwidth (75-90%), and almost all upstream Internet circuits connect to the USA, with a few to the UK, Italy and France.

Intra-continental links are almost inexistent except for the 6 links between some neighbouring countries : Gambia links to Senegal, and South Africa links to Namibia, Lesotho, Swaziland, Zimbabwe and Botswana.

It is expected that the West African marine fibre cable (WASC) and the availability of low-cost VSAT licenses would make it easier for intra-african connections with larger internet bandwidth. For example, Senegal has a 45Mbps Internet circuit to France via the new Atlantis-2 cable and is planning to become a regional hub linking its Internet backbone to Mauritania and Mali.

Associations of Internet service providers in Africa will interlink their national Internet exchange points via fibre and satellite to reduce the amount of internal traffic off-continent and therefore **cost**, which is the main issue.

Internet is expensive and not widely spread in the countries. One can see that the number of users in the cities and towns is much greater than the number of rural users even though 19 countries now have adopted the strategy of charging the same local call rate for all calls to the Internet regardless of distance to reduce costs for those in remote areas. In Seychelles calls to the Internet are 50% lower than normal local voice calls.

The average cost of using a local dialup Internet account for 20 hours a month in Africa is about \$60/month (higher than the monthly salary of an average African) compared to US\$20 in the United States with no time limit and with per capita income at least ten times higher.

I.2 CONTENT

Peter Da Costa, in Rowing Upstream chap 3, said : "Globally, there are more than 2.1 billion Web pages online, of which Africa generates a mere 0.4 percent. Only 4.15 million Africans are online, a mere 1 percent of the global total of 513.41 million... barely 100,000 African URLs have been registered »

The few African web content is due to poor telecommunications infrastructure with low bandwidth, high access costs and high costs of developing and hosting web content.

Assuming that any web page or site created by Africans or about Africa whether it is hosted in Africa or abroad is considered to be African web content, the-state-of-the-art of African content covers the following areas:

- **Civil society issues** : Peace and Security, Socio-Economic Policy Analysis, Gender, Health & Population, Sustainable Development, the Social Sciences, Human Rights, Civil Society and Community Development. These contents are produced by civil society organizations and on line communities in the African Diaspora. A very interesting and resourceful example for women is Women's Net web site, which gathers information and resources, repackages information of benefit to individual women and women's organizations and makes it available for all. Another interesting site for women is famafrique.org which also provides information on women's activities, training on how to use ICT and organizes forums on women's issues.
- **Education, Science, Technology and Statistics:** Areas very important for African development but in which African content is very few.
- **E-Governance** to improve administration and governance for more democracy is almost inexistent. This concept implies involvement of citizens in the process of decision making and access to administrative information in real time.
- **E-Business** : Big companies are investing in African content to develop their business and provide business information on Africa free or with a fee to access. Some countries are providing business information : 5 countries have national online E-Commerce Trade Sites (Egypt, Ethiopia , Morocco, South Africa, Tunisia), and 7 Countries have Stock Exchanges on the Net. There are 2 countries with their public telephone directory online (Tunisia and Mali) and 3 governments with tender offer information online (Algeria, South Africa, Tunisia)
- **Media** : African Web content is largely represented in this area and is of very high quality : over 120 newspapers, news magazines and radio and TV stations were available on the Internet in 1999; over 60 percent were

published on the sub-continent, in 23 countries. Today, there are 14 countries with Radio Stations broadcasting on the Internet.

- **Art and Culture** : Biggest area in African Web content to promote African music, museums and galleries, to assert national cultures and identities, and keep track of history.
- **Travel & Tourism**: Best e-commerce application so far which ranges from simple web pages to sites with electronic payment of plane tickets, hotels bookings, ...
- **Electronic Mailing Lists & Web-based E-mail**: About 140 electronic mailing lists related to African issues give the opportunity to African diaspora, mainly African-American, to chat and e-mail in written indigenous languages such as Swahili, Shona, Hausa, wolof and Fulani. This can be a good tool to evaluate the use of African languages in the net.

To create web content and disseminate it via the existing ICT infrastructure, competent human resources is needed. The next chapter will put emphasis on the situation in Africa and suggest some reasons for the disparities between men and women.

I.3 COMPETENCIES AND DISPARITIES : WOMEN'S SITUATION

Low level of education and illiteracy induced by poverty is the main problem for human resources development in Africa and has created lack of skills and expertise from decision making down to end-users. This situation is more severe in rural areas. Moreover, the few experts and experienced technicians Africa has are going abroad for better salaries and standing because of the bad economic situation resulting in very low pay scale in the African civil service.

ICT expertise usually requires science and technology oriented background and a university degree. Unfortunately, in Africa, most people are illiterate and when talking about illiteracy in Africa, women are most concerned. From the early age, among the 42 million out of school children, 60% are girls. And 70% of illiterate people are women. In science and technology, women are lagging behind.

The main reasons for these disparities regarding science and technology and higher education are :

- Poverty : girls education is not considered to be very important in poor families
- Socio-cultural beliefs and attitudes : early marriage, women's predefined work domains
- Unknown female role models who are bright and successful in science and technology fields.
- Lack of proper gender strategy
- Lack of community (women) participation in politics and decision making

- No incentives to keep girls in schools : positive discrimination
- Sexual harassment and early pregnancy.

Even though OAU launched the decade of education for the period of 1997 to 2006 to urge all Member States to develop new ways of solving educational problems in Africa, there is a lot to do to overcome the gap between men and women from the early age.

The following chapter will describe some practical examples to highlight use of ICT at the grassroots level to reach remote urban and rural areas with emphasis on women, for capacity building, social and economic empowerment.

II. EXAMPLES OF WOMEN'S EMPOWERMENT THROUGH ICT.

The following examples are from Senegal, Uganda and Kenya. For the Senegalese examples, the data have been collected from the true actors and web sites. For Uganda and Kenya, the examples are withdrawn from Lucy Oriang's essay.

II.1 Senegal :

1. The Multimedia Caravane.

OSIRIS is an NGO; its objective is to promote good use of ICT for development in Senegal . OSIRIS brought internet to remote urban and rural areas of Senegal using a multimedia caravane. The caravane consisted of a van equipped with laptop computers, digital radio stations provided by World Space, a second van with 20 desktop computers and accessories, power generators, sound systems, chairs, tents, ..., and a small bus to carry the 30 people who were taking care of the equipment set up, demonstration, training of visitors, sensitization lectures and animation (sketches, music, radio talk shows...). The caravane went through 8 regions of the country and at every stop, the team would set up the place, conference room, training rooms, exhibition space.

As a founding member of OSIRIS interested in women's development, my role consisted in gathering and sensitizing women at every stop to come and discover the multimedia caravane. Women's organizations were my preferred target group because they were already structured and easier to reach. The most important activity was the welcome speech in wolof (Senegal's most spoken language). I would define and explain internet and ICT as mixed media and stress on the different uses and impact of ICT. Women felt very comfortable to ask questions and we were glad to answer them. The next step would consist of demonstrations on the different uses of internet for education, medical care, business, and artistic activities. Hands on sessions would then follow.

After a week or two of training, many women would come up with ideas of having more access to the internet for their business, mainly of growing crops, dying clothes, sewing or making handcrafts, shoes, ... Ideas of creating community telecentres were discussed with very much interests but very often, the big barrier remained infrastructure (power supply, computers, internet access) and illiteracy. We

suggested to help them achieve their goal even though we knew the question was not simple at all but we were thinking about having Sonatel the national telecommunication operator involved. We are still getting phone calls from those women seeking help to set up their business using ICT.

What is rewarding about this experience is that after our caravane some new cyber centers opened up in many of the regions.

2. Rural women, cellular phones and wireless internet pilot project.

A French company named Manobi and Sonatel are experimenting WAB systems with 100 senegalese agriculteurs' network. The promoters of this project provided rural producers with cell phones with coded access to internet and taught them how to connect to Sonatel's web site to get information about daily market price of their crops. As they were illiterate, the training was done with key words in national languages. This allows them to chose where to sell their products. They will then call their sales persons and direct them to the best market to go to.

Rural women involved in this project are mainly specialized in traditionally food processing crops. The cellular phones allow them to be in contact with rural business people network to know about the crops previsions. They buy the products and transform them into other products. They use the information collected from the web site to select the most interesting markets to buy the products they need. They also use the telephone for other personal purposes. They find the cell phone very appropriate because it can be carried around, therefore prefer it to the computer.

The project is very successful ; more and more producers are asking to use this system and people involved in this pilot project claim that they cannot do without it. But cost remains the biggest problem because although the cell phone is free, they have to pay for the communication fee which they find very expensive.

3. Enda cyberpop project, funded by IDRC to promote equal access to ICTs in 8 very underprivileged districts of Dakar with the creation in each district of a Community Resources Centre equipped with computers linked to the internet, managed by young people trained to assist illiterate people in the use of ICTs.

With this project women are trained to use the internet to promote local products and services (medicinal plants, music, artistic items, transformation of local products, mainly fish,...) by putting them on a web site. They acquire management skills (book keeping, marketing) and learn a lot about ICT as a capacity building tool that allow them to strengthen their ability to contribute in their economic and social environment as a starting point for empowerment.

The CRCs resolved themselves into a network which can be seen as a sign of success, but sustainability is the problem in terms of management of the CRCs because poverty is such in some of the areas that the product generated by the users is not enough to cover the charges related to electricity and internet connection.

4. The 2B1 research project of Bokk - Jang Senegal organization. 2B1's main objective is to assess whether the use of computers can help children gain interest in learning other subject matters.

Drop outs boys and girls from school are being trained with computers to give them another chance in learning in a different way than conventional school. 15 girls and 2 boys are involved in the project since last year with the means collected by the association's members and the willingness of the local community. Unesco supported the project by sponsoring the training of the trainers. At the beginning, feasibility study had been conducted to evaluate how the community would appreciate the project and how much they would be ready to give to have their children back to education. Very much interest was shown and the average amount people were ready to give was 3000FCFA a month (less than US\$ 5). To encourage girls involvement, 1500FCFA is asked for girls and 3000FCFA for boys. Even though it is too early to say that the project is successful, one can state that girls are very interested in taking the classes, they use the computer a lot to make calculations and to draw. In the afternoon, they take sewing lessons. The 2B1 learning centre is not using very much internet connections because of the communication cost. We are writing project documents to look for funds to expand.

II.2 Uganda

1. The Luwero Rural Information Unit is set up by Isis -Women's International Cross Cultural Exchange (Isis-WICCE) in collaboration with the women of Luwero, a district located at 40 kilometers from the capital Kampala. The objective of the unit is to provide space for women war survivors to meet, communicate, share their experiences as a healing strategy and have access to information relevant to their empowerment. The strategy is to train women leaders in the district and to provide them with relevant information so that they can use it to sensitize women affected by armed conflict about their rights, conflicts resolution and justice.

Even though the meeting center is a small room with books and magazines on women, one computer, a tape recorder, a video camera recorder, women often come to meet, share experiences and discuss issues. And as a partner of Isis-WICCE, the unit benefits from a very rich source of information on new publications on women and discussion lists on women's issues.

2. Mama FM is a project of the Uganda Media Women's Association which listens, guides and positively influences decisions in the family covering 13 million people throughout Uganda.

It is a very successful radio dealing with human rights issues, children, the environment, nutrition, governance and entertainment in a mix of English and vernacular languages (Lusoga, Luganda and Kiswahili). The specificity of this radio is that women are questioned as women and they feel confident to express their concerns and ideas.

II.3 Kenya

The Twendelee Handicrafts group : It is a group of 114 members with 15 men, mainly wavers, and 99 women whose work is to knit. The group members have been trained to use computers and the internet to log on to web sites about knitting for capacity building. This helps them develop their business with better design and quality and also new markets. The members learn about new styles of knitting, the prices and discovered that the women's product were really under-priced. It is reported that with the new price discovered, they would only need to sell 40 to 60 sweaters instead of 350 to 600 for the same amount of money.

Women use the cybercafes spread all over Nairobi until they get their own computer linked to the internet. The final objective is to develop their own web page in order to market their products on line.

III. CONCLUSIONS AND PROPOSALS

Reading through all these experiences going on in Africa, one can be optimistic about the ability of women to use ICT for development. A common denominator for all these projects has been :

1. **Information and sensitization.** This step went very well. Women are able to understand the benefit ICT can provide to them : capacity building, economic and social development via improvement of their status as producers, mothers, workers, desperate persons, citizens. Therefore they become ready to take the risk to learn to appropriate and use the tool.
2. **Training** is not an easy task when women are illiterate, which is the case for most women in remote urban and rural areas. The training language is another problem to tackle. Intermediates and genuine strategies are often needed to transfer this technology, taking into account the social and economic background.
3. **Access.** This issue remains the problem because of poor internet infrastructure, scarcity of power supply, and high cost of computer equipment and telecommunication connections. For most of the project, access time to ICT is limited or just occasional, leading to frustrations for women who are sensitized enough to be willing to continue using the tool.
4. **Sustainability of projects.** Funds is the main key word for sustainability. The ideas are great and the experiments mostly successful but many African projects stop working as soon as the funded phasis is over. However, more and more projects are relying on the community to find strategies to take over and manage the activities successfully.

To overcome all these barriers to enhance the potential of ICT for the empowerment of women for effective participation in the information and communication society, the following actions have to be undertaken :

1. **Sensitization and Training** : Literacy programs should be driven using appropriate and available ICT to make women familiar with these tools. Because of the very high level of illiteracy and the oral culture of Africa, community radio should be used to sensitize women on issues related to the impact of learning and of using ICT for their own development. The radio programs should stress on the definition and explanation of how the tool works with concrete examples. Women should be free to chose the right time. In areas where tv is available, it should be used to show the tool's benefit and the convergence of radio, tv and the internet.

The involvement of female role models such as ICT experts and journalists would be of a great importance. We undertook research activities within the framework of ACACIA, an IDRC project to state how the gender dimension should be taken into account. We found out that women are more keen to communicate, to express their feelings, needs and ideas when they are among other women. The female role models who are aware of their societal problems will support them in challenging stereotyped roles they are expected to play, counter negative portrayal of women in the media and stand up for all their rights.

At the same time, wen (fathers, brothers and husbands) should be sensitized in gender issues to participate in family house work management to free women from routine tasks that prevent them from having time for following sensitization and training activities. Men would then be more aware of gender equity at a professional level.

To achieve activities of sensitization with this method, women civil society organizations in remote urban and rural areas must be supported financially and technically by the UN, the African Union, the funding agencies and the private telecommunication companies. Community business centers would be set up so that during the sensitization activities, demonstrations and training sessions can take place in them.

The training sessions should include capacity building activities such as management, micro-finance, local market development, health care, nutrition, human rights, first level technical maintenance (how to detect low batteries, fix plugs, connect accessories on tv sets or computers, ...).

2. **Access** to ICT for women in the remote urban and rural areas of Africa can be achieved with the promotion of WAB technology combined with the convergence of different technology devices (radio, television, print, internet). To reduce access cost on computers and network access, open source technology should be promoted and satellite and fiber optical cable expanded.
3. **Content** : Women can produce their own content if they are well sensitized and trained, if access is provided and the technical assistance available. Again women ICT experts should be heading these activities.

4. **ICT policy** : Women ICT specialists should be involved in policy and decision making in all levels regarding ICT access and use. This should be a political will to be effectively applied within governments and international agencies.

5. **Education of girls** : To avoid perpetuating the same scheme (gender disparity), governments and their development partners (private sectors, civil society, funding agencies and bilateral cooperation) should focus on reducing the number of girls out of school, improving the learning and achievement of girls taking into account the gender dimensions of quality education by :
 - i. providing schools with pedagogical material and curricula relevant for the daily lives of girls to teach them mathematics, science and technology.
 - ii. Hiring teachers who are gender sensitive
 - iii. Providing security in schools against sexual harassment
 - iv. Sensitizing parents on the importance of girls education for future development for themselves, the family and the country.
 - v. Developing community participation in the policy, decision making and management of the schools.

Finally, Africa has still a long way to go but the starting points are education, health, infrastructure, ICT and agriculture as defined within the framework of NEPAD. To succeed in any of the projects, women who represent more than 50% of the population should be involved in policy and decision making. Unfortunately, this is not yet the case and the UN should urge all countries to apply the recommendations proposed by DAW.

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