



Spider ICT4D Series No. 4 | 2012

# Empowering women through ICT

*Caroline Wamala*

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## Foreword

In March 2008, The Swedish Program for ICT in Developing Regions (Spider) and the Swedish International Development Cooperation Agency (Sida) gender help desk organized a workshop on gender, ICT and development. The aim of the workshop was to get an overview of actors and activities in Sweden in the area of ICT, development and gender. The workshop focused on areas where ICT could promote and create equality between men and women. Other points raised were how to empower women through ICT because women cannot achieve equality if they continue to have limited or no access to information and communication.

A crucial outcome of this workshop was a call for applications to Spider's Swedish partner universities to submit concepts that would address gender, ICT and development. The Swedish partner universities were encouraged to collaborate with partners in developing regions. In addition, co-funding partnerships with other development aid organizations focusing on the same objective were explored with much success. The result was a number of projects that sought to empower women in the global south through the use of ICT.

There are several initiatives that focus on addressing the access and use gaps between men and women; much can be learned from the different approaches to gender and overall ICT for development (ICT4D) outcomes. This publication contributes to on-going work in gender and ICT4D. An account of the Spider supported projects is given, along with a gender analysis of lessons learned.

## A note on authorship

The contents of this review are drawn from project reports submitted by project coordinators, facilitators and other staff involved in the projects.

The following people in no particular order have developed the reports, blogs and websites that this publication builds upon

- Pirjo Elovaara (PhD) and Kerstin Gustavsson from Blekinge Institute of Technology (BTH) for the work among rural women in Rwanda.
- Bo Göransson (PhD, Lund University) coordinated the research project in Vietnam, in collaboration with Tran Ngoc (PhD), Le Thi Quy (PhD).
- David Obura (PhD), Ms. Sarah Ater, Mr. Stephen Oluoch, Mr. Brigid Mibei, Ms. Jane Nyanapa, J.K. Patterson (PhD), Ms. Jamila Patterson, Ms. Britt-Marie Sundell and Ms. Eva Linden who worked towards empowering coastal communities in Kenya and India with alternative livelihoods through the use of ICT.
- The support and coordinated efforts of the International Institute for Communication and Development (IICD) through TiC Bolivia to empower marginalized groups of women in Bolivia.

This review further benefitted from comments and feedback on earlier versions from the project implementers.

To provide a more holistic perspective on the projects an epilogue of reflections from the Swedish university partners and other project implementers is included in this volume. A truly inspiring piece from Pirjo Elovaara (PhD) and Kerstin Gustavsson from BTH titled “Ordering messiness? - Diffracting an ICT-project in Rwanda” offers a reflective analysis of the position of Europeans in an African context. The texts by Bo Göransson (PhD) from Lund University and David Obura (PhD) et al. for the CORDIO project provide a comprehensive overview with reflections on lessons learned in their projects.

## Acknowledgements

Special thanks directed to the Spider team for comments on earlier versions and providing valuable suggestions. Thanks to Daniel Berggren for layout and design, and Katja Sarajeva for proof reading the manuscript.

The contributions of the project participants are also highly acknowledged.

The views expressed herein are those of the author and do not represent the views of Spider, or the projects implementers.

## Introduction

From 2007 up until early 2011 Spider supported various gender-focused initiatives that sought to uplift women particularly in the rural regions of the global south. This report offers an analysis of the impact on the lives of the women that participated in the projects. Various Information communication Technology (ICT) platforms were used to address a particular need or enhance a specific activity in the women's lives.

The empowering use of ICTs is closely connected to socio-economic development, and this potential towards social transformation demands that everyone should have access. Prevailing inequalities in access to ICTs throughout the world suggest that many groups are hindered by their social and economic circumstances from developing a relationship with ICT. In relation to women, this inequality is referred to as "the gender digital divide". The concept of a gender digital divide is supported by empirical evidence that shows that women all over the world use ICT to a lesser extent than men (e.g. Huyer & Carr, 2002; Primo, 2003; Lie, 2006). A variety of efforts have aimed to address this gap. If access to ICTs can promote sustainable socio-economic development and women lag behind, a significant portion of the world's population must be aided by a targeted approach.

Women in the global south experience multiple challenges when it comes to access to and use of ICT (Kole, 2002; Huyer & Carr, 2002; Hafkin & Huyer, 2006; Parmentier & Huyer, 2008; Wamala, 2010).

Most of these challenges are a result of social processes that marginalize women from technology, change and ultimately progress. The potential of ICT is twofold: it can contribute to socioeconomic development and promote gender equality.

It is important to remember that while gender is usually assumed to be synonymous with women, it is not only about women (Carver, 1996). Thus the term 'Gender Focused Projects' is a misnomer; the Spider initiative should have correctly been termed 'Women Centered Projects'. Drawing upon Gender Role Theory, expressions of masculinity and femininity are dependent on and defined in light of each other (Hardy, 1995: 425ff). Initiatives that focus on just women run the risk of neutralizing men as a gendered category. Similarly (in relation to the current document) there may be the assumption that men in developing regions do not experience access challenges related to ICT: this is not the case.

Even though men are largely absent in this report, they are also paradoxically present because men are the invisible norm against which women are measured (Fox Keller 1992: 51). It is important to reiterate that discussions related to women, or gender for that matter, concern men and women, a point that was underscored during the 2008 workshop between Spider and the Sida Gender help desk. In mentioning this, the aim is to ensure that men do not disappear from discussions or are themselves exonerated as gendered. However, in relation to technology, men are visualized as the norm against which use of technology is understood.

The importance of women centered efforts cannot be underplayed but inclusion practices must be scrutinized with caution because the interventions may in fact reinforce the very differences they aim to bridge (Faulkner & Lie, 2007). If one of the expected outcomes of women having access to ICT is to enable gender equality, initiatives focusing on women only may fail to achieve this measure, a point that will be revisited subsequently. Having said this, there is evidence that suggests that efforts focused on women are addressing gender differences regarding ICT use and access. Best & Maier (2007) and Cockburn (1985) argue for ventures focused solely on women, because this is the one way to encourage women to develop relationships with ICT. There are a number of reasons why this approach is effective. It breaks the image of a male recluse who socializes with the world through the computer, an image that has alienated women (Turkle, 1984). There is also evidence that in efforts to integrate ICT into a community, with equal access for men and women, there is still a tendency for men to take over (Wamala, 2010).

It should be remembered, that gender as a social category is intersected by a multitude of other social attributes, such as age, ethnicity, class, race, caste, disability etc. which can, depending on the cultural context, be more significant (cf. Mellström, 2009). The variability of the primary identification is closely connected with power structures and hierarchies as gender, caste, class, age, race, disability or ethnic differences are embedded in processes of power that both privilege and marginalize groups. In other words, not all women in the global south are underprivileged, and not all men are privileged when it comes to access to ICT. It is therefore imperative to look at other social circumstances that shape one's identity and locate one in the network of social relations.

### About the projects

This publication covers five different projects carried out in six different locations. There were two projects in Bolivia, one focusing on empowering female indigenous leaders and the other provided female victims of domestic violence with a safe virtual environment where they could receive support and exchange experiences and information. Another project was carried out in two separate countries on the coast of the Indian Ocean. The project focused on ecological sustainability, diversification of livelihood, basic training in ICT and focused primarily on women's self-help groups in Kenya and India. In Rwanda the project focus was on integrating ICT into women's basket weaving practices in order to explore the opportunities of an online presence as well as the preservation of traditional practices. A research project in Vietnam focused on the consideration given to gender in the development of ICT.

These projects were initiated in collaboration with actors that had established networks and a keen understanding of the local contexts. The Bolivian projects were co-funded with Dutch development partner, International Institute for Communication and Development (IICD).<sup>1</sup> IICD had a well-established presence as a development partner in Bolivia and their goals meshed well with Spider's. The project in Kenya and India was coordinated by Coastal Oceans Research and Development in the Indian Ocean (CORDIO, East Africa, Kenya). Suganthi Devadsason Marine Research Institute (SDMRI) was the principle implementing organization in India. This partnership was established to encourage south to south exchange of ideas and knowledge. Nyköpings Folkhögskola rounded up the team of implementing actors in the project and developed the pedagogical methods used for ICT in learning.

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1 [www.iicd.org](http://www.iicd.org)

An outcome of the ICT, gender and development workshop in March 2008, was the support of two gender focused projects in Rwanda and Vietnam submitted by Blekinge Tekniska Högskola and Lund University respectively.

## Disposition

This report focuses on the influence of ICT on the lives of women who participated in the projects discussed here. As mentioned earlier implementing and initiating these projects required the collaborative efforts of different actors and these relationships in themselves are important to consider for their role in the project outcomes. Two forthcoming publications will cover all the concluded Spider projects from the general perspective of lessons learned (Popova, 2012; Sarajeva, 2012), while this volume focuses exclusively on the projects through Spider's focus on gender. The role of the relationship between implementing partners is also explored in these forthcoming volumes.

After a brief overview of gender, technology, and ICT in development the project activities situated within the local context are discussed with a general profile of each country. Thereafter, the details of the project activities and outcomes are provided in broad strokes leading up to an analysis of the impact of ICT on the women's lives. Each project is presented in a separate section that can be read independently. The projects in Bolivia are presented first, followed by the project in Vietnam. Thereafter the project in Rwanda is outlined. Finally the project in Kenya and India is presented. The presentation of the projects is followed by an analytical section before rounding up the report with concluding remarks.

# Gender, technology, ICTs and development

## Unpacking ICT

While exploring the significance of ICTs in the lives of women, it is important to note the range of technologies that are subsumed under this acronym. Even though the newer ICTs, namely mobile phones and computers tend to dominate discussions of ICTs, print media, radios and televisions, often referred to as traditional mediums still play an important role especially in developing countries, as they expand the reach of ICT initiatives and facilitate the spread of information. While this report is dominated by the Internet and, by extension, the computer, the reader is asked to keep in mind that this is not the only ICT.

## Gender and technology

The analyses are contextualized within gender technology and development discourse. Technology exists in a social world; it shapes and is shaped by the social landscape that influences its integration processes. If technology is considered in this social context, the subsequent relationship with social attributes such as gender, disability, race, caste, ethnicity and age become of interest.

As a category of social organization, gender has attracted significant attention in how it shapes technology. In the current publication, gender is regarded as a social category, which differs over time as well as place. Doing gender (West & Zimmerman, 1987 & Fenstermaker & West, 2002) or performing gender (Butler, 1990) suggests that relating to the world, and how the world perceives one's enactment of gender is of primary concern.

To be accepted, understood and respected in society, requires that people act in accordance with the socio-cultural norms that shape how gender is expressed. How one relates to technology is part of these norms.

This report considers gender and technology as cultural enterprises that co-constitute each other. In other words technology affects gender just as gender affects technology.

## ICTs in development

Some of the cases presented in this report illustrate how women's relationship with technology is often regarded in light of men's relationship with technology. There is an enduring (almost undisputed) link between men and technology (Faulkner, 2000). Even in the global south, experience and research has found that more men than women access ICTs (cf. Huyer & Carr, 2002; Polikanov & Abramova, 2003; Wamala, 2010). Even where efforts exist to enable rural populations to partake in the information revolution, there continue to exist social digital divides. Many of these are tied to cultural structures that marginalize women into domesticity, thus limiting their mobility and exposure. Under these circumstances, education and exposure remain distant for women. The cases illustrated in this report further point to the importance of continued women-centered efforts to not only address the gender digital divide, but also empower women and open up opportunities for a better life.

## Empowering female indigenous leaders through ICT - Bolivia

Bolivia is a landlocked, multiethnic country located at the heart of South America. A third of its 10 million inhabitants live in the rural areas, almost two-thirds of the population is under the age of 25 and at least two thirds of the population claims indigenous ancestry. The current president, Evo Morales of the Aymara indigenous group, made history as the first indigenous president of Bolivia when he won the election in 2005. Since then Morales has worked tenaciously to restore more rights to the indigenous people of Bolivia. The president's efforts have ensured that the three-dozen indigenous communities have a right to their "language, territory as well as communitarian justice"<sup>2</sup>.

Like many indigenous populations in other parts of the world, the Bolivian indigenous people have met with resistance in their efforts to maintain their social, cultural, economic and political values. Riding against colonial remnants and reformist, 'modern' tides of change, the struggle to be respected and recognized continues and has united more than 300 million indigenous people all over the world warranting a special UN task force<sup>3</sup>. In a similar vein an International Indigenous ICT Task Force was established at the 2005 World Summit on the Information Society (WSIS) in Tunisia.

Article 15 of the 2005 WSIS declaration recognizes the importance for indigenous populaces to partake in the information society while "preserving their heritage and cultural legacy"<sup>4</sup>.

2 <http://www.bolivianconstitution.com/> Accessed 14 September 2011

3 <http://www.un.org/esa/socdev/unpfii/> Accessed 22 November 2011

4 <http://www.indigenouportal.com/IICTF.html> Accessed 23 November 2011

TiCBolivia, supported largely by IICD since 2000, is a locally established multi-stakeholder network of national actors working with ICT for development (ICT4D) in the areas of governance, agriculture and education. The Confederation of Indigenous Peoples of Eastern Bolivia (CIDOB) is part of this network<sup>5</sup> and one of CIDOB's national chapters focuses on solidifying leadership and public policy advocacy for indigenous women. Spider partnered with IICD from January 2009 to December 2009 to assist in developing ICT competences of indigenous female leaders.

Integrating computers into the lives of the members of CIDOB was a gradual process that begun in 2002 with support from IICD. The establishment of 11 regional centers strengthened the development of ICT competence among the CIDOB members. On the wave of this success, IICD and Spider narrowed their focus on the female indigenous leaders to increase their participation in political processes.

In order to increase lobbying activities and decision-making practices a core group of 100 women participated in computer skills development that qualified them in:

- Computer and Internet skills: such as email, Skype, blogging and writing wikis
- The use of applications such as Word, Excel and Power Point
- Web development and maintenance



CIDOB - Bolivia. Photo by: IICD

The training was tailored to political leadership and succeeded in building the women's self-worth. Through the use of interactive platforms such as blogs and wikis, the women's appreciation for information exchange grew. The Internet was not the only medium through which the female indigenous leaders found and articulated their voice. Some of the traditional media such as television and radio were used to increase outreach opportunities. For example, through television an advertisement campaign on the new constitution was subjected to a gender analysis that gave special focus to the unique rights and needs of indigenous women in Bolivia.

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5 IICD has continued to support CIDOB's activities. [www.iicd.org](http://www.iicd.org)

*“It was a successful part in the courses to lose the shyness of being able to demonstrate and be more informed of what’s happening in our country and learn more, this is important in everyday life”.*

- Project participant

## Impact on the women

Due to the project “an increasing number of female leaders have been able to gain key political positions at local, regional and national levels”<sup>6</sup>. Media such as Skype gave female indigenous leaders an “easier and cheaper” way to connect to each other; which in turn advanced their confidence and unity in speaking about issues most pertinent to them. Online platforms such as blogs and wikis as well as traditional media such as radio and television enabled them to communicate their message to a wider audience. The impact of these efforts is underscored in the fact that a number of women’s demands were addressed when a local leader in CIDOB assumed a national leadership role.

*“The management of the computers that I am learning has changed my knowledge of reality a lot”.*

- Project Participant

The overall use of ICTs has empowered these women especially the Internet resources have created a greater awareness of governance issues and technical forms of communication. Declarations such as “I learned to use ICT and to communicate with others” and “I have posted my news to tell you how we live” attest to communication beyond the local environment. Similarly the women suggest “with great satisfaction how [communication] with people that I need to streamline my activities with is easier and cheaper through the Internet.” From the training others claim “I can write and read messages because I managed to learn about computers and the Internet. I do this for the good, the women in my organization, to have more information and to know what is happening in other departments and other countries.”

It is very encouraging to see that for these female leaders, the key to the achievements enumerated can largely be attributed to the acquisition of knowledge. Even though they held leadership positions before ICTs were introduced into their work, the assumption is that their activities and perhaps aspirations were restricted to their constituencies. Introducing ICTs into their work - Internet, radio and television - expanded their “reality”.

<sup>6</sup> “The impact of ICT in Bolivia in 2009: experiences of TICBolivia: Published in 2008 by the Analysis of Social and Economic Policy (UDAPE) and the Interinstitutional Committee for the Millennium Development Goals (CIMDM).



Indigenous female leaders - Bolivia. Photo by: IICD

*“With the training we’ve had, I have improved my leadership because I have more knowledge”.*

- Project Participant

Drawing on theories from gender and technology studies, it is helpful to unpack the prefix “indigenous” and what it suggests to the women in this project and to their current and previous relationship with ICT. As noted earlier, Evo Morales president of Bolivia, by his very own indigenous ancestry altered the socio-economic, socio-political and socio-cultural landscape of the indigenous people of Bolivia. Statements such as “[t]he management of the computers that I am learning has changed my knowledge of reality a lot”, can be read in light of previous segregated practices based on ethnicity that established a particular reality for of these women. Related to the current discussion the socio-political climate is a critical factor in the appropriation of technology. In other words for multi ethnic countries like Bolivia, one’s ethnic or racial background regardless of or in conjunction with gender can be an inhibiting or enabling factor to social progression. Put differently, one’s ethnic background may determine access or non-access to ICT. Another example can help put this discussion within the frame of understanding the socio-political environment and its impact on the gendering of technology.

By comparison women in Malaysia and India dominate the computer sciences profession. When establishing how this status quo has been sustained in Malaysia, Mellström (2009) and Lagersen (2008) found that politically induced quotas endorsed by government offer educational privileges and employment to the Malay. This means that Malaysians of Indian and Chi-

nese decent are not offered the same “free tuition, special scholarships“ and college entrance qualification opportunities as the Malay (Mellström, 2009; 893). This has opened up computers sciences to the Malay females who by virtue of their racial identity are awarded educational privileges ahead of Malaysians of Chinese and Indian decent. A combination of factors reinforces this situation even within the Malays. The first is the idea that computer sciences is an ideal profession for women because it is associated with “indoor spaces” that are safe for women as opposed to the hard sciences such as civil engineering “defined as masculine because of its outdoor working environment” (Ibid.; 895). Also reinforcing this situation is the concern of the under-achieving Malay men. The socialization processes impress a laissez faire attitude as articulated by one of Mellström’s informants, because no matter their educational attainment, men will still be the heads of their families “So why bother?” (Ibid.; 897). These enumerations suggest that despite Malay women dominating a previously male dominated industry, the socio-cultural hierarchies based on gender endure. But the point emphasized in this account is the influence of one’s racial or ethnic identity towards social advancement. This identity assisted by the sociopolitical climate, or power structures can have a great impact on who has access to ICT.

Some indigenous women may by virtue of their ethnicity face segregating practices, while at the same time other women may experience different and privileged opportunities. As such, in addition to one’s gender, marginalization processes can be deeply embedded in one’s race or ethnicity (Crenshaw, 1999). Studies or analyses on the gendering of technology must acknowledge the expansive and complex identities that situate each individual in different social positions. Projects should similarly acknowledge the multiplicity associated with each community. These illustrations cannot deny that engaging with ICT can provide women with higher “education and economic power” (Wajcman & Le, 2007; 23).

### Challenges and way forward

The initial core group of the project participants was determined to pass on their knowledge to other women, and actively formulated strategies to ensure sustainability of the regional centers and political activities after the eventual end of support from IICD and Spider. To date the women have initiated twenty-three socio-economically sustainable projects in the areas of the promotion of indigenous handicrafts, tourism, forestry and livelihood. Similarly the women have sought financial assistance from the national indigenous fund. The regularly maintained website [www.cidob-b.org](http://www.cidob-b.org) remains informative with audio streaming adding to its sophistication.

The challenges in this project were many, the limited infrastructure being the most prominent, and the limited education of the women. The latter was addressed with the use of images and alternative forms of information and communication. Infrastructural challenges demand alternative and technologically innovative solutions. But the improved levels of literacy have positively influenced a significant number of female indigenous leaders as well as their constituencies.

## Online consulting service on domestic violence - Bolivia

Women who are victims of domestic violence endure shame, vulnerability and powerlessness, in Bolivia and in the rest of the world. The abuse is suffered in silence because its revelation would violate established relations of power and domination. Abused women often have no where to go, and even if such frameworks exist, the enduring boundary between private and public spaces often prevents action. This boundary is often fortified with cultural norms and myths such as ideas that a good woman would ensure that private matters of the home remain private. Women's social economic statuses may also help strengthen the public-private boundary. Many organizations dedicated to assisting victims of domestic violence are turning to the use of ICT to capture the stories and offer advice. The Internet in particular offers a possibility to remain anonymous, and is a crucial component for many of the women who wish to seek help.

### Casa de la Mujer

The Casa de la Mujer domestic violence support program is another project that was supported by IICD and Spider. It has helped many victims to speak out about their situations by creating an online clinic. Building on their experience of consulting services for battered women, the Casa de la Mujer support program, initiated this project to complement their activities. As such this endeavor is not just an online entity.



<http://www.casadelamujer.org.bo/> - Bolivia

*Stephanie (not her real name) looks visibly tired. She states simply “I come because I was told that this office defends women. I’m tired of the abuse of my husband, which I have been exposed to for more than 23 years living with him, we have 2 children (22 and 15), I have always been at the receiving end of my husband’s abuse (hitting, pushing, and words that cannot be repeated, he has humiliated me, etc.). I have tolerated my husband’s drinking, often he gets drunk at any hour of the night or early morning and I must be up to open the gate for him whatever time he comes home. He does not want to carry a key. The minute I hear any movement I must wake up and rush and personally open the door, or else he will kick the door, this is no life for anyone ”says Stephanie. (Translation of testimonial above)*

This online clinic has other narrations similar to Stephanie’s and was a one year project in 2009 that was supported by IICD and Spider. IICD continued funding after 2009 and the platform gave other women like Stephanie an outlet that had not been previously available to them. Women who had been victims of domestic violence readily shared their experiences via we-blogs and the radio. However it was a challenge to get these women, and others, to attend support group meetings held at The Casa De la Mujer. The online clinic was established to cater to women’s needs to speak while at the same time heeding their desire to remain anonymous. Having been subjected to domestic violence, these women found it difficult to discuss their problems publicly or confide in authorities.

6 telecenters were established across three districts in the region of Santa Cruz. Around 100 women participated in the project activities and acquired training in legal issues related to domestic violence. The women learned to write blogs and how to handle legal procedures of cases of domestic abuse. They developed training content and virtual platforms, such as the web page capture shown on the previous page, that are still in use. The courses included education on raising their self-esteem, human rights, and introduced gender equality discussions within the framework of domestic violence. The women established forums at the telecenters to expand the number of end users. Casa de la Mujer successfully partnered with legal experts to guarantee the provision of legal advice to the abused victims. The virtual office offers anonymous consultations, which has led to a considerable increase in the number of queries from women who want to know how they can exercise their human rights<sup>7</sup>.

*“I am a useful person for society and for my family, I am a woman, I can defend myself, I have enforced my rights as a woman, and thus there is no domestic abuse”.*

- Participant in project

For many of these women the online network provided a sense of security. Using pseudonyms enabled them to share their experiences, and open up to other victims about their problems without worrying about being found out. Women gained self-confidence through knowledge of their rights, “I have more knowledge on how to defend myself and to assert my rights as a person”. Some victims found the strength to escape the isolated and repressed existence of victims of domestic violence.

*“Because of the project we have more knowledge about non-violence against women; we have increased self-esteem so that we don’t have to tolerate discrimination and abuse by man and that they will respect us as women”.*

- Participant in the project

## Impact on the women

In this particular project ICT formed a bridge between women who were suffering in silence and the help and advice they needed to stand up for themselves, as narrated by the women’s gratitude in the following statement “the online service clinic is very beneficial and accessible to women who need help to handle violent abuse. Thank you.”

The anonymity of the Internet enabled women to find information and sup-

<sup>7</sup> The impact of ICT in Bolivia in 2009: experiences of TIC Bolivia, published in 2008 by the Analysis of Social and Economic Policy (UDAPE) and the Interinstitutional Committee for the Millennium Development Goals (CIMDM). Page 6.

port without risking public admonishment and shame. The quotes above are testimonials of women who finally dared to “stop being afraid”. The project found that victims of domestic violence are paralyzed into silence by the fear of being identified. ICTs, however, are changing this situation as regular radio broadcasts featuring stories of domestic violence and the online clinic are slowly chipping away at the public, private boundary as the public exposure of real stories has given more women the courage to come forward.

*“I learned that I have rights, and that women can go ahead in life alone, and we do not have to stay in abusive relationships”.*

- Project participant

While the virtual space has changed the lives of abused women as in the case of the online clinic, the Internet has at the same time enabled cyber-bullying, cyber-stalking and other forms of violence towards women. Adam (2001) notes the helplessness that many victims experience which stems in part from the loose legal frameworks governing the online realms. It is not only the Internet that has a dark side. Women who have acquired mobile phones gain not only the possibility to communicate, but are also at the risk of being controlled or threatened if they communicate in ways that are not approved of by the men around them. A woman in Uganda was killed by her husband after she received a text message from a male friend that her husband perceived to be a little too friendly<sup>8</sup>. The fact that the same technology can be both a help and a threat to women underscores the social embeddedness of technology, i.e. that technology in itself is neither good nor evil but only an enabler.

## Challenges and way forward

The women who could not read and write faced various challenges with using the technology. This gap was addressed by developing training manuals and alternate forms of communication, using audio visual materials that helped to successfully integrate these women into the program. The website [www.casadelamujer.org.bo/](http://www.casadelamujer.org.bo/) requires regular updates, and has been a target to hacking exercises enough times to warrant special efforts being made to create greater security in the platform. Still the benefits outweigh any form of obstacle or threat for women like Stephanie.

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<sup>8</sup> This story was shared by Dorothy Okello, (PhD) director of Women of Uganda Network during Spider's Democracy Workshop in Stockholm June 2011.

## Putting knowledge to better use – Vietnam

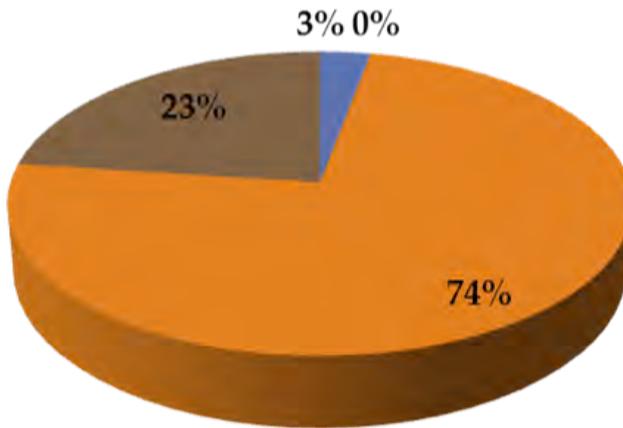
In the current era of economic globalization, productivity and manufacturing no longer abide to national borders. Computer parts are designed in one country, manufactured in another and often assembled in a third. The labels on the front and back of various forms of equipment tell a story of the geographic eclecticism of production cycles. The Asian high-tech industry has grown exponentially thanks in part to the global transference of the manufacturing processes. Not without its critics, this trend has transformed countries like India, China, Malaysia, The Philippines and Vietnam into globally reckoned producers of ICT. This section focuses on Vietnam who, like other Asian countries is becoming a seasoned ICT developer.

The Spider supported project “Putting knowledge to better use – industry responsiveness to gender differences in ICT demand in Vietnam” sought to inquire whether gender was a consideration in the design and production of ICT products and services. The results from the project are provided in broad strokes leading up to an analysis of the survey results.

### Does gender matter?

This project combined the expertise of the Research Policy Institute at Lund University (Sweden), The Vietnam ICT Association, the National Council for Science and Technology Policy (Vietnam) and the Research Center for Gender and Development (Vietnam). The main aim of the project was to investigate to what extent gender is taken into consideration in ICT demands in Vietnam. The project also sought to understand what obstacles existed to gender-specific technological development in ICT and whether

there was a viable business model aimed at women as ICT users. The focus was directed at companies in hardware, software and ICT services development in Hanoi and Ho Chi Minh City. The material was gathered through survey questionnaires, as well as personal interviews with the companies. The general findings indicate that while the number of women in research and development in ICT is increasing it is still low. Further, technology developers do take user perspectives into consideration, but give limited or no attention to gender-specific interests. The graph below indicates the distribution of responses.



Graph taken from the survey report - p.26

Of the 207 companies interviewed only 6, i.e. 3%, confirmed taking women's technical needs into consideration, while 74% did not differentiate between men and women (23% did not answer the question). None of the respondents (0%) had explicitly considered products exclusively to men. However, as mentioned in the introduction to this volume, men are the implicit norm and are therefore by default assumed to be the 74%. The project coordinators in Sweden and Vietnam concluded that women's needs "have mostly been considered when the inventor has been a woman herself" (Göransson, 2011). The survey also concluded that the enterprises do not differentiate between men and women's needs and that the products and services are not affected by whatever differences there may be within these two groups. The project commenced with the following assumptions, many of which were proven correct at the conclusion of the project.

- Women are poorly represented in scientific research in engineering fields
- Few women inventors, women as end users poorly taken into account

- Women’s needs only considered when the inventor is a woman
- Opportunities are opening up for women ICT entrepreneurs in Vietnam to develop products

In response to the current focus on women one might ask whether technology is gender-neutral. History studies of technology suggest that gender does matter and is often taken into consideration during the design processes. The microwave oven and the house telephone provide very good illustrations of how designers’ intentions can be subverted by the end users. The intention of the domestic telephone was not for “trivial gossip”, as explained by the designers, but for “practical business” and the development of this technology, as well as the marketing, was towards men (Wajcman, 1992). When the technology reached the home however, it was women who gravitated towards it as it enabled them to keep in touch with friends and relatives (Wajcman, 1992, 252f). The microwave oven was also conceived for young bachelors, as a convenient way to prepare their meals in minimal time. The technology was marketed alongside other ‘brown’ goods, e.g. stereos and hi-fis, that are considered masculine. However, it was not young men who took to the technology, rather women, which forced the designers to reconsider not only the design of the technology but the marketing strategies as well (Cockburn & Ormond, 1993).

These two illustrations indicate that technology is socially shaped and how people will relate to it and use it will more often than not differ from the intentions of the designers. The examples of the microwave and telephone also suggest that taking into consideration the preferences of the imagined end users is an important part of design and marketing processes.

The project thus argued for “putting knowledge to better use” with the further explanation that “the capacity for technological development [in Vietnam] is not fully utilized and that there is pent up innovation potential in the innovation system” (Göransson, 2011). It is specifically in respect to women’s preferences that the enterprises are missing out on a market share, something “that could be translated into a competitive advantage given that women represent a growing proportion of customers” (Ibid).

The ICT industry is a growing phenomenon in Vietnam and women dominate the production processes, particularly in the software industry. Wajcman & Le (2007) established that increased employment of women in previously male dominated professions in Vietnam does not necessarily entail equality between men and women. Instead, women’s skills are undervalued by placing women in “less skilled” positions “such as testing as opposed to programming and systems design” (Wajcman & Le, 2007; 1). The result is

that women are underpaid, and remain marginalized even when they have the same qualifications as their male colleagues (Ibid). While photographs from the surveyed firms show a high number of female employees this should not be mistaken for equality in the work space or any particular consideration for gender in design or marketing.

## Challenges and way forward

While the survey results revealed an increasing percentage of women involved in corporate research and development as well as corporate management, the same companies harbor doubts as to whether such a market for products specifically giving focus to women exists. This can partly be explained by the fact that the majority of the production of these enterprises is on a sub-contractual basis. Production is thus geared towards contractual obligations.



One of the ICT Companies that responded to the survey. Photo by: Ca Tran

Even though it is noteworthy to see women gaining entry to predominantly masculine professions, one should also question in what capacity and for whose benefit the women are engaged in these professions.

Thanks to this project, 207 Vietnamese companies became more aware of the benefits of having a gender aspect during their work processes. Some of them have expressed an interest in diversifying production to include specific requirements that take gender differences into account.

Liberal feminists may disapprove of and argue against gender specific technologies on the basis that these perpetuate differences between men and women. The production of pink phones or laptops that converge with “feminine aesthetics” may not so much bridge but further widen the technological gaps that exist between men and women. However, keeping in mind the examples of the microwave and the household telephone, it be-

comes evident how important it is to take into consideration the possibility of alternative user interests. In this case, catering to the varied market concerns provides a wider scope of expansion and profit for the manufacturers. At the same time, it also produces a sense of ownership among the end users. By knowing that their concerns have been taken into account, users may have greater interest in the product.



## Women's digital baskets – Rwanda

While Rwanda is the first country in the world to have 50-50 gender representation in parliament<sup>9</sup>, discrimination against women is still present throughout society in subtle and sometimes not so subtle ways<sup>10</sup>. Subordination of women, dressed up as adherence to culture, tradition and customary laws prevails in what for all intents and purposes, appears as a country and people committed to gender equality<sup>11</sup>. The formal sector and political structures, have adapted gender-friendly laws that support women in Rwanda, but despite the existence of laws that for instance prohibit violence against women, or stipulate equal access to land inheritance rights, unequal practices continue to favor Rwandan males. At the level of family structure married women enjoy limited civil liberties, which spill over to public transactions<sup>12</sup>. All this indicates that the culture is still male-dominated despite gender liberal legislations. The Rwandan government is fully committed to transforming the country to a middle income, knowledge based economic country by the year 2020, and has placed particular emphasis on ICT as a cross cutting priority. While the government spearheads this vision for 2020, the technical empowerment of women may remain constrained within socio-cultural values if a targeted approach is not applied to women.

### Digital baskets

This project was carried out over a period of two years from January 2009 to December 2010 and was located in Kamonyi district. With fa-

9 <http://www.idea.int/publications/wip2/upload/Rwanda.pdf>

10 [http://www.landcoalition.org/sites/default/files/publication/1159/RWN%20Policy%20Brief%2027%2010%2011\\_WEB.pdf](http://www.landcoalition.org/sites/default/files/publication/1159/RWN%20Policy%20Brief%2027%2010%2011_WEB.pdf)

11 <http://genderindex.org/country/rwanda>

12 <http://www.law.emory.edu/wandl/WAI-studies/rwanda.htm>

cilitation from Blekinge Institute of Technology (BTH) the project was implemented through “contextual learning” which entails focusing on current activities in the community and digitalizing the practices, thus placing technology in the context of everyday life. BTH worked together with Duhuzimbaraga Cooperative<sup>13</sup> an umbrella organization for handicraft cooperatives. 8 women were given laptops and digital cameras in order to capture the process of basket weaving. The women were taught how to use the camera to capture their basket weaving skills as well as the finished products. They were also instructed in how to upload the pictures onto computers and create a descriptive log for each basket.



Women's digital baskets - Rwanda. Photo by: Pirjo Elovaara & Kerstin Gustavsson

The explicit objectives of the project were the following:

- Bring together Rwandan women's everyday activities, with specific focus on traditional basket making and ICT
- To document traditional skills and knowledge of handicraft methods and products by creating digital presentations – preserving knowledge and skills and presenting them to a wider audience – that can also be used as training tool to teach and learn traditional techniques of basket making
- To create new business opportunities (e-business)

The success of the project at hand lies to a large extent in the fact that ICT was streamlined into everyday activities of rural women. The project used basket weaving, a practice that women were already skilled in, as a gate-way

<sup>13</sup> Duhuzimbaraga handicraft cooperatives changed their name to Forum of Handicraft Cooperatives during 2010

to introduce ICT. These women had no prior experience with computers or digital cameras. As such the learning process proved quite challenging and was further exacerbated by the fact that the women's domestic responsibilities took up a substantial amount of time (see Elovaara & Gustavsson, in this volume).



Women's digital baskets cooperative - Rwanda. Photo by: Pirjo Elovaara & Kerstin Gustavsson

The lack of support from local leaders compounded the existing challenges. With BTH in charge of the facilitation and training, the language barrier proved to be yet another challenge. However, this last challenge also proved to be an unprecedented opportunity. Even though the instructions were translated to Kinyarwanda, the local language, the exercise provided the women with an opportunity to learn English.

Despite all these challenges the women were determined to carry on with the project. The fruits of their efforts are illustrated in images such as the one the above.

### Women's Empowerment

In a wider perspective, the introduction of ICT into basket weaving had several benefits and outcomes. While ICT and basket weaving may seem worlds apart, bringing them together did more than simply prove that rural women can learn to use ICT, if only the activity that the ICT is applied to is relevant to them. The project instilled these women with the knowledge that their craft does matter and is likely to appeal to an audience that is both

wider and geographically remote from their current location. Capturing the weaving processes digitally will archive these disappearing traditional skills and ensure that they are available to future generations.

It is also important to explore, if briefly, what learning English means to these women. Rwanda is a Francophone country that has since the tragic events before and after the genocide begun a rigorous process of using English as the lingua-franca to break with the past and foster greater development. That rural women can claim some basic knowledge of this language, besides the local language and possibly French, opens up further opportunities for them in present day Rwanda.



Shared digital baskets - Rwanda.  
Photo by: Pirjo Elovaara & Kerstin Gustavsson

By capturing and sharing the weaving process and their finished baskets digitally, the women took the opportunity to share patterns with other members in their cooperative thus diversifying and expanding their practical skills. At the same time women also eagerly shared their computer skills with others. In this regard one skilled woman, both in weaving and ICT, passed on her skills to other women thereby multiplying the outcomes of the project.

The women initially struggled with the process of uploading their pictures. The difficulty was mostly found in the language of instruction. When the instructions were translated to Kinyarwanda the women managed the process with delight and incredulity.

Developing digital competence among rural women needs to be seen in the larger scheme of Rwanda's aspiration to become the Information society hub of Africa. Women who are becoming competent members of the Rwandan ICT-based knowledge society are part of this national goal. However, this nationwide process is counteracted by the tenacity of cultural and social traditions. The scepticism of the local leaders towards women's technical abilities, coupled with some of the women's own surprised exclamations "I never believed that I could learn things like this!" underscore the basic

assumption that women are not socio-culturally predisposed towards ICT. The new skills opened up possibilities for the women in society such as providing secretarial services to the community.



Women's digital baskets - Rwanda. Photo by: Pirjo Elovaara & Kerstin Gustavsson

This stresses the importance of women-centered initiatives. Despite the critical arguments directed towards such enterprises they are undoubtedly a source of empowerment.

### Challenges and way forward

By employing a bottom up learning approach, the women were encouraged to learn by doing. The ultimate goal was for women to design their own website and extend their market opportunity beyond their immediate vicinity. However, taking into consideration the fact that this was the first time these women had an opportunity to use computers, most of the time was spent teaching basic ICT skills, and content development remained only a remote possibility that never materialized into reality. For the women the most important realizations were, mastering ICT and relating basket weaving to technology. In other words traditionally female activities can be a point of contact with technology.

African women possess valuable knowledge that is most commonly passed on orally. ICTs enable a way to capture this knowledge and to archive the skills for future generations. The combination of cultural heritage and technology ensured that the skills could be documented for future generations. Basket weaving provided a context, a structure and delineating framework within which women could become familiar with a number of ICT skills, disproving the local leaders and dispelling their own doubts in the process.



## Empowering self-help groups in Kenya and India through ICT

The project “Empowering self-help groups in Kenya and India through ICT for better education and alternative livelihood activities” combined two very different realities in an approach that introduced ICT into women’s self-help groups (SHGs) in the coastal regions of the Indian Ocean in Kenya and India. The fundamental aim of the project was to alleviate poverty in coastal villages and activities were spread along the south eastern coastal districts of both countries. To “accomplish poverty alleviation/.../ a three-pronged approach involving basic education, capacity building in ICTs and promotion of viable livelihood opportunities<sup>14</sup>” was used. Coastal village communities rely heavily on fishing from the reefs, so promoting alternative livelihood activities that are environmentally sustainable would help improve the village communities’ food security and nutrition.

Coastal regions are plagued by environmental degradation that are a result of human action and the depletion of coastal ecology has a direct effect on the livelihoods of coastal populations. Research shows that the Indian Ocean coastal regions have experienced environmental degradation over a number of years (e.g. Patterson, 2002). Overfishing and the use of destructive fishing techniques threaten marine life and habitats, and by extension the livelihood and wellbeing of the local communities. The introduction of waste into the marine environment also interferes with the different species and processes. At the same time the literacy levels for the communities in these regions are extremely low, and employment opportunities limited.

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<sup>14</sup> Empowering Self Help Groups in Kenya and India through ICT for better education and alternative livelihood opportunities: Proposal submitted November 2006. P. 3

The communities depend largely on fish farming but very often use destructive methods that are a threat to the marine life (Patterson, 2002).

Focusing specifically on the coastal villages in the south eastern regions of Kenya and India, the project set out to promote alternative livelihood activities and build the communities capacity “to improve their socio-economic situations”<sup>15</sup>. The Coastal Oceans Research and Development Indian Ocean (CORDIO) in Kenya and Suganthi Devadsason Marine Research Institute (SDMRI) in India implemented the project to provide women’s SHGs with alternative forms of livelihoods. Nyköpings Folkhögskola developed pedagogical methods for the use of ICT in learning and awareness building referred to as the “folkbildning” or participatory learning method. This was a three year project (2007-2010) and the project objectives were:

- To introduce ICTs into poverty alleviation activities to support environmentally sustainable livelihood activities;
- To introduce adult education following the Folkbildning concept into Self-Help Groups (SHGs) and the activities of SDMRI and CORDIO to empower villagers associated with SHGs;
- To alleviate poverty and increase the standard of living in coastal communities by introducing environmentally sustainable alternative livelihoods;
- To develop collaboration between CORDIO, SDMRI and Nyköpings Folkhögskola in support of alleviating poverty and reducing the economic vulnerability of coastal communities.

There were different layers to the project as noted in the objectives above. Firstly, there was the interest to introduce basic education to the SHGs. The second layer was to introduce ICT into the project activities, and the third was to spread environmentally sustainable alternative livelihoods. The processes fed into each other successfully but the implementation processes were very different in India and Kenya due to the differences in the communication infrastructure.

In the coastal villages of Kenya there was no infrastructure for ICT at the commencement of the project and electricity was poor, at best inconsistent. As such the project had to address these gaps and acquire secure office premises before starting project activities. India had a well-established communication infrastructure and local churches provided premises for the implementation of the project among the SHGs. Owing to the different implementation processes the experiences in the two countries will be presented separately, commencing with Kenya.

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<sup>15</sup> Empowering Self Help Groups in Kenya and India through ICT for better education and alternative livelihood opportunities: Proposal submitted November 2006. P. 3

## Kenya's coastal SHGs

More than 89 women in the coastal villages of Kenya<sup>16</sup> were brought together with a small percentage of men who were also members of the SHGs. Given that fishing is a key activity in those villages, the project sought to empower women by introducing supplementary income generating activities to their families. This was intended to reduce over-reliance and pressure on marine resources. The infrastructure in Kenya was a challenge as none of the SHGs had access to electricity in their meeting areas. The e-learning materials covering numeracy, literacy and environment that had been developed were provided on XO laptops. These laptops had been used in other places for 'one laptop per child' projects and were well suited given their compact hardy frame that is able to withstand much handling as they were shared by group members.



SHGs using XO Laptops: Photo by Jane Atieno Nyanapah

The XO laptops also have long battery life which meant they could be used extensively after charging. However, given the small size of the screen, the text display is small, which proved challenging for group members with failing eyesight (ages ranged from late teens into 60s). Sharing the laptops was an advantage because it encouraged and demanded group learning which was one of the project goals.

Local women were employed as village coordinators at the ICT centers, which were run as income generating businesses. They offered photocopy and printing services as well as training, at a reduced rate compared to the fee paid by other members of the community. Mobile pay phones were

also provided to the SHGs as one of the income generating activities. This ceased with the introduction of small denomination calling cards for mobile phones (see Obura et al. in this volume), which increased the affordability of calling cards to the general public and reduced the need for these mobile pay phones.

## Empowering the women

Before this project, many of these women could not read, write or count. Through study circles the women met once or twice a week for group learning activities that focused on literacy and their livelihood activities as well as any other emerging social issues that were affecting them. These resources were designed in a way that the women could learn, take tests and have them marked through a software program. This was particularly useful for the women as they could decide the pace at which they would progress. Additionally, a series of live radio programs were carried out which helped generate interest among the general public with many listeners calling in.

Women learned to sign their names and read bus signs. Even though cultural barriers may persist in terms of full autonomy, basic literacy is a substantial empowerment. Furaha Rashid for example was thrilled that she could now read the traditional mottos printed on the 'lesos' and 'kangas' used by the local women.

The learning activities also exposed the women to alternative livelihoods, such as poultry and bee keeping, tree nurseries, ecotourism, farming and other small businesses. Poultry emerged as the most popular undertaking but the expensive animal feed, the limited market access, and the spread of diseases "prevented success beyond one or two cycles<sup>17</sup>". Undeterred, the groups shifted to other handicraft activities such as jewelry and soap making activities.

There are several success stories that have exceeded the project objectives. Women such as Binti Omanri, Mwanaasha Gema and Saidi Boga took up the role of office managers in their respective villages, and are in charge of the ICT facilities that were gained through the project. Binti managed to rally her group and four others to secure electricity and renovated office space for the center. To cover the overhead expenses, the enrolled students paid Binti a small fee, and the center also provides secretarial services to the area. Mwanaasha and Saidi's center went from breaking even to earning a small profit. Two group members from Gazi acquired formal jobs with the marine research field center in their area. One of these ladies later obtained

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a job outside her community and left the area. The Lolarako and Tulisubiri groups were trained in soap, shampoo, cream, lotions and hair food making. One of the groups produces 70 bars of soap per day, and are not deterred by the 12km trek to the market. Another successful venture has been the sale of 100 soaps in Sweden to a tourist guest house.

## Challenges and way forward

From the outset various challenges had to be addressed to achieve the objectives of this project in Kenya. The goal of the project was to use ICT as the backbone for education and development. However the communication infrastructure provided various limitations. The project encountered unreliable electricity and no infrastructure for ICT. That group members managed to acquire electricity for their centers is a very successful venture for the communities. But the lack of electricity in some areas meant that time and effort that could have been devoted to training activities was spent solving infrastructure shortcomings. Another challenge in the project was the evolving study circle leadership. Study circles require rotational leadership and achieving this was a challenge. Similarly, some of the group members were not interested in joining the computer classes which might have affected the forced group learning process.

Some of the women in this project struggled with using ICT due to age and failing eyesight. As discussed in the introduction of this volume, attributes such as age can have as equally influential impact as gender on the use and access of ICT. In this example women brought together to explore the benefits of ICT and education empowerment may be marginalized by their age or disability by the technology. The technical shortcomings are not insurmountable, in fact these can be solved by acquiring laptops with bigger screens. The example, however, illustrates that people have different physical abilities that need to be taken into account. The same example suggests that while addressing the gender digital divide, awareness of other attributes that are likely to marginalize groups within the same gender are important points for consideration.

## India's coastal regions

As the information about the project activities in India is very positive yet brief, this section is also limited in content. A total of 312 participants, mostly women benefited from the training program in five coastal villages<sup>18</sup>. Both men and women's literacy levels as well as awareness of the importance of protecting their environment were heightened. Some success stories exceeded the project objectives as seen in the text boxes below.

<sup>18</sup> The coastal villages are: Rajapalayam, Arokiyapuram, Siluvaipatti, Thirespuram and Inigo Nager

*Mrs Glory became a computer teaching assistant. - Women's empowerment in India.*

While some participants already knew how to write and read in Tamil, this opportunity allowed them to learn to write in English, this add-on effect was also visible among the Kenyan SHGs. The participants learned to read and decipher the bus schedules for themselves. They could also sign their names instead of using a thumb print and the women can now confidently assist their children with school work.

*Mrs Jeya and Ms Jemi acquired jobs as computer operators in jewellery shops. Ms Elisa was also employed as a computer operator for a private salt factory. - Women's empowerment in India.*

The beneficiaries gained access to group loans, extended their language skills by improving their English, and supported their husbands fishing practices by buying fishing gear. Some started small to medium enterprises, and in the second year proceeded with additional projects in worm-composting, sun-drying of fish, dress and bag making as well as production of washing powder and toilet cleaning agents.

*Ms Sophana was employed as a computer operator in the fishermen society of Tuticorin. Mrs Ananthi one of the coordinators of the projects, is also using her computer knowledge to assist her husband's cable TV operation. - Women's empowerment in India.*

Adding value services to the fish farming, such as hygienic sun-drying practices, opened up more opportunities for the beneficiaries. The trainees were also given saplings of fruit bearing trees, which they are maintaining in their backyards as part of the endeavor of greening the environment.

## Challenges and way forward

One of the challenges was the limited number of training sessions on environmental knowledge. While the environmental challenges prevalent in coastal regions were among the core reasons for the project, the environmental focus was of limited prominence in the training sessions. Thus while the project created alternative livelihoods for the women, most of them related to computer knowledge, the environmental challenges persist.

The project succeeded in improved livelihood opportunities providing women with basic literacy and numeracy skills which gave them a measure of autonomy.

## Technological and social sustainability

Having outlined the general outcomes of the projects, it is informative to consider the subtle nuances in the reports, and the silences that may reveal or help answer the question: what happens when donor funding comes to an end. Sustainability is crucial, as the continued empowerment of the women involved depends upon it. Both technical and social factors play a role and this section will round up the discussion by considering the technical aspects first.

The speed at which technologies are evolving is a point of concern for ICT4D projects. For example in Kenya, the project began with an investment in a mobile pay phone system that would enable women to generate an income by providing phone services to the community. However, six months into this initiative, mobile service providers introduced low unit phone credit services which made mobile pay phones redundant (see Obura et al. in this volume). Mobile banking was introduced during the second year of the project and during the third year the undersea fibre optic cable for Kenya brought down costs of mobile telephony and the Internet due to increased bandwidth. Recall that the project activities in Kenya had to be waylaid until challenges with the communication infrastructure had been resolved. During the three-year project cycle, the successive changes presented various challenges as well as opportunities.

ICT4D projects must also take into consideration the development and introduction of new technologies that may require considerable adjustments. How implementers deal with the rapid technological changes is specific to

each project. Connected to this point is the question: what happens to the technologies when donor funding runs out. If the Kenyan, Indian and Bolivian projects are considered here, the ICT centers established for each project can only survive with continued financial investments that will cover the overhead expenses. Research on the telecenter idea has revealed the vulnerability of many telecenters at the end of the funding period (Ebba Etta & Parvyn-Wamahiu, 2003; Gumede et al., 2009). The telecenters get by for a few years by charging user fees for the services offered and the projects in this report are following this trend.

Just as technological development needs to be factored into the contingency plan, so do eventual malfunctions, breakdowns and cumbersome maintenance procedures as a risk inherent to technological solutions. Maintenance and repair of equipment at ICT centers is often an unexpected and unforeseen practical and financial burden. Technical support is often located in urban areas, far away from the rural areas where many of these projects are located. This means that a broken printer may remain broken until the ICT support help from the city will have time or means to venture into the rural areas. When community users recurrently encounter broken technology for urgently required services, they eventually give up and stop coming (Ebba Etta & Parvyn-Wamahiu, 2003; Gumede et al., 2009).

The challenges are not just technical, but extend to the social dimensions. The projects in India, Boliva, and Kenya and only to a certain extent in Rwanda, all employed the approach of Training of Trainers (ToT). This entails training a select number of beneficiaries with the intention that they will in turn pass on the acquired skills to others. The challenge with this framework is that the skilled beneficiaries will leave for greener pastures, before passing on the knowledge to their peers.

Another social aspect to the projects is the specific focus on women. This volume commenced with understanding gender as a relational concept. The implication is that there are two or more involved parties in the relationship. The exclusive focus on women is justifiably understood in all the detailed projects. For instance, it is highly unlikely that projects such as the online clinic for victims of domestic violence in Bolivia would have achieved the measure of success it did, had it not focused on the women. At the same, focusing on victims implies that therein exists a violator who is not problematized. The challenge identified here is that the violators are rendered passive or hidden in the formulations.

This veers the discussion back to the understanding that even men are gendered and should be recognized as active agents in the approach to gender-

ing processes. One way to do this is to write about them as active agents, to make sure that they do not disappear from the discussions.

### Concluding remarks

Each project focused on a particular area of importance for the women, and using ICT to address the issue at hand helped demystify technology to the women. The projects succeeded in establishing technology as a socio-cultural enterprise that is interdependent with society. Success of women-centered projects in general hinges on the ability to ensure that the technology is adapted to suit the women's reality.

The women's digital baskets project in Rwanda used a craft practiced primarily by women, basket weaving as the entry point through which rural women in Rwanda were introduced to the digital world. The female indigenous leaders and the victims of domestic violence in the Bolivian projects have moved from positions of vulnerability to assertion, striving to change their circumstances. The different ICT platforms provided women with the tools and abilities to address their situations. Prior to their experiences with ICT the women lacked access to information that perpetuated their positions of dependency.

However, it is not the ICT but the courage of the women that enabled them to take the stride outside of their confinement. It is important to be aware of the continued challenges that many of these women will face in the future. For many developing regions, assertive women run the risk of being ostracized as this challenges the structures of male dominance.

The CORDIO project in Kenya and India focused on empowering coastal communities with alternative livelihood activities. In the process of introducing different activities, the women and men acquired English skills and improved their levels of literacy. For the women this opportunity improved their level of autonomy. The alternative forms of livelihood activities gave the coastal communities extended options regarding food and security.

The research project in Vietnam sought to inquire whether gender mattered within the research and development sectors of technology manufacturing in Vietnam. In other words, were women's interests a consideration during the conception and production cycles in the Vietnamese ICT manufacturing sector? The research revealed structures that perpetuate the failure to recognize women as important consumers.

These projects illustrate the effect of gender power relations on intervention and innovation processes of technology. Which means that for women

to engage with ICT understanding the structures that order their lives is an important point for project implementers. These projects reinforce the understanding that technology is not gender-neutral and to encourage the participation of more women, targeted approaches must continue.

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Empowering Self Help Groups in Kenya and India through ICT for better  
education and alternative livelihood opportunities:

David Obura, Sarah Ater, Stephen Oluoch, Brigid Mibei, Jane Nyanapa, J.K.

Patterson, Jamila Patterson, Britt-Marie Sundell, Eva Linden

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Agreement CORDIO and Spider

## Ordering Messiness? – Diffracting an ICT-Project in Rwanda

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### Challenges of Writing

Moving back and forth between the ICT project “Women’s Digital Baskets in Rwanda” (2008-2010) together with a need to discuss strong personal embodied experiences has convinced us that a smooth linear story would not work. So in that case, how to think and most of all, make any sense, about the assemblages, layers and multiplicities of the project? In our search for notions and concepts that could support our desire to keep the complexity alive we approached Donna Haraway, the creative but extremely challenging feminist technoscience scholar. Among her many figurations we found and agreed upon the notion of diffraction (Haraway, 1999, see also Alander, 2007).<sup>19</sup>

Diffraction invites to avoid singular, linear unified narratives, but quite contrary reminds us that a story, even if at first sight coming from the same location and context, is allowed to be full of differences and contradictions. This also applies in a singular narrative taking its point of departure, as in our case, from a one single occasion. Things, whatever they might be, can be and are both-and, not necessarily either-or. Hence, the reader might

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<sup>19</sup> A more elaborated discussion of the diffraction figuration in feminist studies can be found for example in Sefyrin, 2010.

experience this article as not providing a complete and coherent story, where our experiences and thoughts would point to same identical directions. Quite contrary the threads in the text might confuse the reader leaving her/him with a lot of uncertainty and unanswered questions. This is not a coincidence, but an intentionally diffracted story of a project that contained amounts of joy, disappointment, confusion, happiness, excitement and emotions. Our aim is that we in this text can, at least partially, share all this with the reader, even if it would mean leaving the reader in a condition of confusion.

## A Project for Women?

Chandra Talpade Mohanty, professor in Women's Studies at Syracuse University in USA strongly and decisively problematizes the idea or an illusion of global sisterhood in her book "Feminism without borders" (2003, 2006)<sup>20</sup>, that women just being women have some universal and common experiences and interests regardless their ethnicities, locations and positions in the world. In her critical analysis of the idea of universal sisterhood she identifies two dominating but problematic positions preserved for women: the position of victim and the position of the truth-teller. Being a woman, wherever in the world would mean that she carries experiences of oppression which automatically would lead to resistance. The second possible univocal position available is to consider women's experiences as something authentic and hence truer, because they were born in the margins, outside patriarch power centres. For Mohanty the notion of a historical universalism is however not possible. But this does not mean that she wants to throw away 'feminist politics of engagement' (Mohanty, 2006, p. 141).

If we take this criticism seriously we also have to take our only for women project seriously. Was our project based on a false idea of womanhood understood as women wherever they/we are and whatever they/we do have something in common just because they/we are women? That our previous experiences from Sweden working with a number of various projects with groups of women would unite us with the basket making women in Rwanda? That the similarities based on our experiences of womanhood would be enough?

Even if we, through our personal experiences and research, had identified exclusions of women in various ICT-policies and projects both in Sweden and Rwanda, we asked if these identified exclusions in could themselves provide a base for joined feminist actions without a need to think and be aware of complexities connected to the notion of solidarity. Were we seri-

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<sup>20</sup> In this text we have used the Swedish translation of Mohanty's book, published in Swedish year 2006

ous enough to think of the notion and importance of differences, in relation to interests, perspectives, goals and experiences (Mohanty, 2006, p. 129) or did we get caught in the net of 'good will', willingness to do good things, or things we think are good (Mohanty, 2006, p. 129). Did we raise enough discussions of the politics and practices of women in Rwanda; did we seek contacts with women's movements in Rwanda? Our project focus was on ICT understood mainly as a computer technology; we had only limited time and we were eager to reach the goals of the projects as formulated in the project application. All these factors pressed us and even if we several times could feel the need and urgency to find contacts outside the project, to learn of and listen to women's lives and activities in more general terms in Rwanda, we never managed to do it in practice. However, the contacts and discussions with the co-operatives told us that the project also went beyond its own borders. Even if our project did not cause a huge immediate process of change, it made anyhow a humble intervention (Haraway, 1991) showing possible paths to new imagined and unexplored futures.

When turning back to the concrete project activities, understood as on-going sociomaterial intra-actions, we can identify several gender cuts made (Barad, 2007). The final dissemination conference autumn 2010 was a platform of bringing the participating women's newly gained skills and competences into the local context. At this very same occasion, a first explicit gender cut was made by the local leaders arriving to the conference extremely late – in deed 2 ½ hours after the scheduled starting time. Women's new skills and competencies were openly questioned by the local district leaders but immediately contrasted by the women by powerfully showing their capability and willingness to take place in the ICT-world. By doubting women's computer skills and by coming late the leaders were trying to push women into margins. "Do you really all know how to use computers?"; the leaders asked. - YES! - answered the women. These questionings took place in a country of official gender equality policies and in a country being also the leading nation in the world when examining the number of female members of the parliament (see e.g. Women in National Parliaments, 2011).

Also the female project members made their own gender cuts. This time connected to the relations between women and ICT: "I who have no education, I did never thought I would learn this..."; replicated one of the women participating in the project. She referred to ICT as a field of technology belonging thereby to well-educated young men living in the urban areas.

We also got comments about our project when we met young, well educated, middle class persons in the capital of Kigali, comments especially directed to the fact that we worked with ICT with low-educated women in the rural

areas. “It cannot work, it cannot be possible, why do you waste your time with these women with no education - they will never learn anything about ICT and computers” was the red thread in these city people intersectional<sup>21</sup> comments. In these discussions our own gendered women bodies seemed to pay a subordinated role. Instead other intersectional cuts such as having access to economic and cultural capital formed a framework for equal discussion partners. However our sincere commitment to our women only focused project but also a project for low educated, economically poor and rural women was a challenging and confusing actor among the city elite.

## Technology Transfer?

A question that has to be asked is, what technology – did we quite physically carry with us through several airport security controls. Is it once again transferring Western ideas about skills and knowledge to a context which we have learned to call developing countries? A question strongly formulated also by feminist post-colonial science and technology studies. The key criticism raised against the Western technology transfer ideology and practices and the great narrative of it concerns that “[...] transfer of Western sciences and technologies and their rationality to the ‘underdeveloped societies’ would bring progress to the Third World” (Harding, 2008, p. 130). The new directions shown by post-colonial science and technology studies talk about the need to re-examine the origins of the Western sciences and technologies, critically re-evaluating the politics and practices of the North and hence the indigenous and traditional ways of knowing and questioning the notions of value and culture free Western sciences and technologies. (Harding, 2008, pp. 131-141).

One central part of the post-colonial criticism is about examining the third world development practices, where the promises of modernization, humanitarianism, transfer of scientific rationality and technical expertise, also including the ideology of democratic political forms have been in focus. The demands have however travelled from North to South and so also the economic and technical resources (Harding, 2008, p. 143).

Post-colonial science and technology studies have however provided ways not only to strongly criticize the dominant Western and Northern ‘imperial’ and ‘colonial’ (Harding, 2008, p. 143) practices, but are also able to provide trajectories for change: multiple ways of knowledge integration, delinking South from North, using other than Northern cultures as models and also a collaboration between South and North (Harding, 2008, pp. 148-151).

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21 For an introduction and discussion of intersectionality see e.g. Wamala, 2010

And what is our response to this discussion? Computers, coming from North and West accept and include some forms of knowledge and exclude some other forms. How things, ideas and thoughts are sorted out are not innocent representations of knowledge and knowing but also knowledge producing systems in themselves (see e.g. Bowker & Leigh Star, 1999). How well do these fit in the local knowledges, ways of knowing? The visual computer interface systems, for example, are based on and re-produce the idea of an office with its archive system including even a symbol of waste paper basket. Besides this bureaucratic way of organizing things, the computer systems also expect that the users are coming from environments working with paper and also with experiences such as type writers, files, writing, copying etc. We can also talk about the dominance of the English language; and even if the operating system might have provided access to other languages, our competence was enough only to handle the English version. Why do computers not speak Kinyarwanda (the national language in Rwanda)?

Our project was without doubt about very traditional technology transfer, and hence a target for critical inspection. Issues of knowledge, knowing, expertise, what counts and whose knowledge counts, what is regarded as important, on whose premises, the pre-understanding of the superiority of Western ideas of rationality modernity, and various form of inclusions/exclusions - they was all there.

When talking about ICT in a Rwandan context is on one hand to talk about ICT as an immutable mobile; it seems to keep its shape wherever it travels (see e.g. Elovaara, 2004). ICT-policies seem to be immutable mobiles. When studying the Rwandan ICT-policies we find similar thoughts about modernization, rationalization and efficiency as in the Western/Northern ICT-policies (Rwanda Government. Nici plans, ). Also the note books that end up in small rural villages in Rwanda seem to be the very same we have placed on our desks in our offices. But at the same time they – the note-books - are not same because the Rwandan sociomaterial practices, such as infrastructure, political conditions, gender relations are not the same. So ICT seems to be both same and different. We have also the intriguing phrase “...more than one but less than many.” (Law, 2002).

But isn't there also a vision of bringing together different knowledge systems? Not a grand one but a vision of thinking how Western digital technologies could work together and collaborate with traditional ways of knowing, in this case skills of making baskets? Can one really weave a fabrique of digital technologies, computers, cameras and web pages and local knowing in handicraft practices? Do Western digital technologies want to work to-

gether in accountable ways with basket makers dreaming of new patterns, new forms and new ways of making their living without having to lose the local knowledge?<sup>22</sup>

### Materialities - Artifacts, Infrastructure, Whiteness...

Technology is a demanding actor. It needs electricity even when there is no electricity available. A generator using gasoline makes a lot of noise. It accepts extension cords, which in turn accept charging the mobile phones. The generator strikes continuously. The batteries of the note book do not get charged. The windows of the room accept the sun light to come in, which makes it impossible to show projected slides on the wall. The bed covers will be turned to curtains. The small buttons of the digital cameras do not hesitate to obey the users' unexpected commands. The taxi car transporting us breaks down and makes us wait. A camera suddenly starts to speak Russian. The photos on the displays of the digital cameras are suddenly upside down. The electricity cables are worn out. Documents written on the note books disappear. Three hundred meters away from our workshop location a high 3G-mast stands and delivers mobile Internet for those who can afford. It does not share its power to the nearby village, hence not either to our project, without access to electricity, the power generator starts to work and the project participants' mobile phones can be charged.

What does all this mean? To make the technology work is hard work. It takes a lot of patience and improvisation and also skills. The technology steals time and demands a lot of care. The relations with its care takers are not always that friendly. To learn to live with technology does not come easily. What emerged out from the project workshops was not always what we, human actors, had planned and wished, the technology forced us to take several detours.

Karen Barad's (2007) notion of intra-action refers to the agency of both humans and non-humans. Artifacts and technology are not only passive objects but performative agents. Intra-actions are located and situated in specific sociomaterial practices – apparatus - according to Barad's terminology – with various entities, a.k.a. humans and non-humans. It is these relational intra-actions, various and diverse material discursive practices, that produce different phenomena where also the boundaries are drawn and where the meanings attached to these boundaries are also produced. (Barad, 2007, see also Sefyrin, 2010, Lenz Taguchi, 2010).

Even if Barad's notions come from physics they are helpful in understand-

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<sup>22</sup> For an interesting article about cultural hybridization, see e.g. <http://en.wikipedia.org/wiki/Hybridity>

ing the strong agency of materialities participating in our project. In the concrete everyday project activities they really made things possible or impossible. They also enforced or discouraged the agency of the human participants. But other cuts were also made in other sociomaterial practices. The non-presence of electricity in villages, the Western metaphors of computers, the dominance of the English language were also actors present in our project, even if they were outcomes of cuts of other sociomaterial practices.

Another piece of materiality entangled in this story is the colour of our skin - the whiteness<sup>23</sup>. The whiteness makes us two rich (economically), knowledgeable, privileged, and different. It is an actor we cannot ignore, regardless how much we try. It gave us access to taxi transportations instead of walking or using a motorbike taxi – a more unsecure and dangerous means of transportation. It gave access to living in a house with electricity, cold and warm water and wireless Internet. It gave us access to restaurants, gym, and a nice cup of cappuccino. It also gave us access to a flight ticket to take us away from Rwanda. It gave us access to define the project.

Michael Hame-García (2008) writes in his article “How real is race?” that “bodies do not have inherent meanings. Yes, given the physical properties of bodies and politico-economic practices, one cannot attach just any meaning to anybody. In other words, the body is something more than an inert, passive object on which ideology inscribes meaning, but rather it is an agential reality with its own causal role in making meaning.” (Hame-García, 2008, p. 327).

The whiteness of our bodies is not an issue for us in Sweden, because we live our daily lives in a white context. The meaning attached to the colour of our skin at home, is the notion of sameness, we do not differ from the majority of other skins. That tells us and people around us that we belong to the place, the whiteness gives us legacy. But this is something we usually do not reflect upon; the colour of our skin - the white colour - becomes explicitly significant only when it ends up in situations and places with other colours of skins. Our white bodies matter in Rwanda. Meanings get connected to them; the agency of our bodies is different from that at home. The light skin matters, still. We cannot wash it away. We are stacked to it and it is stacked to us. And so are also the meanings of it.

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23 More about critical white studies, see e.g. an article by Lena Näre on <http://etmu.protsv.fi/blogi/?p=130>

## Practicalities and Dilemmas of the Project

When summarizing the impressions of the project itself as it was conducted; the activities, training and testing sessions, and our pedagogical ambitions based on feminist ideas of learning and teaching with its principals of “empowerment, reflexivity, power, and participation” (see e.g. Goodman et al, 2003) we could claim that the project was successful. When interviewing the participants and also reflecting upon the final dissemination conference lead by the participants, the very computer skills were there and also a sense of being proud and happy for the feeling of being able to learn something that in the beginning was experienced as something extremely difficult. The sense of achievement was also present at the final conference when the local leaders could not quite believe that all participants had gained computer literacy and when the women univocally could raise their voice and say: yes we all can!

What other things and thoughts did we leave behind us when the project was finalised? Nine small computers, demanding maintenance and electricity - both non-existing? Expectations of the participants, beyond the formulated project goals? For the participating women this project was a vague promise about improved markets for their baskets, for us the project was about digital documentation of cultural heritage. These differences in expectations created a dissonance we had great difficulties to handle.

Summarizing our reflections and bringing in crucial issues of accountability and sustainability (see e.g. Haraway 1991), the whole project can be problematized. And perhaps not only this project, but ICT projects like this? Remembering that we have our background in conscious gender equality and feminist landscapes of ideology, practice and theory, it is amazing how vague our conscious reflection was concerning our own situating. Did we not really understand the problems connected to short time projects, questions of continuity and ownership? Or did we understand them but were too mesmerized by the opportunity to do something of our own, not doable in our own contexts and environments? But is this really a closed story?

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# CORDIO Project: Empowering Self Help Groups in Kenya and India through ICT

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## Project Summary

The clearest synergy in the project emerged from the mutually supporting benefits of education through the study circles and providing ICT Infrastructure and training to the same self-help groups and through the same mechanism. Less clear benefits were achieved for livelihood activities, as these succeeded only where other (external) conditions and constraints of the local environment, socioeconomy and access to the right technical expertise were met. The core of the project is captured in the first part of the title “Empowering self-help groups”, identifying empowerment as the overall goal. This was achieved most clearly for women in the self-help groups, and the empowerment they gained through learning to read and write, sign their names, count their earnings, and manages the affairs of their groups. An outcome of this achievement is their ability to choose and develop more sustainable income generating activities, and reduce poverty in their families.

Learning from this experience, and preparing a further phase of the project, we identify the following three steps, in order of importance, to achieving the goal of empowering women and self-help groups:

- Make the Folkbildning study circle the foundation for learning and building capacity;
- Capacitize these through provision of ICT through rural/ICT learning

centers, supporting one or more study circles and their broader community;

- Through local knowledge and experience, and transfer of appropriate technology, identify sustainable income generating activities using the study circles and ICT infrastructure to make them accessible to beneficiary groups.

## Introduction

This project was implemented by partners from Kenya, India and Sweden over a three year period, to empower community members through support to Self Help Groups (SHGs). We focused on women's groups in the coastal areas of Kenya and India. The project goal is to improve the welfare and wellbeing of coastal peoples, and the approach selected was to build 3 supports for greater welfare- access and capacity building in ICT, enhanced and more appropriate education and appropriate sustainable income generating opportunities.

In India five villages were selected where women formed SHGs, with a total of 312 members, under the umbrella of the local churches, which had a main focus on savings and loans to members. In Kenya, 10 existing women's SHGs spread among 5 villages with 285 members were selected, but with no existing umbrella structure between them. The India groups had a history of working with the partner, SDMRI on livelihood and group empowerment activities, and the project enhanced this relationship with ICT and education support. In Kenya, the early focus was on establishing relationships between the groups and CORDIO, and developing an appropriate framework to embed the objectives of the project.

### **Project villages:**

India: Siluvaipatti, Rajapalayam, Arokiyapuram, Thiresuram and Inigo Nager;

Kenya: Bongwe, Gazi, Kibwaga, Kirudi, Magozonl, Makongeni, Muhaka, Mwamambi, Mwamlongo

### **Project area 1- ICT**

Using ICT as a backbone for development is the primary goal of the donor for this project, and a primary foundation for the project. Overall, we found the following: Infrastructure Is critical-India has a well-established electricity network, and the church-SHG network was strong, so establishing ICT facilities was straightforward. The church leaders provided space for the facilities while the project employed local women as village coordinators to help in teaching at the village level. In rural Kenya, the electricity network is poor and there was no infrastructure for ICT. The project had to get in-

volved with supply of power, selecting an office, security, and management of the office.

**Group and project management** - In some cases, groups were mature enough to undertake managing a computer and office, in others the local administration provided a foundation to assist with this. Project Management Committees comprising of the office manager and group members were set up to oversee the functions of the computer/office while the local chiefs in the various areas arbitrated in case of conflicts.

**Training** - ICT training was provided to selected beneficiaries by a computer training institute. In India, the beneficiaries of training were village coordinators, in Kenya each SHG nominated two members to participate. Those trained were expected to serve as trainers to their peers. In India training was very popular with students from nearby schools, with almost 350 students trained compared to 130 adults (half women). In Thiruppuram, for example, as many as 74 students were reported as regularly attending computer classes. This was also found in the Kenya, though with lower numbers (102 trainees with two thirds of them being women)

**Communication** - some of the Kenyan and Indian women who have learnt how to use computers occasionally communicate with the Swedish team through email, often requiring translation among team members between Kiswahili and English. The Gazi study circle leader continued to communicate with a Swedish intern (Johanna Thidell) through email on her return to Sweden after her internship focused on capacitating the study circles in Kenya.

**Empowerment** - ICT training was conceived to help the groups with their income generating and group activities. In both countries, however, there were additional unplanned outcomes from individual to group and even between-group levels summarized in the narratives section. Depending on the case, the ICT training included aspects of record keeping, numeracy/literacy and managing the computer system, enabling the beneficiaries to upgrade their roles in the community and provide a service to their groups.

## Challenges and lessons

- Inadequate infrastructure in Kenya led to delays and high costs of project setup; however these challenges can be overcome in project design, and in targeting activities at the appropriate level. One group ceased provision of ICT services due to non-payment of their electricity bills; this is likely due to leadership conflicts and access to money within the group. Greater empowerment of good leaders from within the groups

is a key to success, enabling them to streamline the group activities and improve benefits to all

- The ICT landscape changes rapidly over the duration of a project such as this. In Kenya, one of the initial investments, in mobile pay-phones, was rendered obsolete within 6 months by the introduction of low unit phone credit by service providers, making it possible for almost anyone to top up their own phone. In the second year of the project the same service provider introduced cash transfers by mobile phone, and now mobile-linked bank accounts. In the third year Kenya the commissioning of the first undersea fibre-optic cable for Kenya is opening up bandwidth and bringing down costs for both the Internet and mobile telephony, and opening up new opportunities. Continually adapting a project to such a rapidly changing environment has been challenging, but provides a lesson in how project objectives need to be the priority for implementation rather than the specifics of project activities if these are rendered obsolete because of a changing environment.

## Outcomes

The provision of computers and mobile phones has clear benefits to the groups, but getting the ratio of computers to members to training opportunities right is a challenge. ICT centers can serve as general and computer learning centers for the communities around them, a source of income for the groups and provide job opportunities for those manning them. From the single computers provided to groups in this project phase, we see increasing the number of units, and providing other learning resources (see education section) as a key platform to support SHG development. With the increase in the number of group members who can use computers, groups can be encouraged to use the computer facilities for more activities, such as record keeping and filing.

In Kenya, XO laptops (one laptop per child) were used to supplement traditional computers and were well received by the groups due to their portability and long battery life. Due to their relatively lower cost (approx. \$200 per unit), they provide an opportunity for more people to access computer facilities even when electricity is not immediately available. Security is, however an issue. Communication- greater use of communication tools within the project was encouraged, including sms, email, and Internet tools. In the future, we will encourage communication among SHGs and between the countries such as through social networking sites to share experiences between group members in Kenya and India. This will also increase access to marketing opportunities for group products, and to Internet-based services.

## Project area 2- Education

In this three-year project, we were able to translate the Swedish Folkbildning concept to be applied in India and Kenya. In development terms, it is “participatory learning”, and in this context fits very well with community traditions of group and democratic discussion and decision-making, as well as the objectives of poverty alleviation at village levels.

Through initiating workshops led by the Swedish team, 1 or 2 additional visits to the field sites and SHGs in Kenya and India, and the assistance of Swedish student interns to the field sites, we were able to adapt the practices to serve the group needs. In the end, the term “study circle” came to be used. In Kenya, the SHGs used the study circles to identify their priorities for education- reading, writing and numeracy, in addition to narrower aspects related to, for example, their income generating activities.

In India, teaching was led by the village coordinators and picked up faster through the already established networks, reaching 348 learners. In Kenya, staff from the local Adult Education department were involved, along with group leaders. Supporting a study circle leader was an issue in both countries while some village leaders may volunteer, for experienced leadership some monthly support was found necessary in both countries, though at manageable levels of about U\$ 15 per month. In both cases previously illiterate women reported an ability to read and write basic sentences as well as append their signatures instead of using thumb impressions.

In Kenya the study circle concept was ‘localized’ through CORDIO’s Education Officer, who has a Master’s in Education, and a project intern from Sweden. The intern first translated and adapted some Folkbildning documents to local needs from Swedish to English, and then project staff and study circle leaders adapted this into Kiswahili for use by the groups. Through our project staff, local government officers and the study circle teachers, we were able to integrate the study circles with meetings of the SHGs, training they received on ICT and training for their livelihood activities. By using the study circle methodology, which is fundamentally egalitarian, as a prime tool for group organization (one meeting a week for the study circle, one meeting for livelihood training) groups appeared to value the learning they received and the coherence they achieved as a group. The groups came up with the Kiswahili term ‘mduara wa mtwaala’ as the translation of study circle.

## Digitally-accessible media

To support use of computers in the study circles, in Kenya we commissioned an education software developer (Avallain) to develop content on literacy/numeracy and marine environmental education. Their package is hosted on the XO computers, so also provided a test for using these as hand-held education aids more like books, compared to desktop computers sitting on a desk and less accessible to communities more accustomed to sitting in a circle on the ground. The learning resource covers aspects of progressive literacy and numeracy as well as information on marine and coastal resources.

The materials, which are available in both English and Kiswahili, have been installed at all group ICT sites for members to use and have also been made available for distribution on a CD. Outreach for the project was trialed through an additional medium, radio, on a local radio station on Kenya's south coast. A series of interviews were run with group members/ in the local language- Digo. The radio program generated a lot of interest from the public with many callers responding to debates and asking questions during live transmission. These media can be re-broadcast and made available through the Internet, and will be put up on CORDIO's website to provide greater access.

## Outcomes

After 3 years, the most solid outcome of the project in both countries, focused on women, is basic literacy and numeracy. In both countries adult women and have since been able to graduate from using thumb prints to writing their names. Additionally, they are able to read basic instructions such as bus names hence increasing their level of independence e.g. when travelling. While this is not the primary objective of the project, scaling up and being able to deliver this outcome, with all the benefits that follow to the women and their children and families, will remain central to the project. Though teaching in the informal sector, providing ICT and access to broader resources has enabled some beneficiaries to participate in the formal education sector- some of the adult learners in Kenya were able to register for the national basic literacy exam and those who passed will be progressing to the post-literacy stage. Learning to read/write and at the same time learning how to use computers shows great potential for enabling beneficiaries to leapfrog some of the barriers to crossing the digital divide.

The Folkbildning approach appears to be a perfect match to the growing focus on community-based development and empowerment in developing countries. Following translation and adaptation of a guide, it can be shared with groups, adult education teachers and implementation projects who

can be encouraged to adopt the study circle concept. Its value appears to be that it transcends the groups' narrow interest in income generation by offering real education in a total sense. This does not undermine the importance of income generation, but rather expands it by opening up more possibilities for empowerment and diversification of household income/livelihood security. Study circle leaders who are now well versed with the concept can serve as facilitators during training sessions for other study circle leaders, providing a multiplier effect to reach more beneficiaries.

The development of e-learning materials and their use by study circle members also provides opportunities for scaling up, and shows how well ICT facilities can be used as teaching and learning aids. Components covered innumeracy, literacy and environment are relevant to both Kenya and India and their translation into Tamil and other languages would make them more easily accessible within the context of this project, and more generally.

Radio outreach on topical issues was well received as indicated by the number of callers during the live sessions. These have potential to reach wider audiences and the general public who are not necessarily directly involved in project activities or living in the project areas

### Project area 3- Alternative livelihoods

Since improving income was a primary goal of the project, support for alternative livelihoods was one of the priorities for capacity building and seed support from the project. The following lessons were learned.

**India** - the already established group network enabled access to cheap loans (repaid at 1% interest rate) from the local banks as a result of government policy promoting access to micro-finance facilities.

Beneficiaries spent this money on better education (such as in a school where English is taught), to support their husbands buy fishing gears and vessels as well as paying for dowry for their daughters, running small businesses selling foodstuffs, clothes, bicycle repair, tailoring and design. During the second year of the project, all five groups took up additional projects in worm-com posting, hygienic sun-drying of fish, dress and bag making as well as making washing powder and toilet cleaning gel.

**Kenya** - the SHGs ranked six activities (IGAs) as the highest priority- poultry keeping, small business, tree nurseries, bee keeping, ecotourism and farming. The groups had mixed results with these, particularly with poultry farming, which was selected by 5 groups as it is successful in some settings in small to medium sized towns in Kenya. It was not successful in this rural

setting- in spite of exchange visits, training sessions by a livestock officer and financial support, the cost of chicken feed, limited access to markets and disease prevented success beyond one or two cycles. These groups subsequently shifted focus, with one now making jewelry from recycled paper, and another making mats, another seeking micro-credit access, and soap-making venture.

## Outcomes

A clear lesson from these activities is that successful income generating activities must grow out of real capacity and have strong linkages in the local setting. Seemingly lucrative opportunities, such as poultry farming, require too-large steps in terms of technical capacity, capital and market access for these SHGs to succeed. Activities that require smaller incremental steps may be more successful as they are less foreign to the beneficiaries to start with, and require a proportionately lower investment in time, finances and effort. This latter is important, as if the activity fails, the amount lost is also less, and the individual or group is less inhibited from continuing with other activities, or trying something else. For example, though not tried in this project- in India, crab fattening has worked as it capitalizes on the women's husbands being fishermen, and supplying a local demand for cheaply grown crab. In Kenya, it has not worked, as there is no local market for small crabs, only a restaurant market for large crabs that take too long to grow, with high risks of loss and theft. Soap making has shown success as it combines many of the above qualities, and the path has been paved by other community groups and NGOs. In Kenya Lolarako and Tulisubiri group members have achieved the capacity to make 70 soaps per day, with an adequate market. However the products do not bear a national standardization mark, so access to more markets is restricted. Some possible next steps in this activity are diversification of soaps (such as with Aloe vera), further training, cultivation of key ingredients, standards labeling and improve marketing tools (such as brochures and banners for local use, and a website for general information).

## Narratives of success

The greatest synergy for success stories came from the interlinkages between ICT training/facilities and study circle education. Livelihood activity successes were less integrated, as they tended to come from an activity that is successful/sustainable in the local context.

Three examples are:

Tulisubiri SHG (meaning “we were waiting”, Kenya)- Binti Omari undertook the ICT training and has since taken up the role of office manager in her area, Tiwi. As office manager, Binti is in charge of the JCT facilities do-

nated to the groups through this project. Binti's group teamed up with four other SHGs and approached the local chief of their area to provide some space for the ICT facilities. Through this grant, electricity was installed and a section of the chief's office renovated and secured to serve as a local office for the five groups' JCT activities. The office provides typesetting, printing and photocopy as well as telephone services for the people in the area. As there is much need for documentation by local area residents visiting the chief the office services generate an income to pay the office manager, cover electricity bills and replace supplies. Additionally, Binti has enrolled 7 students, three of whom are group members. All students pay a registration fee of approximately 3 USD and a similar monthly access fee if they are group members. Non group members are charged a higher access fee of approximately 7 USD.

Kaya Muhaka is a mature SHG, with Mwanaasha Gem a and Saidi Boga receiving the training, and serving as office managers. Through good record keeping the SHG is not only breaking even but also able to report some profit. 13 computer students are enrolled at the group site and regularly attend class. At this site, the students' registration fee is about 1.5 USD for members with a monthly access fee of 3 USD. Nonmembers register by paying 3 USD and 7 USD for monthly access while group members' children access the computer facilities at a cost of 3.5 USD. Similar outcomes occurred in two other groups in Kenya- Lolarako SHG and Gazi SHG- where the group member trained in ICT took on a responsible position, and extending training to other groups.

Formal employment was a more common outcome in India than Kenya. ICT training opened doors to employment as computer operators for Mrs. Mary and Mr. Brighten from Rajapalayam and Mr. Karthick and Ms. Jemi from Siluvaipatti. Miss Glory found work as a computer teaching assistant in a school, and Siluvaipatti is assisting her husband keep business records on the computer. In Kenya, two group members from Gazi, where a marine research field center has been operating for 20 years and works with community members, have obtained jobs, and one of the SHG members left the group after gaining a job outside of the local community.

**Ingredients for success** - ICT infrastructure available or can be developed at reasonable cost, availability of training institutes, proximity to sufficient people who want training and/or access through the resource center, management capability available or can be built up reasonably easily, employment possibilities locally.

## Education

The strongest narratives of success in both India and Kenya came from women who for the first time could sign their name to a document, or count their own money- and learn how to use a computer to access the Internet. With the interests of the project in environmental sustainability, we also introduced some environment based topics such as aspects of hygiene, climate change, corals and fisheries. Carefully designed to not take away from the internally-generated priorities of the groups, these topics lay a broader foundation for later education, of particular value in health and the environment. Furaha Rashid from Lolarako SHG, is thrilled that she can now read the traditional mottos written on the cloths 'leso' or 'kanga') local women use. Several SC members took the Kenya national literacy exam and those who passed have since received certificates from the Ministry of Education.

*'Ingredients for success'* clear understanding and implementation of the participatory method .In the 'study circles, capable study circle leader, access to learning materials to meet the expectations of study: circle learners, ICT infrastructure to facilitate e-learning, linkages locally to both formal and informal 'education programs and capabilities.

## Livelihoods

Successful livelihood activities in India were strongly based on products or services with demonstrated income-generating potential in the local setting, e.g. worm-com posting, hygienic sun-drying of fish, dress and bag making. The first two activities were based on a long history of research and development by SDMRI, to foster sustainable use of marine resources. In Kenya Loiarako and Tulisubiri group members received training and marketing assistance in making soaps, shampoo, cream, lotions and hair food (using the neem and other medicinal plants), from a university intern attached to CORDIO and through Kwetu Training Center that specializes in community capacity building. One group now can make 70 soaps per day and is selling them in a market 12 km away. 100 of their soaps successfully sold in Sweden, and they are supplying a tourist guest house with guest soaps.

Groups that initially selected a mangrove boardwalk and farming activities, due to longer histories of trialing and investing in these activities, have been sustainable, though the former is dependent on tourist seasons, variability and marketing. The most successful group is a mature group that has been built up through interactions with NGOs and supporters through prior projects, growing tree seedlings, growing biofuel trees and producing honey.

Ingredients for success- accessible local asset/resource in good health, low barrier to exploitation and reaching a market, new technology accessible through some training, capital investment minor.



## Putting Knowledge to Better use: Industry responsiveness to gender differences in ICT demand in Vietnam

**Bo Göransson**

Coordinator for LEAP4D, Lund University

### Background

The projects started with the perhaps mundane observation that in developed as well as developing countries, women are poorly represented in scientific research and particularly in the fields of engineering and natural sciences. Partly due to this lack of women as developers and innovators in technologies, women as end-users have been poorly taken into account. Their needs have mostly been considered when the inventor has been a woman herself. This may be surprising, given the fact that women represent a growing proportion of customers of everyday techniques. In a global perspective, women tend to be more educated and economically more independent than the women of previous generations. Also in traditionally patriarchal societies, women constitute an important and growing user-group of ICT products and services. It is also clear that women use ICT for different purposes and have different demands than their male counterparts.

Many studies confirm that women are more likely than men to use ICT for family related purposes, such as health and education, as well as for small-scale social business activities (see e.g. Göransson 2010, Gurumurthy 2008, James 2004, and Thioune 2003). It is no coincidence that the microcredit movement, initiated by the Nobel Peace Prize winning Muhammed Yunus, focuses its lending to women. In February 2007, the Grameen Bank had 7 million borrowers in rural Bangladesh, 97 percent of whom are women

(Grameen Bank 2007). The Grameen Bank and its off-shoot Grameen Phone are two of few examples of business models aimed at women in developing countries. Given the differences in demand for ICT services, we would expect to see this demand being catered for by ICT manufacturers and service providers. From the perspective of national systems of innovation this would imply that the capacity for technological development is not fully utilized and that there is a pent up innovation potential in the innovation system. Moreover, it can be argued no country can afford to miss out on the quantitative as well as qualitative innovation potential represented by women researchers. It is our contention that there exists an opportunity for ICT entrepreneurs to develop products and services to cater for women demand for ICT products. This opportunity could be translated into a competitive advantage for an innovating company or even for a country as a whole. Given the differing economic and cultural situation in developing and developed countries there appears to be plenty of scope and opportunities for innovators in developing countries. This project is devoted to exploring how representatives of the ICT industry in Vietnam are reacting to this challenge.

## Objectives

The general objective of the study was to explore the opportunities for ICT entrepreneurs in Vietnam to develop products and services in response to demand by women for ICT services and products and examine whether or not this opportunity could be translated into a competitive advantage for an innovating company. The specific objectives were a) to investigate gender differences in the ICT demands in Vietnam, b) to identify major obstacles to gender-specific technological development in ICT, and c) to explore the viability of business models aimed at women as users of ICT.

## Methodology

A project team was set up during Fall 2009 consisting of Dr. Tran Ngoc Ca, National Council for Science and Technology Policy, Vietnam, Dr. Le Thi Quy, Research Center for Gender and Development, Vietnam, Mr. Nguyen Xuan Hieu, Vietnam ICT Association, Vietnam, and Dr. Bo Göransson, Research Policy Institute (project coordinator).

Draft questionnaires were produced in October 2009. The purpose of the questionnaires was to explore in quantitative terms to what extent women participate in the development of the ICT sector in Vietnam, either as managers or as researchers and developers of ICT technology. The aim of the survey was to target as many ICT companies in Vietnam as possible (see further below). Moreover, the questionnaire was designed to be compatible with similar studies in other countries.

A first team meeting was carried out in November 2009. The full team met and hammered out remaining research methodology issues and produced a project roadmap. The road map confirmed the different areas of responsibility and laid out the time table for engaging in the project activities. In short it was agreed that 1) Pilot interviews to test the draft questionnaire should be carried out in December 2009. 2) The questionnaire should be revised in January 2010 according to the results of the interviews. 3) The full-scale survey should be carried out during Spring/Summer 2010. 4) A background report on gender issues in Vietnam be drafted during Summer 2010. 5) Interviews with particularly interesting cases should be carried out during Fall 2010. 6) A final workshop to be carried out in November 2010. In other words, we decided more concretely on the timeline indicated in the project application.

In December 2009 pilot interviews of the questionnaires were carried out. Based on the results of these interviews, the questionnaires for the survey as well as for the case studies were revised in January 2010. The pilot interviews indicated that some questions related to size and turnover were considered very sensitive by the companies. Accordingly, these questions were reformulated and made voluntary to respond to. On the whole, the questionnaire worked quite well; the respondents understood the questions well and responded to most of the questions. This indicated that the questions were relevant. (The questionnaire is attached to this report). The full-scale survey started during Spring 2010 with companies in Hanoi and continued with companies in the Ho Chi Minh City (HCMC) area.

The method for the survey included considerable work on identifying the relevant companies to include in the survey. No complete list existed previously in Vietnam. The work started with identifying relevant sources for the construction of a complete list of ICT companies with a main product line in software, hardware or ICT services. List of company names were retrieved from the Vietnamese Association for Information Processing (VAIP), Vietnam Information Development Company (VIDC) and the Quang Trung Software City in HCMC. In addition, business directories as well as previous studies allowed the researchers to construct a list of possible companies to be included in the survey. In total, over 500 companies were on this first list. However, closer examination revealed a number of overlaps, companies that had gone out of business, that were un-contactable (no website or telephone), were branch offices or was wrongly classified as ICT companies.

After weeding out non-relevant listings, 100 companies remained in the Hanoi area and 107 in HCMC, all in all 207. All these companies were contacted by telephone and asked to participate. Some refused to participate

already at this stage and some companies agreed to be interviewed but never completed the questionnaire even after several reminders. In total, 117 personal interviews were carried out successfully at the company sites, giving a response rate of over 50%. This must be considered quite good for this kind of survey.

The research team is also conducting an analysis of the non-respondents to make sure there was no bias in the responses. During Spring/Summer a draft background report on gender issues in Vietnam was carried out. The draft of this paper is attached to this report. A final workshop was carried out in November 2010. The workshop provided the project team with an opportunity to present main findings to representatives from academia, state administration and the business community. The response from the workshop participants were encouraging and the discussions indicated that the research has been relevant and interesting for the Triple Helix participants. As anecdotal evidence, it can be mentioned that one high-level manager of an ICT company announced that she would go straight back to her company and explore the market potential and interest in gender-specific products. The discussions and comments on the research results provided a good basis for finalizing the project outputs.

## Findings

The survey of the Vietnamese ICT industry shows that the level of women participation in the ICT field in Vietnam is still low, but also that it is growing. Particularly in the Hanoi area, the number of women in corporate R&D and management is substantial with women accounting for 37% of the work force in the industry. Perhaps surprisingly, the percentage of women in R&D is higher than at management level; with women constituting 40% of the product development personnel, Vietnam would appear to have higher than average participation in the product development process in the ICT sector compared to most other countries. The total size of the companies surveyed in terms of number of employees was almost thirty thousand, with a small number of large enterprises dominating the sector and with a mean size of around 25 employees per company.

The ownership structure of the ICT companies is dominated by private joint stock companies. Apart from the few large scale companies, they are tend to be small sized enterprises with a turnover of USD 50,000 – USD 500,000 per annum. The main products are development of software and services, and improvement of existing software. The production and development base for hardware is still quite weak. Most of the companies are incorporating a user perspective in general in their work but the number of companies concerned with development of gender-specific products is

low. The information derived from different kinds of user-interaction indicating differing gender preferences, apparently has not translated into gender specific product development activities other than in exceptional cases. Consequently, the share of companies developing products for a particular gender is as low as 9%. The reasons given by companies for not engaging in development projects aimed at a specific gender differ but are all concerned with doubt on either the risk of the projects or doubts if a market for such product exists. The perception is that it is difficult to determine a clear aim, goal or benefit from such projects since the demand for the products and services for a particular gender is uncertain. Gender has never been considered to be a major factor in demand for ICT products and companies are slow to move into new fields. Moreover, many companies function as subcontractors and produce what they are contracted for without being concerned with gender specific demand. Finally, technology is traditionally regarded as gender-neutral in the sense that preferences for it do not differ between genders.

However, some enterprises have welcomed specific project for particular gender because, as one responded stated, “as society grows, demand is expanding and diversifying day by day and daily-life activities are more and more individual. All persons want to be able to express their own special personalities”. The success rate of such gender-specific projects appears to be quite high, indicating that these companies are early adopters of a business model based on tapping the potential of women as product developer and as users of technology. Some of the companies that already are actively pursuing such projects do not have a detailed business plan, although they have the human resources and instruments needed for further exploring this field. Overall, Vietnam is seen as a quite pro gender development and equality. The issue of increasing female participation in job positions, in S&T activities as well as business is well on the agenda for many policy makers. In fact, there are many existing documents and legal frameworks in place aiming at promoting this cause. However, in reality, things depend on many other factors.

Participation of female workers, managers in business activities of firms sometimes can exert influences on the orientation of firms’ activities. Market factor is one of the most important in deciding the firms’ decision on development of gender specific products and services. However, there is no systematic market survey aiming at this niche area. Hence, it is difficult to know if there are any market opportunities for this or not. In addition, dependence on the customers and markets can make firms less ready to take on any initiative for gender specific activities, either design or production of gender specific products and services. However, there are early signs that

companies are beginning to look into this issue and tapping into gender specific activities as new opportunities promise to bring benefits for firms. This will, however, will require some support from overall society as well as the policy framework.

Quantitatively, we have completed what we set out to do; completing background paper and research paper as well as carrying out the planned surveys and workshops. Beyond that, as a by-product, we have created a reasonably up-to-date database on Vietnamese companies active in the ICT-industry, something that did not exist earlier in Vietnam and that researchers can benefit from in future ICT related research projects.

Qualitatively, it is clear that the interaction between researchers, industry representatives and policy makers has resulted in a greater interest in developing business models aimed at women users of ICT. For some industry managers, the idea that gender is a factor in technological development has been an eye-opener. If this will be translated into new and successful businesses catering specifically towards women, as was envisaged in the project proposal, is too early to tell. However, there are examples of early adopters that could lead the way towards a more gender inclusive innovation pattern in ICT.

Some reflections, though. Language turned out to be more of an issue than we envisaged at the start of the project. The wordings of the questionnaires were agreed upon in an English version, but obviously had to be translated into Vietnamese. Some questions that did not work were reformulated after being tested in a pilot study, but some ambiguities apparently remained. To some extent it was a consequence of the economic hybrid system in Vietnam, but also a consequence of ambiguous wordings being interpreted by several different interviewers. A lesson learned is to put more time on streamlining questions and interviewers.

A second reflection concerns the capacity building effect. It should not be overlooked that the project has included a number of dedicated younger researchers who have visited over 200 ICT companies in Vietnam for the interviews. They have also worked with putting together a unique database and learned how to use it for quantitative analysis of an industry. The valuable learning experience and contact networks created through the project will benefit the participants long after the end of this project.



This volume offers a review of Spider supported projects that gave specific focus to the empowerment of women through ICT and contributes to on-going discussions in the area. Spider has supported several initiatives that focused on increasing ICT access and use among women. Each project focused on a particular area of importance for the women and using ICT to address the issue at hand helped demystify the technology to the women. The success of the projects hinged on this ability, i.e. the extent to which technology was adapted to suit women's reality.

#### About the author

Caroline Wamala (PhD) is a project officer at Spider and is pursuing a post doctorate at Karlstad University – Sweden. Her research focuses on the cultural embeddedness of gender and technology. With special focus on ICTs, Caroline's research considers the innovative uses and access practices adapted in developing regions with a underdeveloped communication infrastructure.

Spider is a resource center for ICT for Development (ICT4D) at Stockholm University, Department of Computer and Systems Sciences (DSV). Our aim is to support the innovative use of ICT for poverty reduction and development, while serving as a knowledge broker through networks and partnerships.

The Spider ICT4D Series is an interdisciplinary publication that aims to contribute knowledge on how ICTs can empower people in developing countries to improve their lives.



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