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Are ICTs Gender Neutral?
A Gender Analysis of Six Case Studies of Multi-Donor ICT Projects

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I. INTRODUCTION

Over the past five years multilateral, bilateral and non-governmental organizations and private foundations have provided substantial amounts of funding for projects promoting the use of information and communications technologies (ICT) in developing countries. Experience with development projects in other sectors indicates that women are not likely to benefit equitably from such projects unless special efforts are made to: (i) identify their situation and needs and (ii) take effective action to incorporate their participation. Without such efforts, projects do not benefit men and women equitably. To date there has been little research has been done to demonstrate whether this general case situation applies to ICT projects. It is a topic of particular interest because many development proponents argue that information technology is gender-neutral and that women and men should benefit equally from its application.

However, there are indications that development interventions in information technology have not benefited women to the extent that they have men. Fewer women in developing countries have information technology skills than men and the number decreases as the skill level rises. Women have less access to the technology itself (in terms of both hardware and connectivity) and fewer opportunities to learn how to use it. Additionally, they are discriminated against in content (which is rarely available in other than major European languages and which women are less likely than men to know), in cultural and social barriers to their access, in financial resources to acquire access and in time to learn and use the technology. Women receive far fewer of the business benefits of the technology (e.g. Internet and telecommunications service licenses), as they are generally distributed without equal opportunity policies. Women are also absent from the decision-making positions in information technology in developing countries.

The hypothesis that women do not benefit equitably from ICT and development projects without specific gender analysis and efforts will be tested in this paper by application to six field studies of projects of the Information for Development Programme (*info*Dev) that were commissioned as part of an *info*Dev effort to integrate gender issues. In conclusion, recommendations will be presented to help ensure that projects are not gender-blind or biased.

*info*Dev, a multi-donor grant programme managed by the World Bank, is part of the global effort to bridge the digital divide between developed and developing countries. Its

mission is to promote innovative projects on the use of ICTs for economic and social development with a special emphasis on the needs of the poor in developing countries. *info*Dev expects that a greater focus on the needs of women will increase its ability to reach the poor. Additionally it is based on the premise that the introduction of ICT will contribute to reducing inequalities between men and women.

The six field studies of the incorporation of gender concerns covered different geographical regions (two each were chosen from Africa, Asia and Latin America) and different kinds of projects (field projects, policy projects and technical projects). Included among the projects are: two technical training projects (one women-only), one project introducing a new technology, one project using technology to facilitate employment, one project developing rural community information services and one project promoting national development of e-commerce. An attempt was also made to select projects with varying degrees and kinds of gender focus including:

(1) projects where women were the specific focus group;
(2) projects that appeared to transform traditional gender roles;
(3) projects that made efforts to benefit men and women equally;
(4) projects that the proponents felt had no gender issues.

The field studies were carried out by locally-based researchers in China, Ethiopia, India, Kenya, Panama and Peru.[1]

II. PROJECT REVIEW

The studies were not evaluation nor impact assessments, but rather concentrated on applying a "gender lens" to projects regardless of whether or not gender concerns had been articulated in the original project document.

The "gender lens" is like a lens on a camera that can be changed depending on which aspect of reality the viewer wants to focus on. In this case, the reviewers took off the standard lens, which generally pays little or no attention to gender and looked at the projects with a gender lens: had gender been considered in project design and implementation? Was the project impacting men and women differently? Did whether you were a man or a woman make a different in whether you got access to project resources or in whether you benefited from the project?

In reviewing the projects from a gender perspective, the reviewers focused particularly on:

If and *how* women benefited from the project;
Identifying gender issues that affected implementation and results;
How the project outputs affected women's situation;
How women could have benefited more from the project;
What lessons could be learned by other projects about the involvement of, and benefits to, women.

In view of the fact that there is not yet one generally accepted gender lens approach to development project analysis and planning,[2] *info*Dev developed a field

[1] The researchers who undertook the studies were Prof. Rahel Bekele, Mr. Michael Clulow, Prof. Karen Odhiambo, Prof. Liu Meng, Ms. Norma Puican and Dr. Shiraz Wajih, in order of presentation of the studies. The studies will be available shortly at http://www.infodev.org.

research guide for the gender analysis of ICT projects, entitled "Gender Review Framework for Field Studies of *info*Dev Projects" and tested it through application to the case studies.[3] If there were such a widely accepted lens, it might be a way of bringing together or finding cross-cutting themes about the assumptions made and approaches taken towards women and ICTs, by different gender analysis perspectives such as the women in development perspective, the liberal feminist perspective, the radical feminist perspective, the cultural studies perspective and the gender and development perspective.

III. FINDINGS OF CASE STUDIES

1.*Training for African Women in Internet Working Technology* (http://wbln0018.worldbank.org/ict/projects.nsf/20c7f8205b9d190185256b180057ba4f/13207334f39cdce885256b10005b7ddc?OpenDocument)[4]

Cisco Systems has some 8,000 networking academies worldwide, but the one at the United Nations Economic Commission for Africa (ECA) in Addis Ababa is the first outside the U.S. that is exclusively for women. Additionally, it is the only regional academy involving trainees from an entire continent. The project awards full scholarships to young women who come to ECA in Addis Ababa for training in Internet networking technology. The training course follows the established curriculum of the Cisco Networking Academy Programme and leads to independent certification as a Certified Networking Associate or a Certified Networking Professional.

At the same time as receiving technical training, the trainees also receive training in management, entrepreneurship and gender issues. Additionally, since the training takes place at the headquarters of the United Nations in Africa, they are exposed on a daily basis to analysis of African development issues and have the opportunity to meet African leading policy and decision makers. At the end of the project, the young women are expected to return home and find employment (self-employment or salaried) in the informal technology field.[5]

The course devoted nearly 15 hours of class time to gender issues, reinforced by training material, including Internet resources. According to the reviewer, the participants "not only became more aware of gender issues, but because of related presentations, most have come to realize that women have major roles to play in the application and advancement of ICT in their respective countries." After the training, they said, they no longer considered computer networking as a man's field. They now thought that in entering such a technical field the most important thing was "convincing and committing oneself as well as hard work."

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[2] Two recent publications that attempt to provide a gender lens to development project analysis and planning are *Gender-Based Analysis: a Guide for Policy Making* by the Status of Women Canada (available at http://www.swc-cfc.gc/ca/publish/gbagid-e.html) and the Department for International Development's (UK) *Gender Manual: A Practical Guide for Development Policy Makers and Practitioners* by Helen Derbyshire, which is broader but contains useful material on gender analysis of projects (April 2002, available at http://www.genie.ids.ac.uk/gem/index_implementation/genderman.htm).

[3] Copies of the Gender Review Framework are available upon request from Nancy Hafkin (nhafkin@attbi.com) or Louise Chamberlain (lchamberlain@worldbank.org).

[4] Implementing agencies were the Economic Commission for Africa (ECA) and Cisco Systems. The second course, taught in French, began in March 2002.

[5] As the first class graduated only in February 2002, it is too soon to follow up their post-training career paths.

The training increased the self-esteem and promoted the self-confidence of the young women participants. The reviewer felt that the gender-awareness training was as important as the technical training in the trainees achieving increased self-esteem and self-confidence.

BENEFITS TO WOMEN

- The trainees clearly gained increased knowledge in four areas: Internet networking, gender issues, management and development issues.
- The trainees also gained enormously in self-confidence and self-esteem.
- It is highly likely that the project will have role model and multiplier effects on other young women in Africa. A United Nations Volunteer (UNV) working with the course did a survey of the twenty-seven young women in the first graduating class.[6] In response to questions about their future plans, 71 per cent of the graduates said that they intended to encourage other women to enter the IT field and to promote women in IT; 41 per cent said that they intended to become IT entrepreneurs; and fully 82 per cent said they intended to work in the IT field.

LESSONS LEARNED

Among the gender lessons derived from the project:

- The need for follow-up once the women return to their home countries is crucial, in view of the social and cultural obstacles they will have to overcome to continue in information technology. If this is done, there will be large multiplier-effect payoffs.
- Single-sex training can be beneficial for women in information technology. Women tend to perform better in scientific and technical fields when they are not in competition with men.
- Gender awareness and management training provided important complements to technical training in information technology in terms of moving the trainees to a desire to enter IT and/or become IT entrepreneurs.

***2.** The National Graduate Registry in Panama - Partners for Employment*
(http://wbln0018.worldbank.org/ict/projects.nsf/20c7f8205b9d190185256b180057ba4f/8a20e479a61c0c1f85256b5d0060948d?opendocument)

This project aimed at setting up a national Internet-based employment system in Panama by introducing an expanded version of the National Graduate Registry (NGR), an employment creation tool used by the Canadian Government to bring together university and college graduates and prospective employers. It was hoped that the project would improve the access of Panamanian university graduates to employment information. It was also expected that it would diminish unemployment and assist private sector firms by increasing the number of qualified job candidates.

Attempts to conduct a gender analysis of the project were hindered by the fact that, as the reviewer wrote, "almost no gender-related information had been collected and no gender analysis conducted." It was not possible to track the gender of users of the site.

[6] Nasri Adam, "Profile on UNECA/Cisco Trainees on Internet Networking for African Women," November 2001.

Given the demography of Panama, there was excellent potential for women to benefit, since two-thirds of university graduates are women, with percentages as high as 70 per cent in some universities (higher in business schools, lower in technical ones). Poor women were also prospective beneficiaries, since many of the students at some of the universities are from low-income families and poor women would be less likely to rely on networks and connections to seek employment. The project director felt that women would benefit from the project by getting their resumes in front of employers (even though the employers would be able to identify them as women from their first names).

However, the Panamanian cultural context diminished hopes that getting the resume on employers' desks would be sufficient for women to obtain desirable employment in Panama where employer's attitudes are strongly influenced by "machismo." Educated women tend to get hired for service-level rather than managerial jobs, and employers frequently make hiring and salary decisions based on gender stereotypes (such as: women's place is in the home; men are the breadwinners; and men do not take orders from women). The project did not address these serious cultural obstacles that educated women face when seeking employment.

The reviewer made some specific recommendations about how employment websites could combat gender-based employment discrimination. He felt that:

> Those using the site should indicate their gender, so that this information could be tracked but not revealed to employers. Instead of first names, candidates' names could be referred to by using initials only.
>
> Marital status information should not be collected at all.
>
> Employers should be encouraged to post job listings with details of remuneration, to limit possibilities that women would be offered the post at a lower salary than men.
>
> Job-education modules should include material on gender-based discrimination in employment.

The reviewer recommended that it would have been helpful to have had a gender-aware individual (not necessarily a woman) on the project planning team. There were few women staff on the project, and those on its advisory board were not consulted on gender issues. He also suggested that the project management could have had targets for the registration of women on the site, their use of its services and their hiring by employers. Specific measures were also needed to either block or delay disclosure of the gender of individual jobseekers.

The reviewer concluded that to ensure more benefits for women:

> Gender considerations should have been incorporated from the beginning.
>
> Guidelines for project reports should mandate the sex disaggregation of statistics on project users/beneficiaries.
>
> Gender analysis of the employment of young men and women in Panama prior to project implementation would have uncovered some of the cultural factors identified in the study and could have helped the project focus better on women's reality.

BENEFITS TO WOMEN

- Although the project director maintained that women benefited because their resumes reached the desks of employers, there was no evidence to show that women were hired as a result of the project.
- Given the lack of data, it was also difficult to assess how many women obtained increased access to employment information.

LESSONS LEARNED

- The project would have benefited from gender analysis from its inception. The elements of gender relations in Panamanian society were very important; gender discrimination in employment could not be overcome by technology alone.
- The project would also have benefited from sex-disaggregated statistics. Such statistics would have shown whether benefits of the project were distributed equally to men and women.

3. *InfoDev Health Information Training Center*
(http://wbln0018.worldbank.org/ict/projects.nsf/20c7f8205b9d190185256b180057ba4f/84dfebf109f0be0785256b10005b7bf4?OpenDocument)[7]

The project assisted in establishing a pilot East African Regional Information Technology Training Centre (RITTC) in Nairobi, Kenya. RITTC offered two courses for individuals recruited from health-related institutions and organizations in Eritrea, Ethiopia, Kenya, Tanzania and Uganda. The first course was a three-day introduction to information technology and its health applications to empower health professionals in East Africa to engage in global knowledge sharing through the efficient use of ICTs. The second was a one-week training course designed to create a cadre of information technology trainers - health professionals skilled in information technology and able to train other health professionals in their home countries.

Although the number of women trained was not large (84 in total, comprising 28.6 per cent of those in the trainees' course and 20 per cent of those in the trainers' course), those women who participated gained an increased awareness and appreciation of ICTs. On the personal level, women participants came away from the course with a sense of self-fulfilment. A number of the female participants said that they felt proud of their completion of the training and that it had made a difference in their lives. Female respondents focused on their improved ability to use ICTs. The course also created role models for other women in the region to take up ICTs. Upon their return, twice as many of the women as the men said that other women were showing an interest in ICTs as a result of their influence.

GENDER ISSUES AFFECTING IMPLEMENTATION

There was no awareness or incorporation of gender concerns or perspectives in the design or implementation of the project or efforts made to ensure the equitable participation of women, even though the planner of the course was a woman. The project document contained no references to gender.

[7] The implementing agency was RITTC. RITTC was administered by SATELLIFE with assistance from the network management team of HealthNet Kenya (HNK) in planning and implementing the project.

There was also no sex disaggregation of data on participants.[8] No special efforts were made to recruit women or to encourage them to apply – in contrast, the mode of advertisement was gender-biased because recruiting took place largely over the Internet, to which fewer women than men in Africa have access. In this way women health professionals were disadvantaged in learning about the opportunity for training.

In contrast to the male trainees, virtually all of the women interviewed felt that the time allotted for the courses was insufficient. This may have been because the IT skills of the women were generally lower than those of their male peers. Thus, assessment of participants' skills levels is a necessary element in training and corrective measures should be introduced where needed to level the playing field. The need for remediation in information technology frequently correlates with gender because of women's weaker scientific and technical knowledge. Several women participants felt that the courses should have been divided into two levels to accommodate differences in skill levels.

SUSTAINABILITY

Once they returned to their homes and jobs, many more of the women than the men lacked regular access to information technology. Few of the women had Internet access after their return, with the result that their continued and intermittent use of the technology was confined largely to personal e-mail. The high cost of public access restricted access for those women who did not have Internet connections at work.

A serious outcome was that none of the women trained to be IT trainers was able to conduct training upon return to her workplace. All of the women trained to be trainers said that their organizations had not facilitated their training of others in their institution upon their return! The men, on the other hand, were able to train others.

Another serious detriment was that there was no follow-up to the training. This is particularly important for the women trainees, as their skills levels were lower upon entry and they faced more obstacles in keeping up their skills upon return home.

Timing and contact hours during workshop training needed to take into account women's multiple roles. For those from other countries, some of the courses were spread out over two weeks, when a more intensive schedule could have shortened the period required to be away from home. Instead, the scheduling of the course lengthened the time that women had to be away from their families, and some women were uncomfortable about this. None of the men mentioned this as a difficulty. Additionally, the women from Kenya who continued to live at home during the training felt that being unable to practice on the computers at the RITTC facility in the evening, because of the transport and time difficulties in returning to the training venue, put them at a disadvantage in comparison with other students.

BENEFITS TO WOMEN

The women trainees gained increased awareness of and appreciation of ICTs.

The women trainees gained in self-esteem and self-confidence.

[8] The reviewer did a sex breakdown on participants by going through the list of participants, consulting trainers and others to determine which of the participants were men and which were women.

LESSONS LEARNED

IT human resource development projects implicitly deal with gender. Thus, gender analysis should be incorporated from the beginning.

The need for specific strategies to ensure women's participation, since the pool of women (particularly in Africa) eligible for technical training is small.

The need to involve gender-aware individuals in the design, management and planning of training to ensure that gender needs are addressed.

The need for sex-disaggregated data on projects, especially those involving training.

The need to correctly assess skill levels before training, as more women than men may have low levels of skill in information technology and adjust training accordingly.

The need to take into account gender-specific cultural constraints, such as women's family responsibilities and their difficulty in attending evening training sessions.

The need for post-training follow-up to ensure access, combat cultural constraints and promote skills retention.

4. *Exploring Adequate Reform Models for the Telecom Sector in China*
(http://wbln0018.worldbank.org/ict/projects.nsf/20c7f8205b9d190185256b180057ba4f/d3f2f6035a62503385256b10005b7dfd?OpenDocument) [9]

In its original formulation, the project was to focus on reform models for the telecom sector in China, building consensus among key decision makers on adequate policies and strategies for China Telecom to successfully enter a more competitive market. As the project went into implementation, the focus narrowed to an examination of e-commerce and its regulation in China, with a view to making policy recommendations to the government. The project design and project document contained no references at all to gender.

GENDER AND PROJECT MANAGEMENT

The management of the project was equally divided between men and women (two of each). Two-thirds of the research group to which the project was contracted were women. Despite the fairly large participation of women in the project, the reviewer felt that no one connected with it understood or had an awareness of gender.

POLICY AND GENDER

The project management felt that macro-policy projects, particularly those in technical areas, were gender neutral and did not need to incorporate any special concern for women. They felt that the development of e-commerce in China, the anticipated project outcome, would benefit many people in China and " . . . so, automatically, women will be half of the beneficiaries." Thus, they felt it was not necessary to take any particular note of women's needs or interests in the project.

The same attitudes carried over from the project managers to the research team. They saw the field as highly technical, in which it was not necessary to differentiate by gender. In addition, the principle of "If you ask for gender, you get gender. If you do not,

[9] This project was initiated and is being implemented by the Ministry of Information Industry of China.

you will not" appeared to apply. They said that they had not thought of gender in dealing with the project, but, more importantly, as contract researchers, they had not been asked to look at gender.

PROJECT OUTCOMES

As the interviewees discussed the benefits that the project would bring to people's lives in China, they in fact articulated a number of ways in which the project could positively affect women's lives. Among these were the beliefs that the project would:

increase employment opportunities for women, especially as e-commerce was not a field requiring physical strength or endurance and would thus be a field that many women would seek to enter;

decrease women's domestic workload (by their being able to do shopping online) and increase their available time for leisure and career development, thus giving women with small children or those living in remote areas the possibility to continue their education online (through distance education).

The reviewer questioned the reality of some of these possibilities, such as how many women are sufficiently educated and Internet-connected to become e-consumers, and the feasibility of dissemination of distance education to women in rural and remote areas of China in the near future, given that Internet users are very heavily concentrated in major cities. However, the interesting point is that the reviewer and reviewees together found that a project that had been unaware of gender had significant gender aspects.

An unintended but direct effect of the project was that the women participating in the project research found their participation empowering and their understanding of this aspect of ICTs greatly enhanced. These women said that they had gained a deeper understanding of the social reality of their country through the project, that it had concentrated on their research interests, that they gained more confidence in themselves in information technology – an area that they regarded previously as a male preserve – and that they also gained confidence by working at a professional level with men.

The reviewer concluded that women's special needs and interests must be covered in policy projects. The expectation that a policy would benefit "the people of China" was not a guarantee that the benefits would be equitably distributed by gender. She also encouraged study of how to encourage women to enter the ICT industry and how ICTs could influence women in poor and remote areas.

BENEFITS TO WOMEN

The women who participated in project research and design benefited by the acquisition of knowledge, self-esteem and self-confidence. They also gained a desire to learn more about gender and ICTs.

The realization, as a result of the reviewer's intervention, on the part of project planners that there were gender aspects to a project that they had regarded as gender-neutral.

The realization that there could be gender-differentiated benefits in distance education and e-commerce, and, in particular, that women could profit from a development of these areas in China.

LESSONS LEARNED

The need for gender analysis of projects. The reviewer recommended that this could happen in all projects by informing applicants for funding that there would be a gender evaluation as part of project implementation.

Seemingly gender-blind projects frequently have important gender aspects that gender analysis elucidates. In this case, the process of gender review of the project brought out these aspects.

Substantial numbers of women participants in a project are not a guarantee that the project will bring benefits to women. If projects are to bring changes to women and empower women, project managers and participants, both male and female, need gender sensitivity training.

"If you ask for gender, you get gender. If you do not, you will not."

Evaluation is a reciprocal process that can empower both the evaluator and project participants. Gender evaluation in particular can bring out existing gender issues and lessons of which participants may not be aware and that would otherwise be hidden.

5. *Information Systems for Rural Development: a Demonstration project* ***(http://wbln0018.worldbank.org/ict/projects.nsf/20c7f8205b9d190185256b180057ba4f/886bce8daced1d7d85256b750070e048?OpenDocument)***[10]

The general objective of this project was to contribute to rural development in Peru by increasing the productive capacity of the small farmers and to improve management skills among the local authorities in Cajamarca, Peru, by the design and installation of an information system for small producers and local authorities (municipalities).

In conducting the gender review, the researcher interviewed two managers of the Intermediate Technology Development Group (ITDG), the coordinator and project team in Cajamarca (in the Andes of northern Peru 870 km [545 miles] from Lima), local government representatives, information promoters and potential users of the project products. As with most of the other projects reviewed, there was little quantitative and qualitative information disaggregated by sex. No records of project users were kept, so gender breakdowns of usage were not possible.

ITDG did not consider the gender perspective in the original design of the proposal. Prospective users were defined as "small producers" and local authorities. The project designers assumed that both were all-male groups, being unaware of the involvement of the women in the area with economically productive farm activities. Thus, women were part of the defined target group, but lack of gender awareness prevented project designers and implementers from recognizing women's economic roles.

In the early stages of design, the system proposed was inappropriate to the users, regardless of gender, being based on library services and Internet access that were inaccessible to the potential users for reasons of low levels of literacy and lack of Internet infrastructure.

[10] Intermediate Technology Development Group was the executing agency.

In the implementation of the project, the information services became simpler and more functional. Women continued to experience disadvantages in access and little attention was paid to achieving outcomes that would directly benefit women of the community. Disadvantages to women included:

social factors that prevented women from partaking fully of the services- notably their high degree of illiteracy and the heavy domestic workloads they bore. The project tried to adapt to women's workloads by changing schedules to accommodate them.

joint-sex meetings and training courses that constrained women's participation. In joint meetings and training, the men tended to mock the women, who were shy to begin with. Women reported that their greatest difficulty with the training courses was not the level or the specialization but men's attitudes towards their participation. The project team realized that the project was better served by having separate training sessions for men and women.

With a diversification of activities in the second year of project implementation, the gender awareness of the implementation team increased. Some new information centres were set up on enterprise models and both young men and women from the participating communities were selected for training. In the implementation of a community radio project in the second year, the project team was aware that appropriate programme content could do a lot to build gender equity, and the women of the community were eager to participate in developing radio programmes that would interest community women and inform them of their rights. At this time enterprise centres were set up, and some young women were chosen to manage the centres.

How could women have benefited more from the project? According to the reviewer:

the proposal objectives could have included the strengthening of not only men's capabilities but also those of women

the project objectives could have included equitable benefits for men and women by disaggregating the participants by gender and assessing the information needs of both men and women

the training could have been designed and conducted separately for men and women, especially in imparting computer skills and helping to identify business opportunities in order to generate additional income sources for the household.

The reviewer felt that insufficient participation of the intended beneficiaries (women in particular) in the design of the project was the major factor in limiting positive gender outcomes. More generally, she recommended that gender awareness training be required for project implementation teams.

BENEFITS TO WOMEN

As the project advanced, young women were trained in management and information technology in order to manage enterprise centres.

Women came to assume leadership roles in the community radio activities.

The content of some community radio programmes was directed at building gender equity.

LESSONS LEARNED

Projects need to be designed with reference to the social and cultural issues and level of education of the target population.

Community information centres need to target the differing concerns, resources and perspectives of all the sectors of the population, taking into account the specific circumstances or restrictions of gender, age and/or ethnicity. The original project had identified a user group that effectively excluded women. The targeted male farmers and local government officials were not the only ones in the community with information needs, nor were they the only ones with a stake in the economic progress of the area.

In order to reach women as users of information services or in training, the women themselves must be consulted to determine the constraints they face in participating in the project, and the project should take steps to try to adapt to them, e.g. through flexible schedules for training and access.

Training and meetings need to take into account cultural contexts – e.g. whether men and women are comfortable meeting and training together and whether the presence of men constrains the participation of women.

Gender analysis should take place from the design phase of the project to ensure gender equity.

Gender analysis can reveal economic roles of women, which were not apparent to project planners.

Sex-disaggregated statistics are indispensable for effective project planning.

6. India Health Care Project - Use of Information Technology for Delivering Quality Health Care to the Rural Population

(http://wbln0018.worldbank.org/ict/projects.nsf/e4ed1d55d4e1c27085256b180057ba50/eeaa76fe47e8a51d85256b10005b7bf2?OpenDocument)[11]

Based in the Nalgonda district of Andhra Pradesh state in India, the objectives of the project were:

to provide support tools that would allow Auxiliary Nurse-Midwives (ANMs) to reduce time spent doing paperwork and spend more time giving information and care to community women on family planning and reproductive health

to increase the accuracy of the data flowing up from ANMs through the healthcare reporting structure

to provide a means for getting health care data at the village level into electronic form

to provide ANMs with information that helps them provide more effective service to the villages.

This was to be accomplished through the use of highly portable technology tools-personal data assistants (PDAs).

ANMs were trained and then provided with PDAs for data entry and linkage with primary health centres. It was expected that by unburdening the ANMs from filling

[11] Implemented by CMC Limited.

registers manually the time savings would result in better interaction between ANMs and the community and improved services to the population.

Gender was not an articulated part of the project objectives. The focus in the project document was on the convenience of the technology and the possible resulting improvements in service. Most notably, target groups (the ANMs and the population they work with) were not involved in planning and design of the project. Only the government health workers were informed of it; the community was not even aware of it.

Almost as soon as the project began, gender issues arose. When the PDAs (a novel technology in the region) were distributed to ANMs, their male counterparts (Male Health Workers – MHWs) protested that they had not been given PDAs.[12] The introduction of a new and desirable technology only to women, where it was not available to all, caused resentment. Following the protest, PDAs were also made available to MHWs.

By failing to involve the target population (both the ANMs and their female clients in the communities served) in the planning and design of the project, the project collected data that had been designated by the central office as important to women, but which in fact did not reflect the health concerns of the women of the area. While national and district-level medical officers were intent on data collection on family planning and immunization, women's own health priorities in Nalgonda focused on joint pains, reproductive-tract ailments, anemia and related problems, childbirth and infant health issues. Additionally, women's reproductive health is very much determined by men's attitudes, behaviour and the general level of inequality between the sexes. Few men in the area accept permanent methods of family planning; thus, their on-going cooperation is very important to the success of family planning. The data collection and the health programme treated reproduction as purely a women's issue, when in actuality it is very much an issue of gender relations.

BENEFITS TO WOMEN

Women health workers who received the new technology gained knowledge, self-esteem and status.

The project was not far enough along at the time of the gender review to determine whether projected time savings gained by the women health workers would result in improved services to community women.

LESSONS LEARNED

While the focus of the project was on technology, it was learned that the intended objectives would not be met unless gender considerations and social equity were introduced into the project design. The technology could not be applied successfully without knowledge of the gender relations and information needs in the target communities.

The introduction of information technology can affect gender relations, especially when it is introduced only to men or to women. Project planners need to realize that technology is rarely gender-neutral, but operates in a social context.

[12]MHWs had not been given PDAs because the project had been defined to bring technology assistance to the data collection work of the ANMs.

Targeting projects at women does not equate gender mainstreaming. Men's attitudes and behaviour and the socio-cultural context determine outcomes for women as much as inputs directed solely at women.

Project design not involving beneficiaries and undertaken outside the region did not correctly identify the real health concerns of target beneficiaries in the region. Awareness of the community can pay dividends in information collection, analysis and identifying solutions.

Dissemination of the technology to both men and women health workers who could have complemented each other in collecting locally appropriate data would have been beneficial.

IV. GENDER ANALYSIS: LESSONS LEARNED

A number of common themes emerge from the gender analyses of the six projects. These include:

POSITIVE IMPACT OF ICTS ON GENDER

In virtually all ICT activities in which women were involved in the projects reviewed, the women emerged not only with greater knowledge but also with enhanced self-esteem. The empowerment effect was universal in all the projects examined. Additionally, many of the women who gained information technology skills were anxious to pass it on to other women, promoting both a multiplier effect and becoming role models.

However, it also observed that ***while technology empowers, it also very much affects and alters gender relations***. Diffusion of technology needs to be seen it the context of gender relations. The Andra Pradesh health project in India was a particular case in point, as the men health assistants protested vigorously when they were not given PDAs, although they did not do the work that the project centered upon. The important issue was the empowerment and status that comes through access to new technology. In Peru, where women were already very marginalized, they felt even more so when information technology services were directed only to men. Diffusion of technology needs to be seen in its gender context.

The tremendous importance of the ***socio-cultural context of technology*** was apparent throughout. Technology does not operate in a vacuum. Information technology in itself cannot combat constraining socio-cultural forces (such as machismo, negative male attitudes towards women and stereotypes about women), but needs to be complemented by gender analysis and corrective measures. This was seen in every one of the projects reviewed.

GENDER IS EVERYWHERE

The most evident conclusion from the gender reviews is that ***it is nearly impossible to find a project without gender issues***. In China, the project designers thought that theirs was such a project. However, upon examination, many gender aspects came to light. Virtually every project is impacted by its socio-cultural context, among which gender issues are central. It was particularly well illustrated by the Panama project, where the technology in itself could not correct extensive gender discrimination in employment. In Peru, lack of awareness of gender roles meant that the economic roles

that women play and the ways in which they could benefit from the new technology were overlooked. In Ethiopia, the presence of gender analysis in the project helped the women get beyond their fears that they could not master networking technology. In India, the lack of gender analysis prevented an understanding of the relations between the sexes on the vital project issue of reproductive health. In China, the absence of gender analysis led to a blind spot about the different ways that the proposed policy would impact men and women. In Kenya, the lack of gender awareness kept the project from taking proactive measures to recruit women and to take into account difficulties women would have with project scheduling and access to connectivity.

Failure to consider gender-differentiated issues has negative impact on project outcomes, particularly in the case of policy projects. The assumption that a so-called gender-neutral information technology project will benefit an entire population regardless of gender was not grounded in reality, because of the impact of gender relations on technology and the societal constraints that women face in accessing and using information technology.

LACK OF GENDER ANALYSIS

"If you don't ask for gender, you don't get gender." Nearly all the reviewers reported that the ***project designers had not incorporated gender into their analyses and design because the project proposal guidelines had not asked for it***. There were almost no references to gender in the project proposal format instructions, and there were no references either to sex-disaggregated data or gender analysis in the reporting requirements. Thus, not surprisingly, virtually none of the projects had sex-disaggregated data available and virtually none had considered gender elements in their project design. This was particularly important in the evaluation of the Panama graduate registry, because there was no documentation to determine whether men and women had benefited equally from the project.

It became clear from the reviews that projects in technical fields (including meetings and technical training), ***need to be pro-active to ensure the participation of women as well as men***, because the pool of eligible women in these areas (particularly in Africa) is small. Sometimes corrective measures may be needed to include women as well as men. For instance, in technical training offered by RITTC in Kenya), the women trainees in general had lower technical skill levels than men and some remediation would have been beneficial.

GENDER PARTICIPATION

While two of the projects focused specifically on women (such as the Internet training in Ethiopia and the PDA training in India), it should be noted that all-women projects do not equal gender awareness nor do they necessarily bring gender equity. In Ethiopia, gender awareness came as a result of its conscious inclusion in the technical curriculum. In India, when the project concentrated only on women, some project objectives were not met because of the exclusion of men; and when technology was introduced only to women, gender conflict developed. ***Gender awareness does not mean counting the number of women in a project activity, but taking into account societal relations between men and women and the impact of these relations on other areas of community life***. As a result, it is important to involve both women and men in the project

design, management and training, to ensure that gender needs are addressed. Similarly, from the analysis we also saw that gender awareness on the part of management is more important than the sex of management personnel (the China project is a case in point). In all the cases examined, gender-awareness training proved highly beneficial.

The societal context is of overriding importance in ensuring the participation of and the distribution of benefits to both women and men. Technologies have varying value to different members of society, depending on their respective roles in society and how different social forces mold the technology. Different groups in society are affected differently by technology and they will value the technology accordingly.

In some cases, equitable participation by gender could best take place by ensuring that men and women work together (as in the case of male and female health workers in India). In other cases, it separation of the sexes in training and meetings (as in the community information services in Peru and in the Internet networking training in Ethiopia) appeared to be an appropriate choice. In a third instance, it meant attempting to cover up gender identity and marital status (in the case of the employment registry in Panama). Frequently, special accommodation will be needed to ensure that women as well as men are able to participate (e.g. attention to course and meeting scheduling to recognize women's multiple roles, as in Kenya and Peru). The most important consideration is that the societal context be taken into consideration in the diffusion of information technology.

HOW TO INCORPORATE GENDER IN PROJECTS

Review of these projects elicited some lessons about how to successfully incorporate gender into project design and implementation. It should start with the ***imperative involvement of the beneficiaries in project design***. Although this has become a truism and almost a cliché of project design, it is evident from the projects reviewed that in most cases it does not happen. ***Gender considerations need to enter from the beginning of project design*** and not be added in hindsight or as mid-term corrections. Several of the projects noted that no gender-aware persons were involved in the planning or design of the project under consideration. Gender perspectives and analysis need to be integrated into ICT projects from the initial stage up to the final stages of the project cycle. In addition, these analyses must be supported by data and indicators upon which judgements can be made about the project impact on gender in order for the perspectives to be valid.[13] It should be noted that the number of women involved in project design and implementation, or as participants, is not a guarantee of gender awareness. This was clearly seen in the reviews as there were several projects where women featured prominently in design and implementation teams, but yet there was no gender awareness.

CONCLUSION

Several of the lessons learned from the gender analysis of the six projects support the hypothesis that women do not benefit equitably from development projects unless special efforts are made to: (i) identify their situation and needs and (ii) take effective action to incorporate their participation. This is essentially the outcome of the socio-cultural context, in which women are frequently disadvantaged by culture and

[13] The author is grateful to Tatiana Sikoska (INSTRAW) for contributing this point in online discussion.

concomitantly by inequitable access to all kinds of resources. As they do not enter the world of the project on an equal basis, special efforts are needed both to ensure their entry and the possibility of receiving equitable benefits from the project.

Contrary to the frequently held view that ICTs are gender neutral, every one of the case study projects had gender issues, but these issues were rarely articulated in the product design and implementation. One of the main reasons that projects do not articulate gender concerns is that donors typically do not ask for them. The need for pro-activity to ensure gender-balanced participation is particularly the case in ICT projects in developing countries because of the limited pool of women with skills in this area and the educational deficits of most women. However, in taking pro-active measures to ensure women's participation, the studies showed the importance of doing so within the context of gender relations and the societal content. If not, sex-specific interventions can frequently cause backlash from other members of the society and can affect successful project outcomes. This, too, underlined the importance of involving all stakeholders- including both women and men of the target community- in project design from the beginning. By adopting these principles, projects can go far towards achieving gender equitable results.