Exploring feasibility of using mobile and internet technologies to enhance alternative livelihoods options for child sex workers wishing to withdraw from sex work

Report commissioned by Uganda Reproductive Health Bureau

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1.2 Abbreviations

AgriFin	Agriculture Finance
ATAAS	Uganda Agricultural Technology and Agribusiness Advisory
BBW	Banana Bacterial Wilt
BLF	Big Lottery Fund
CNHW	Community Nutrition and Health Workers
IDRC	International Development Research Centre
L3F Uganda	Life Long Learning for Farmers
MAAIF	Ministry of Agriculture, Animal Industry & Fisheries (MAAIF),
NAADS	National Agricultural Advisory Services (NAADS)
NARO	National Agricultural Research Organisation
PDAs	Personal Digital Assistants
RDE	Rural Development Extensionists
SAGE	Social Assistance Grants for Empowerment
UDHS	Uganda Health Demographic Survey
URA	Uganda Revenue Authority
URHB	Uganda Reproductive Health Bureau
UTL	Uganda Telecommunications Limited
VEDCO	Volunteer Efforts for Development Concerns
VRS	Virtual Registration System
WIT'	Women in Technology
WOUGNET	Women of Uganda Network

1.3 Introduction

The assignment aimed to support URHB develop meaningful alternative livelihoods options and strategies targeting 270 girls, child sex workers, supporting them to safely withdraw from child sex work and improve life chances. Specifically the consultants would provide URHB with information and insights on the feasibility of using mobile and internet technologies to enhance alternative livelihoods options girls wishing to withdraw from sex work. These insights will enable URHB prepare a successful stage II application to the Big Lottery Fund (BLF).

This report owes a deep debt of gratitude to the 40 young girls from Naluwerere and Mbiko stop-over towns, who participated in the one-to-one and focus group discussion interviews generously shared their time, perspectives, and ideas. We are very grateful as well to the local government, business leaders and the leadership of URHB who participate in key informant interviews for this study and who assisted the assessment team in identifying and mobilizing young girls for the interview. Our understanding of the circumstances, assets, and challenges of girls working as child sex workers was greatly enhanced by their insights, which are presented throughout this report.

1.4 Desk research: The use of mobile and internet technologies in Uganda to support livelihoods options for the poor particularly women and girls (what works, what doesn't and why?)

Through critical internet search, project and literature reviews, we reviewed 30 live projects in Uganda that are using mobile and internet technologies to support enhancement of livelihoods of poor people. We focused our research on understanding the big idea behind each project; identifying which project approaches are working and what challenges projects facing (or what is not working?). We then conducted an overall analysis of all the projects reviewed and make recommendations for URHB to consider while designing its project targeting child sex workers; based on analysing the 10 most relevant projects reviewed. The following summarises the approaches of 10 out of the 30 projects reviewed.

1.4.1 Mobile Vital Registration System (VRS), Uganda Registration Services Bureau

The big idea: Uganda has one of the highest fertility rates at 6.3 as reported by the World Bank 2008 report; an estimated 1.4 million infants are born every year with few of them registered and even fewer issued with birth certificates. The Uganda Health Demographic Survey (UDHS 2006) reported that only 21 out of 100 children aged 5 years and below had had their birth registered.

The importance of birth registration includes proof of identify and age to facilitate access to social and economic services, such as education, health and protection as well as ensure protection from violations affecting children's rights such as trafficking, sexual abuse, family separation, early marriage, child-labour, enrolment in armed groups and to uphold the juvenile justice, moreover, the adults benefits are countless as well.

Due to high registration fees and other hidden costs (such as transport charges) as well as the bureaucratic paper-based registration system, it can take several months from the time a child is registered to the time the birth certificates arrives. The delay is particularly long for children born outside of hospitals. To respond to these challenges, the Uganda Registration Services Bureau decided to automate the registration of births, deaths and marriages, with support from UTL and UNICEF. The Mobile Vital Record System (Mobile VRS) that has been developedvirtually does away with traditional paper forms.

What works?In the new system, data is entered and transmitted by mobile phone from the community and by a web-based application from hospitals and then uploaded in real time directly onto a central government server.The advantage of MobileVRS is that it can be used freely with any type of mobile phone, wherever there is network coverage.Mobile VRS will boost birth registration rates to over 80 per cent nationwide by 2014.

To date, nearly 141,000 people from over 29,000 households in six sub-counties in Kaberamaido,Kiboga and Kyenjojo districts, have had their births registered through the program.About 95,000 short-form birth certificates have been distributed in the three out of the 112 districts in Uganda.

The web component of the Mobile VRS has been greatly improved in ongoing work with the Social Assistance Grants for Empowerment (SAGE) program. It has also been set up in Mulago national referral hospital and is expected to simplify registration for the approximately 3,000 monthly births there. The first phase of users has also been trained and provided with user access details.

Challenges or what is not working: The mobile phone network infrastructure is weak in some areas where Mobile VRS has been introduced, leading to incomplete coverage and periodic communications failures. The unreliable electric power supply in many parts of the country presents a continuing challenge, hampering the aim of installing a working computer and printer in every sub-county and hospital as well as the charging of mobile phone batter[1].

Lessons and recommendations for URHB:

The introduction of Mobile VRS has led to an increase in demand for birth registration services, likely due, at least in part, to the timeliness and reliability of the system. As such any mobile and internet technologies promoted by URHB to child sex workers must be reliable.

Gaps in key staff positions at local government levels affect implementation of the Mobile VRS. It is critical the URHB has staff on ground to accompanygirls withdrawing from sex work to alternative mobile or internet driven livelihoods options.

Inadequate transport makes it difficult for district and sub-county staff to reach all geographic areas and to provide the required level of system supervision. It is likely that supported girls may choose to develop livelihoods options in areas that are far from the stop-over towns. URHB will have to assure the support supervisors for girls alternative livelihoods are well-facilitated to reach the girls regularly.

1.4.2 Mobile Phones and Rural Livelihoods: Diffusion, Uses, and Perceived Impacts among Farmers in Rural Uganda – Volunteer Efforts for Development Concerns (VEDCO)

A study carried out by Brand Lee Martin identified a number ofunique uses, including storing local market trends in the calendar, using the speakerphone function for group consultation with agricultural experts, andtaking photos of agricultural demonstrations[2]. This was part of a project supported by VEDCO in Kamuli District.

The big idea: Over time, with introduction of mobile technology, the number and variety of agricultural uses increased among all users, indicating that adoption occurs for a few key purposes, but that uses will be added or

[1]*Unicef, Equity Case Study: Uganda - Using mobile technologies to improve delivery of, and access to, birth registration services for all children*, http://www.unicef.org/equity/index_66507.html (May, 2013)

[2]*Brandie L Martin and Eric Abbott, "Mobile Phones and Rural Livelihoods: Diffusion, Uses, and Perceived Impacts Among Farmers in Rural Uganda", Information Technologies & International Development*

reinvented to changing needs. This study identified a number of unique uses, including storing local market trends in the calendar, using the speakerphone function for group consultation with agricultural experts, and taking photos of agricultural demonstrations.

Volunteer Efforts for Development Concerns (VEDCO), an agriculture development-based nongovernmental organization, has been working Kamuli District, Uganda, since 2004 to "support collaborative training and development activities that strengthen the capabilities of rural people to: improve agriculture and natural resource management practices; build assets; diversify income sources; and achieve food security, nutrition and health"

VEDCO tries to achieve its development goals by forming farm groups and training community leaders, namely rural development extensionists (RDEs) and community nutrition and health workers (CNHWs). Members of VEDCO farm groups and VEDCO staff choose the individuals who will serve as farm group leaders. Since the leaders serve as exemplars, those who hold higher social status in terms of education and wealth tend to be nominated into leadership positions. RDEs are trained in agricultural techniques, including farm planning and management, post-harvest handling and marketing skills, while CNHWs are trained in nutrition and health extension, including management of malnutrition in children, nutritional management in the context of HIV/AIDS, and crop and livestock production.

In 2010, VEDCO included goals to collect and distribute market information via SMS in its five-year strategic plan. In addition, VEDCO has established a goal to distribute approximately two SMS messages per month on additional topics covering disease outbreaks, HIV/AIDS management tips, gender issues, climate-related updates, updates on farmer trainings and meetings, and agricultural and health-related extension

What works?

Where there is lack of electricity use of low energy using devices is critical: The majority of respondents interviewed owned the Global System for Mobile Communications-enabled (GSM) Nokia 1100 series mobile phone with built-in flashlight. None of the households interviewed had electricity. Mobile phone batteries were charged at a cost of 500 Ugandan shillings (approximately US$0.20) every three to four days at a battery-charging kiosk in the nearest town

Prepay model preferred by low income groups: All respondents paid for mobile phone services through the "prepay" model, in which a scratch card is purchased in varying price increments and loaded onto the mobile phone as mobile phone credits.

Gender imbalance in usage reducing: Over half of the women surveyed (64%) had adopted their mobile phones after 2006. In the last two years, mobile phone handsets have declined in price to approximately 40,000 Ugandan shillings (Approximately US$19; Burrell, 2008). Perhaps the decrease in cost has made the mobile phone more accessible to rural women.

Reinvention of uses: Initial uses of the mobile phone directly reflect the perceived relative advantages that led to adoption, including kinship maintenance, financial monitoring, consultation, and coordination with agriculture extension agents and farm group members. While the mobile phone served these initial purposes, the reinvented uses that were identified indicate the development of a broader spectrum of agricultural uses that, in turn, fulfil a wider range of needs. The mean number of agricultural mobile phone uses per person at the time of adoption was 1.75, which increased to 5.16 over time. This finding supports the claim that, over time, mobile phone uses are being reinvented to deal with a greater spectrum of needs.

Lessons and recommendations for URHB:

An intervention promoting use of mobile and internet technologies to support vulnerable girls seems to be timely. The cost of the services is reducing and access increasing particularly among women and girls. Any innovation by

URHB is also likely to catalyse re-invention of new uses for the mobile and internet technologies by the girls. URHB needs to be ready to collate evidence on new uses that are likely to be adopted by the girls targeted.

1.4.3 AgriFin Mobile – Mercy Corps

The big idea: Mercy Corps has developed the AgriFin Mobile Application: to improve farmers' access to quality inputs, improve post harvest processing, reduce losses, reduce costs of buying by enabling traders estimate production from different locations and improve financial services by providing cashless payment options. The application aims at reducing the complexity of accessing services to farmers and providing a single point of contact through agent networks that provide support to farmers through the whole production life cycle.

What works: Cashless payment system have worked because of the diffusion of mobile money services provided by platforms of the different mobile telecommunications providers. Indeed this would work for girls targeted by URHB if the alternative livelihoods consider supporting mobile money payments. Equally getting information on prices and products from different locations has added value to farmers' work.

What does not work: The AgriFin model assumes that targeted beneficiaries already have a viable livelihood option. It does not consider the knowledge and skills of targeted groups of girls in using mobile and internet technologies. As shown further below, the majority of girls targeted by URHB may not be savvy in using the technologies recommended.

Lessons and recommendation for URHB: Provide the girls training in mobile and internet technologies. Provide hardware implemented through a centre model possibly at the knowledge room. Consider establishing a business centre at the knowledge room in Naluwerere or other stop over towns where the girls can come for support.

1.4.3 AppLab, Grameen Foundation

The big idea: Today, few banks cater to poor or rural consumers in Uganda – it's expensive to build branches in rural areas and it's difficult to make money serving customers who only have a few dollars a month to save or spend. As a result, only 1 in 5 Ugandans are banked, and 1 in 2 lack access to any financial services at all. As a result, most use informal tools, which aren't always sufficient in addressing their needs. Most adults either own a mobile phone or have access to one, which has contributed to growth of mobile money. Today, there are 2.5 million registered users in Uganda, and it's increasing by the day as people take advantage of the faster, more secure way to send money. However, the infrastructure that allows money to flow from a city to the village could be used for much more than simple payments. Grameen Foundation's AppLab Money combines in-depth research-based approaches with rapid, iterative testing to develop new mobile financial products and solutions. By observing consumer behaviours, conducting field research, leveraging industry experts and crowd sourcing ideas from the public, the AppLab Money team will identify products that have the highest potential for sustainability, scalability and impact for the poor.The AppLab Money team focuses on identifying and developing products and services to help unbanked men and women access critical financial services through their mobile phones. In Uganda, where one-third of all people own a mobile phone, these types of apps are opening the doors for change. In the first phase, App Lab is conducting research to better understand information needs and assess the landscape of applications and services that already exist in the Ugandan market. With this base of knowledge, the team will develop, test and implement applications that have the potential to improve lives and livelihoods through access to information.

What works?The product is still under development but it has adopted an evidence-based methodology to root any products that will be developed. Grameen Foundation has invested in a solid technical team at AppLab including former bankers to help analyse information researched from clients earning less than $2.5 a day to develop suitable products.

Lesson and recommendation for URHB: URHB must use good evidence to support decisions to support alternative livelihood options for girls wishing to withdraw from sex work. Good market research and feasibility studies must be carried for small business ideas proposed by the girls.

1.4.5 Mentoring approach: Women in Technology in Uganda (WIT)

The big idea: WIT is an initiative that seeks to encourage, inspire and train more women and girls in the technology field through networking, training, mentoring and partnering so as to increase the number of women in technology, the number of technology women entrepreneurs and more girls to take science courses at university so as to reduce the gender gap and compete favourably with our male counterparts for jobs and improve the livelihoods of women in Uganda. WIT believes that every woman has the potential to become anything she aspires to be, at WITU we encourage, inspire and lead each other through: training, mentoring and networking.

What works: Part of WIT's strategy is to increase the number of women in technology in Uganda through mentoring. WIT brings together prominent women in technology in Uganda with aspiring women who would like to succeed in technology through becoming mentors and mentees. WIT believes many women in Uganda have brilliant business ideas or application ideas that have not been started or developed because of lack of business skills or a mentor or finance or the know-how as a woman in technology, thus our idea of a mentoring program.

WIT mobilises female mentors on an ongoing basis all year round. Mentors are well accomplished in the field of technology. It could be a business owner, a top employee holding a technology position, a teacher, social entrepreneur and a technology enthusiast. WIT looks for experienced and skilled professionals that will offer advice,

one-on-one discussions with their menthe, inspiring and training young women to enhance her chances of making it "BIG" in the technology world in a developing economy. Mentoring can be delivered though physical or E-mentoring depending on location of the two parties and preference. WIT usually requires the mentoring period to be not less than 12 months after which both can choose to continue or graduate from the process.Mentees can be anyone that shows visible interest in learning more about the technology field; can be a particular aspect or the general field of tech in Uganda.

Lessons and recommendations for URHB: WIT's approach seems perfect for URHB's proposed project. URHB should consider approaching WIT to get mentors who can support the girls URHB is targeting. Given the girls engaged in sex work may display low self esteem and a need for counselling. Mentors from WIT could provide a unique opportunity for URHB's project.

1.4.6 Life Long Learning for Farmers (L3F Uganda), Commonwealth of Learning, Makerere University's Agricultural Research Institute Kabanyolo

The big idea: Traditionally, the government's agricultural extension service was the main source of information for farmers in Uganda, but the current ratio of extension workers to farmers in the country is 1:24,000, rendering the service largely ineffective. To help solve the many challenges farmers confront which include inadequate road networks, preventing farmers from getting to markets; a lack of credit and financial services; volatile market prices; and a lack of up-to-date information about seeds, weather patterns, appropriate fertilizers, pests, and other agricultural issues. Remote, mountainous, and hard-to-reach areas like Uganda's Kabale district suffer from inadequate access to information of all kinds. Because the region, located in the South-western corner of Uganda, is predominantly agricultural, timely and relevant information for farmers in Kabale would significantly help improve their livelihoods.

A mobile phone application developed by the project Life Long Learning for Farmers in Uganda (L3F Uganda) is helping Kabale farmers get the information they need. The project sends text messages with agricultural updates and information to about 1,000 farmers. This information, disseminated twice weekly by L3F Uganda, has helped farmers get valuable guidance on market access, fertilizer application, plant spacing, timely planting, local diseases, and other topics. The project was instituted as a pilot project in Bufundi, a sub-county of Kabale, in 2009 with the hope of extending it to all of Uganda.

Another major challenge in the Kabale district is low literacy rates, especially among rural farmers. According to the Uganda Bureau of Statistics, less than half of adults in Kabale were literate in 2000, and more than three-quarters of the adult population didn't advance beyond the primary level of education. Because this low literacy rate makes written information useless to many farmers, L3F Uganda has created a voice application for its mobile-phone information service. The recordings are spoken in Rukiga, the local language, and features actual farmers from the region, says Daniel Ninsiima, the creator of the application. "We have used voices from successful farmers around the sub-county because fellow farmers can easily relate to them when they hear them on the other end," Ninsiima explains.Because more than 75 percent of farmers in the project's pilot area own mobile phones, text- and voice-messaging provides an effective grassroots replacement of the government's agricultural extension service.

What works?L3F Uganda has also trained farmers how to bargain and market their produce collectively, as well as helped start a savings and credit cooperative, giving them a local source of funding. The project has also created self-help groups for local farmers, which have instigated conservation efforts to reduce soil erosion and depletion on the

area's steep slopes. And with the help of Commonwealth of Learning the groups have also written a training manual for farmers in the local Rukiga language.

Because L3F Uganda adapts its educational tools to fit farmers' lifestyles and technological capacities, rather than imposing costly or time-intensive educational programs on farmers, the project can make real advances in empowering farmers and improving their livelihoods.

What does not work? The L3F project faces additional challenges, including poor mobile-phone network coverage in remote areas, and the farmers have to pay for the cost of the calls and texts.

Lessons and recommendations for URHB: L3F project has in its approach adapted the technology to fit farmer's lifestyles and technological capacities. This is critical for beneficiary groups such sex workers. URHB has to invest time and energy in understanding the lifestyles of child sex workers and any solutions proposed for them has to suit their life styles.

1.4.7 Promoting agricultural and rural development by harnessing the opportunities that Information and Communication Technologies (ICTs), Women of Uganda Network (WOUGNET)

The big idea: to use of traditional and modern ICT tools to support women farmers increase agricultural production, processing, marketing and livelihood opportunities. Working with women in Northern Uganda by integrating ICTs such as mobile phones to send and receive messages in regard to their crops, community radio to disseminate agricultural information, internet, computers and establishment of Information Centers with emphasis in agricultural information and resources.

Female farmers are more able to adapt to better farming techniques and increase yields and production per unit area when some factors are present, for example: timely weather forecasts, valuable information gathered from the internet and disseminated to farmers, information disseminated over the Community radio, such as early warnings, plant varieties, and marketing opportunities, regular short text messages reminding them about pests and disease control measures, post-harvest strategies and loss mitigation through the ICT platforms.

Wougnet used mobile phones and SMS based platforms to send and receive messages on best agronomic practices, control of pests and diseases, new varieties to be grown. The use of community radios and radio cassettes, internet, computers, coupled with traditional extension workers, establishment of multi- dimensional Information centers in Apac and Amuru Districts and exchange visits programs to foster experience sharing amongst farmers in different parts of the country, ICT workshops and seminars for instance WOUGNET annual Forum called ***Lango Forum on e-Agriculture*** sensitizes rural women farmers, policy makers and the community in general on the important role ICTs play in agricultural and rural development within the region highlighting benefits and challenges involved.WOUGNET works with groups of female farmers of about 30 members each, producing crops at group level and also t individual household levels.

Lessons and recommendations for URHB: It is essential to share the challenges of mobile and internet technologies with target beneficiaries to avoid frustration and easy project fatigue. Emphasis needs to be placed on

fundamental good business practice with mobile and internet technologies as an enhancement and not to replace good business principles.

1.4.8 Citizen witnessing - Uganda Agricultural Technology and Agribusiness Advisory (ATAAS), Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), National Agricultural Advisory Services (NAADS) and National Agricultural Research Organisation (NARO).

The big idea: To use mass citizen report to decrease the rate of incidence of Banana Bacteria Wilt from 42% down to 5% within a year and stop the spread of devastating infection that is killing banana plantations and threatening food security.Banana Bacterial Wilt (BBW) is the single most important threat the banana sub-sector. BBW spreads very fast and if not controlled can cause total yield loss within one year. Yield losses of 90% have been reported on some farms due to banana bacterial wilt. The potential national loss is therefore estimated at $360 million per annum (i.e. 90% of Banana contribution to GDP).BBW is a joint initiative, now financed through ATAAS led by the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), National Agricultural Advisory Services (NAADS) and National Agricultural Research Organization (NARO) and supported by local governments who committed to a common goal of bringing this disease under control.BBW is considering use of Ureport (www.ureport.ug), which is a network of 195,000+ volunteers across Uganda who use mobile technology to report on various issues that are of interest to UNICEF and other development partners for: initial awareness raising; visualization of the epidemic; dissemination of symptoms description and disseminating treatment options. The initiative reached out to UNICEF team requesting them to test the applicability of Ureport to visualize the BBW epidemic and disseminate information to affected communities. After getting the green light and a letter of support from the Ministry, BBW launched a 5-day complain-in close consultation. An SMS was sent to almost 190,000 Ureporters: "*Do you know any farmers whose banana plantations or crops are infected with banana bacterial wilt disease? YES or NO.*"In 24 hours the initiative received over 35,000 responses, mapping the spread of the BBW disease across Uganda.

55% of U-reporters reported knowing farmers who had crops infected with BBW (indicated in green) and 38% said they did not (indicated in red).

A follow up SMS to all respondents, regardless of whether they answered YES or NO to the first poll: "*Banana Bacterial Wilt is a banana disease spread through insects and cutting tools that causes rotting of bunches and drying of male buds (mpumumpu).*"

Another SMS to all respondents: "*55% of U-reporters know plantations with Banana Bacteria Wilt. It attacks matooke, ripens bunches prematurely, dries male bud. SMS BBW for more info*".

17,000 Ureporters requested additional details. All got this response: "*To control, avoid moving infected plant, break male bud, cut infected plants, clean cutting tools using jik or flame. (1 JIK: in 5 water). Tell someone you know.*"

Over the five days of BBW engagement, more than 52,000 U-reporters either provided information, requested information or both via SMS. The 19% response rate to the first poll was the fifth highest response to a poll in the two-year, 200-question history of Ureport. Through this exercise, the initiative was able to map the disease and make almost 190,000 people aware of what BBW does and what action they could take. And this only cost 3 US cents per person.

What works?What Ureport made possible was not only information dissemination or data gathering, but a nationwide conversation focused on a critical issue for Ugandans. It allowed the initiative to take a real time snapshot of the situation, in the wake of the launch of Banana Bacterial Wilt Rapid Response Initiative. All it took was the trust of a TTL, passion to save bananas to feed the kids, commitment to demonstrate the power of mobile, and ability to leverage existing innovation.

Lessons and recommendations for URHB: It is vital for URHB to have a passionate team at URHB to support any mobile and internet technology interventions initiated by girls wishing to withdraw from sex work.

1.4.9 The Satellife PDA Project, Makerere University Medical School and Healthnet Uganda

The big idea : To demonstrate the viability of Personal Digital Assistants (PDAs) - also known as handheld computers - for addressing the digital divide[i] among health professionals in Africa. The Project linked health professionals to each other and to reliable sources of information, including modem to modem telephone links and the internet using geostationary satellites.

The aim of the satellife project was to explore questions related to the selection and design of appropriate, affordable technology and locally relevant content for use in African healthcare environment. The project specially targeted assessing the usefulness of the PDA's for data collection and information dissemination. The PDAs were tested in the daily work environments of physicians, medical officers and medical students. This was to gain a perspective on the real issues that affect the adoption of ICTs in the health environment. ICTs were therefore used to collect health information to support decision making, improving Doctor's access to current medical information, linking healthcare professionals so they could share information and knowledge and enhance health administration, remote diagnostics and distribution of medical supplies.

In Uganda, the project tested the use and usefulness of PDAs by medical practitioners to conduct an epidemiological survey on malaria and to access and use medical reference tools and texts. The Uganda project was implemented by the Makerere University Medical School and Healthnet Uganda and funded by the International Development Research Centre (IDRC), Canada.

What Works? ICTs have enabled doctors to do remote consultations and diagnosis, access medical information and coordinate research more effectively. More traditional ICTs like radio and television have been beneficial in disease prevention and epidemic response. In Uganda, this has been evident in response to HIV/AIDS, Malaria and Cholera amongst other diseases. More recent ICTs like mobile phones, email and the internet could also be used for health alerts to the general public and medical consultations.

Collaboration is possible between physicians within and between medical sites. Physicians consulted each other on patient treatment and this helped reduce the number of referral cases to main hospitals. Patients were then able to cut transport costs and unnecessary journeys that could result in further harm, especially to patients who are terminally ill.

Data collection and research was also possible at a more cost effective form. Using the PDAs, email and going straight to the internet helped cuts initial costs spent on travel in the process of data collection.

Through the project, remote mentoring/teaching was possible. ICTs enabled training in skills from one hospital to another for instance between Mulago hospital and Butabika mental hospital in relation to psychiatry.

ICTs have also enabled tele-homecare. Patients can now consult doctors via the telephone (call or SMS) or email. Several patients use the mobile phone and SMS to book appointments to meet their doctors, call for emergency services in case of accidents and even set reminders for taking medication.

ICTs also enable distance learning for health personnel and others interesting in researching on several health issues. There are several sites available giving information HIV/AIDS and other diseases like Malaria. Further information can be shared through radio and television or on CD ROMS, by email or teleconferencing.

What does not work? Although ICTs has the potential to be greatly beneficial for the health sector of a developing country, its success is sometimes marred by challenges and contradictions. This includes the workable condition and costs of ICT equipment, level of awareness and skills of the potential users, technology compatibility and policy provisions amongst others.

The poor ICT infrastructure status in Uganda currently is unable to adequately support the potential benefits of ICTs in the health sector. Very few hospitals are computerised, and when they are, internet access[i] is limited. Most hospitals, including big national hospitals like the Mulago hospital, still use manual systems of recording and storing patient information.

Cost of accessing the internet, maintaining the equipment and buying new ones is also a challenge. In other cases costs of installing internet facilities and maintaining it is also as challenge for poor countries like Uganda.

In addition to the costs and status of infrastructure, several hospitals fail to work together because of the incompatibility of equipment and software. Related to this is the presence and availability of experts in real time. In cases where consultations have to be made across continents, there is also the issue of time difference and presence of experts when they are required.

Most of the information available on the internet is in English or in languages not accessible to the wider segments of the population. For those who can access English, there is the challenge of understanding medical jargon used in most of these sites.

The project implementation was further slowed down when the Uganda Revenue Authority (URA), confiscated project equipment and delayed releasing them. This action contradicts the policy provisions that provide tax exemptions on ICT-related equipment coming into the country. There is therefore, a disconnect between what stated government intentions and what actually happens. This also illuminates the process which the Ugandan government disseminates information on newly passed policies and how implementation is ensured. Some government officials and departments are sometimes not aware of new passed policies and laws.

The gender dimension of the Project: Despite the benefits of the Satellife project, there is a need for a gender analysis[i]. According to Longwe (1991), a project may be considered negative, neutral or positive depending how many women participate in it: a project is considered be negative if it does not involve women at all; it is neutral if it recognises women; and positive if considers women's issues in its design and implementation.

In relation to this framework, the Satellife project can be said to be neutral. Although the project did not specifically target women, women are known to have participated. At the project team level, at least two women doctors were involved. However, the level of decision-making that these female doctors had in the project is not documented. It is therefore difficult to establish the level of influence they had in shaping and directing the project, and if their presence made a difference in terms consideration of gender issues. A further study, involving an in-depth interview with these women doctors would therefore be helpful in establishing what happened.

In addition, it would be necessary to analyse the number of women who participated in the project at the lower levels, including at the technical and beneficiary levels. This would allow analysis on the points of access according to gender, attitudes towards ICTs within the health sector, differences in frequency of use by men and women, and

importantly, the relationship between gender, access and attitude. Unfortunately, there are currently insufficient information available to enable this kind of analysis. Most of the information on user-patterns is not gender disaggregated. This is a common aspect found in most project reports that do not pay particular attention to gender.

In terms of capacity building for the project staff, training was offered in some occasions but the documentations indicate that only male staff went for training (see the Healthnet technical report of 2004:14-16 at http://www.healthnet.org/idrcreport.html)

Lessons and recommendations for URHB: Given URHB's project targets girls working sex workers. In essence it is girls' project. A thorough gender analysis must underpin the design of the interventions in order to consider the intervention positive from a gender lens. This means the project must considers the girls issues in its design and implementation.

1.5 Assignment Tasks 2 & 3: Interview girls working as child sex workers in stop-over towns targeted by URHB and identify specific alternative livelihoods aspirations beyond sex work the girls hold. Research feasibility firstly of alternative livelihoods aspirations held by girls; and secondly opportunities for using mobile and internet technologies to enhance alternative livelihoods aspirations held by girls wishing to withdraw from sex work.

1.5.1 Objectives:

The short study had an objective of collecting information to answer three main questions:

What is the background of girls working as sex workers?

- What are the socioeconomic characteristics of girls working sex workers in URHB's targeted stop over towns?
- Who are their main clients?
- Why they are working as sex workers?

What are the opportunities and challenges for their withdrawal from sex work?

- What are their life aspirations beyond sex work and how much would they like to earn from those aspirations to consider quitting sex work?
- What other trade or technical skills do the girls possess?
- Have they ever attempted to quit sex work? What did they do during that period?

What are the opportunities for using mobile and internet technologies to enhance the withdrawal process?

- Do they know of friends who are using mobile or internet technologies in their other work
- Do they know how to use the internet?

1.5.2 Background and hypotheses

URHB and its partner ChildHope believe that girls working as child sex workers have several productive assets such as resilience, lack of fear and risk-taking. If deployed to developing alternative livelihoods; the likelihood that the girls

may be able to withdraw from sex work completely increases significantly particularly if these assets are focussed on developing alternative livelihood options consistent with the girls' own primary livelihoods aspirations. Those that they held before joining sex work.

1.5.3 Research methodology

As a principal research methodology used was nonexperimental with cross-sectional observations. Data would be largely retrospective.Weemployed semi-structured one-to-one interviews and focus group discussions with child sex workers in two stop over towns Naluwerere and Mbiko. The data from the fieldwork was both qualitative and quantitative. Given the duration of fieldwork, it was not feasible to conduct a large-scale survey to obtain in-depth quantitative data. We interviewed 30 child sex workers in Naluwerere Stop over town and 10 adult female sex workers in Mbiko stop over town. With an estimate of 100 child sex workers in Naluwerere, sampling 30 represented 30% which is statistically significant.

We made deliberate efforts to have a representative sample of the girls working sex workers in the stop over towns. All over 90% of the interviewees were aged below 18. In order to collect the data on former child sex worker-relevant business opportunities, we also interviewed 12 business or professionals involved in running relatively successful business or enterprises identified by the girls as possible livelihood alternatives for example women owning successful hair salons, teachers, prison warders and other. We subjected each of the proposed livelihood option to a mini-SWOT analysis which was filled in by people operating those livelihoods. We also utilised secondary sources, including journal articles, research papers, previous surveys,programme documents and consultant reports on child sex work to inform our analysis.

1.5.4 Sampling

We employed a step-by-step sampling strategy guided by the Household Economy Approach(Food Economy Group and Save the Children 2007). This sampling technique is oftenconducted as part of a battery of quick appraisal tools by those who are assigned to carry out alivelihood assessment within a short period. First, URHB staff contacted child sex workers in Naluwerere and Mbiko stop-over towns through the auspices of its knowledge room where sex workers usually come to get free medical services. In particular URHB community workers used an approach called 'child sex workers leaders and asked them to be research assistants.

Second, we had discussions with these leaders about theeconomic structures and general features of the livelihood strategies of child sex workers. Finally we asked the researchassistants to suggest which child sex workers were considered to be typical examples of these categoriesin their sex work community. After having chosen candidate child sex workers, we requested the researchassistants to mobilise them, introduce them to us.

At the first meeting, we explained to the child sex workers about ourselves and the purpose of theresearch, as well as the principles of confidentiality and anonymity. Only when I was able toobtain their consent (most individuals were willing to participate in this research project) didI decide to move onto interviews with them.

1.5.4 Data Collection

After articulating the objectives for data collection, the next steps involved ascertaining: who will collect the data, what data will be collected, when the data will be collected, where the data will be collected, and how the data will be collected. We also considered how data will be analyzed and presented. Data was collected by the lead consultant and associate consultants as principal interviewers. The peer research assistants assisted in organising the schedule of child sex workers to be interviewed. Interviews were conducted on a one-to-one basis in secluded rooms at URHB's knowledge room. Data was collected on a structured questionnaire filled by the consultants documenting verbal responses of child sex workers. Recorders were also used to ensure all conversations were correctly transcribed.The questionnaire was then entered into Epiinfo 7.1 to facilitate data capture and analysis. Classic analysis was carried out in Epiinfo.

1.5.5 Analyses

Variable relating to girls' socioeconomic characteristics

Age: To confirm child sex work and likelihood of early initiation into sexual activity, the age of the girls was tracked as well as age at which first sexual activity was had. Equally one of URHB's proposed approaches is early withdrawal from the streets. It was therefore vital to understand the age of the girls.

Nationality: We tracked the nationality of the girls to establish whether the problem was a local one or it was imported. This has implications of understanding whether the girls are being trafficked or not.

Number of children and people the girls stayed with: These two variables were tracked to establish the level of family responsibilities the girls shoulder. It was vital to establish whether there are problems of child care given some girls are child sex workers because of their parents' encouragement.

Are your parents alive? Death of parents is often cited as a trigger factor for entry into sex work. We wanted to confirm this.

Highest level education: We wanted to track whether the level of education was a significant factor for entry into sex work.

Main clients: it was vital to establish who the main clients for the girls' services were. URHB will have to develop approaches to address the demand side of the problem. Identifying what the main clients do for a living would be a good starting point.

Age of initiation into sex activity: This information would existence of child sex abuse.

Parents' awareness and opinion about the girls' involvement in sex work: We wanted to establish whether parents were supportive, against or not bothered. This information would be extremely vital in supporting URHB develop strategies for working with source communities.

Variable relating to opportunities and challenges for their withdrawal from sex work?

Reason for engaging in sex work: we wanted to improve URHB's understanding of why the specific groups of girls are working in the sex industry. This is extremely vital for supporting URHB develop withdraw and prevention strategies.

Other livelihood aspirations: We wanted to understand what other work apart from child sex work the girls were interested in. This would provide URHB immediate options to consider exploring to support girls wishing to withdraw. It is also vital that solutions explored consider interest of girls.

Income targets: We wanted to understand how much income from alternative livelihood aspirations the girls considered adequate to encourage them to stop child sex work. This would help URHB to establish a level of support for any considered alternative livelihoods support.

Trade or technical skills girls have: We wanted to understand if the girls had any other livelihoods skills – trade or technical which alternative livelihoods could be developed around.

Current income and other economic activities (apart from sex work) engaged in: we wanted to establish how much the girls were making from sex work and what other economic activities were they engaged in. This information would enable us establish how much more income would represent a significant increase compared to their income

targets. It would also enable us identify viable alternatives to sex works from information on other economic activities the girls were engaged in.

Attempts to withdraw from sex work: We wanted to establish if the girls had tried to stop sex work and what other economic activities did they pursue during that time. This would be a proxy indicator of willingness to quit as well as pointer to alternative livelihoods. Equally important we wanted to establish what factors drove the girls back into sex trade.

Friends who quit sex work: we wanted to establish if the girls were aware of their friends who successfully quit sex work. These examples could provide URHB with options to consider developing for other girls.

Variables relating opportunities for using mobile and internet technologies to enhance the withdrawal processes

Are friends who quit using mobiles or internet technologies in their new work? We wanted to establish if any of the girls' friends who quit sex work were using mobile or internet technologies in their new work. This would point to opportunities for success in URHB's attempts to use mobile and internet technologies to develop more meaningful alternative livelihoods for girls.

Knowledge of the internet: Given all the girls have mobile phones, it was critical to know if any of the girls knew how to use the internet.

Suggestions by girls themselves to help younger girls to withdraw from sex work: We wanted the girls to suggest options to enable other girls to withdraw from sex work

1.6 RESULTS AND FINDINGS

1.6.1 Age: The majority of girls (52%) are aged between 16-17 years. The number of girls drastically from onegirl aged 15 to seven girls aged 16. Equally it drastically falls from seven girls aged 17 to only three girls aged 18 and 19 respectively. It seems ages 16 and 17 are prime for child sex work in the stop-over towns targeted by URHB. Closely related, 18 girls (67%) were initiated into sexual activity between the ages of 13 and 15 with ages 14 seeming to the prime age of initiation into sexual activity,

Age of initiation into sex activity	Freq	Percent	Cum. Percent
11	1	3.70%	3.70%
12	1	3.70%	7.41%
13	6	22.22%	29.63%
14	7	25.93%	55.56%
15	5	18.52%	74.07%
16	3	11.11%	85.19%
17	3	11.11%	96.30%
20	1	3.70%	100.00%
Total	27	100.00%	100.00%

1.6.2 Nationality: 89% of the girls are Uganda. This confirms the problem is presently a local one. Even the girls who are non-Ugandan had grown up in the respective stop-over town.

NATIONALITY	Frequency	Percent	Cum. Percent
Uganda	24	88.89%	88.89%
Kenyan	2	7.41%	96.30%
Rwandese	1	3.70%	100.00%
Total	27	100.00%	100.00%

1.6.3 Number of children: 63% of the girls (17) do not have children. 33% of the girls (9) have one child and 4% (one girl) have two children. It appears it is easier to remain in sex trade if the girl has none or one child. The more children the girl has the harder it is to remain the trade.

1.6.4 Living with other people: The majority of girls either live alone or with their child or friend. A total of 33% of the girls (nine girls) live alone. Another 33% of the girls (nine girls) stay with one other person. Four girls (15%) stay with two other people.

1.6.5 Parents: 16 girls had lost one or both parents. Death of a parent, particularly the father seems to trigger entry into sex work. Fathers of 15 girls had passed away. Even if the father was alive but not available entry into sex work was likely particularly when families are unable to provide girls' basic needs.

ARE YOUR PARENTS STILL ALIVE?	Frequency	Percent	Cum. Percent
Both alive	11	40.74%	40.74%
Father passed away	5	18.52%	59.26%
Father and mother passed away	10	37.04%	96.30%
Mother passed away	1	3.70%	100.00%
Total	27	100.00%	100.00%

1.6.6 Awareness of parents that girls were engaged in sex work: 17 of the girls (68%) indicated that their parents were not aware that their daughters were working as sex workers.

19. Are your parents aware that you are engaged in sex work?	Frequency	Percent	Cum. Percent
No	17	68.00%	68.00%
Yes	8	32.00%	100.00%
Total	25	100.00%	100.00%

Cross-tabulating parents' knowledge that daughters were engaged in sex work with their opinion of about this knowledge, we found the following:

	20. What is their opinion about your involvement in the sex trade?				
19. Are your parents aware that you are engaged in sex work?	**Against**	**Not bothered**	**Others**	**Supportive**	**Total**
No	5	1	6	0	12
Row%	41.67%	8.33%	50.00%	0.00%	100.00%
Col%	71.43%	50.00%	100.00%	0.00%	60.00%
Yes	2	1	0	5	8
Row%	25.00%	12.50%	0.00%	62.50%	100.00%
Col%	28.57%	50.00%	0.00%	100.00%	40.00%
TOTAL	7	2	6	5	20
Row%	35.00%	10.00%	30.00%	25.00%	100.00%
Col%	100.00%	100.00%	100.00%	100.00%	100.00%

Single Table Analysis

Chi-Squared df Probability

13.7841 3 0.0032

Majority of parents who were aware that their daughters were working as sex workers were generally supportive. Five out of eight girls whose parents were aware they were sex workers were supportive. Girls whose parents were not aware generally indicated their parents were against their work. Girls who indicated other meant parents had died before girls joined sex work but if they were alive they would have been against.

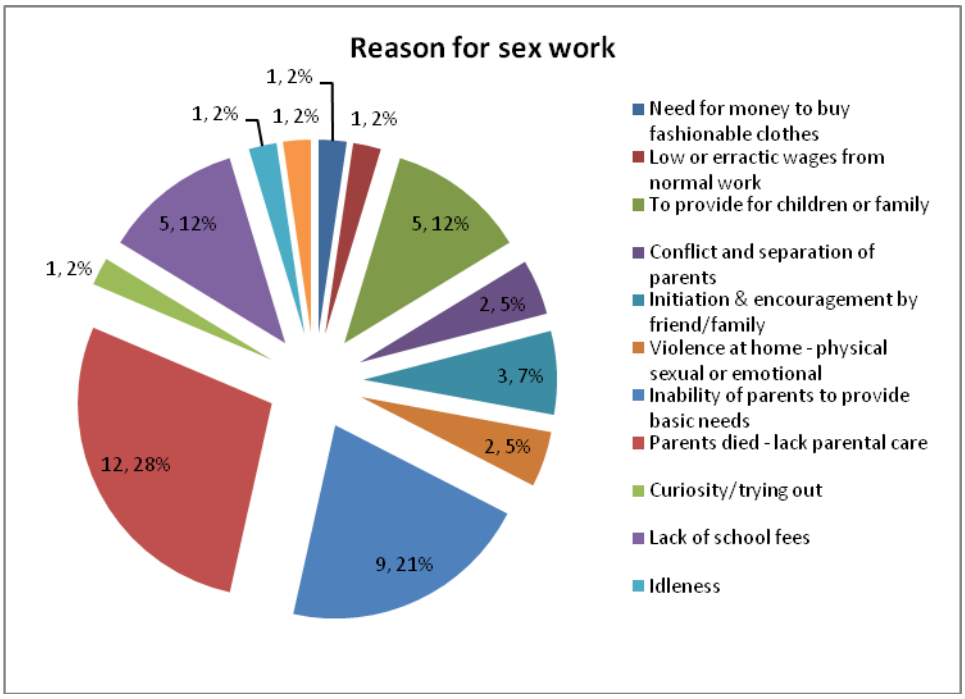
1.6.7Education level: Majority of girls had attained lower secondary (52%) or upper primary (32%). It appears the underlying factors for entry into sex work are death of parents and early initiation into sexual activity. Death of parents means girls are likely to drop out of school. The age at which girls drop out school is consistent with the indicated ages of initiation into sexual activity.

HIGHEST LEVEL OF EDUCATION ATTAINED	Frequency	Percent	Cum. Percent
Lower secondary	13	52.00%	52.00%
No Formal Education	1	4.00%	56.00%
P1-P4	2	8.00%	64.00%
P5-P7	8	32.00%	96.00%
Tertiary	1	4.00%	100.00%
Total	25	100.00%	100.00%

1.6.8 Main clients: Overwhelmingly 72% of the girls (21 girls) indicated that foreign long-distance truck drivers were their main clients. Local clients were few and were mainly motorcycle taxi riders (boda boda), shop keepers and soldiers.

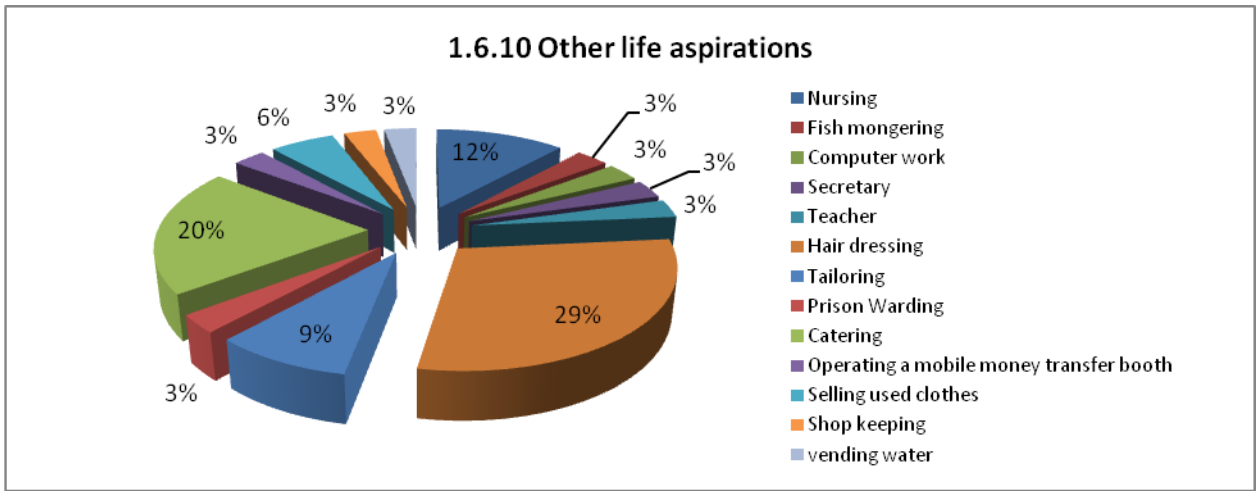
Main clients	Frequency	Percent
Shop keepers	2	6.90%
Soldiers	1	3.45%
Others	2	6.90%
Boda boda riders	3	10.34%
Truck drivers	21	72.41%
Total	29	100.00%

1.6.9 Reason for sex work:



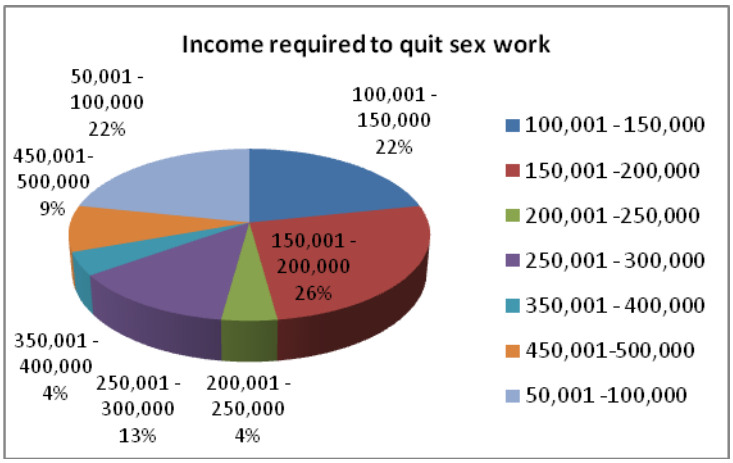
Death of parents resulting into lack of parental care is the single the main trigger factor for entry into sex work. When combined with need to provide for children or family, lack of basic needs and school fees; girls become really vulnerable to joining sex work.

Reason	Frequency	Percent
Need for money to buy fashionable clothes	1	2.33%
Low or erratic wages from normal work	1	2.33%
To provide for children or family	5	11.63%
Conflict and separation of parents	2	4.65%
Initiation & encouragement by friend/family	3	6.98%
Violence at home - physical sexual or emotional	2	4.65%
Inability of parents to provide basic needs	9	20.93%
Parents died - lack parental care	12	27.91%
Curiosity/trying out	1	2.33%
Lack of school fees	5	11.63%
Idleness	1	2.33%
Addiction to sex	1	2.33%
	43	

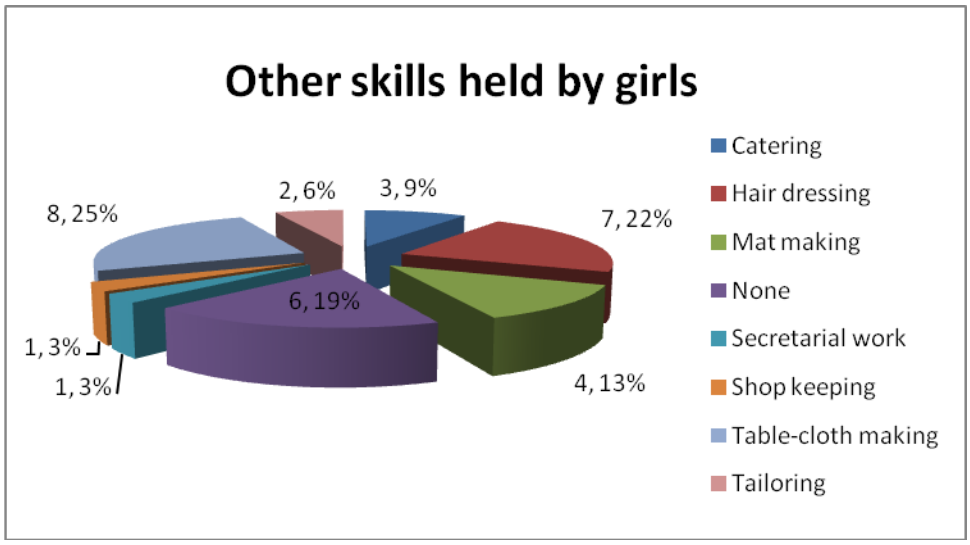


Beyond sex work, majority of girls (29%) would like to be hair dressers followed by catering (20%), nursing (12%) and tailoring (9%) respectively. Critically looking at these alternative livelihood aspirations one finds they seem to be low indicating that girls suffer low expectations from life.

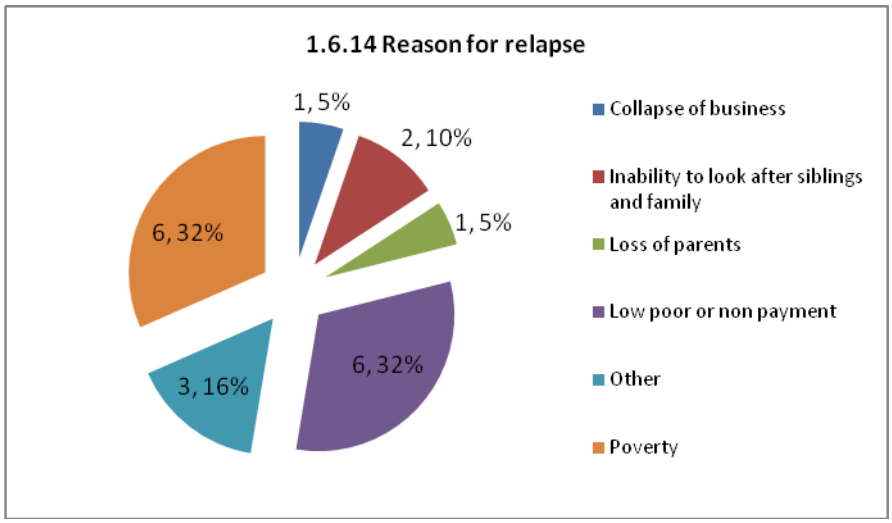
1.6.11 Income: Reviewing income required to quit sex work, it appears majority of girls (70%) would like to earn between 50,000/= (approx 13 GBP) and 300,000/= (approx 76 GBP). This has implications for the type of alternatives livelihoods proposed by URHB. They must have potential to generate at least 300,000/= per month.



1.6.12Other trade or technical skills: Majority of girls (25%) have skills in table cloth making, followed by 22% with skills in hair dressing and 13% in mat making. A large group of girls (19%) lack any other skills. These findings while exciting also present a challenge to URHB. This is because most these skills rarely present significant business opportunities and are time and labour intensive which may not of interest to the girls targeted.



1.6.13 Attempts to quit sex work: Nearly 71% of the girls have attempted to quit sex work. None of the girls interviewed indicated that they enjoyed sex work. This is good news for URHB's efforts. It means there is will around which interventions for withdrawal can be developed. How low or non-payment from alternative pursued (32%) and poverty (32%) were the mains reason why girls resumed sex work.



1.6.15Friends quitting: Nearly 76% of the girls were aware of friends who had left sex work. Majority got married (23%) following by hotel chamber maids (16%) and hair dressing (13%).

Alternatives friends have attempted	Frequency	Percent
Hair dressing	4	12.90%
Hotel chamber maid	5	16.13%
House maid work	3	9.68%
Marriage	7	22.58%
Mobile money services	1	3.23%
Table waiting	2	6.45%
Tailoring	2	6.45%
Other	4	12.90%
Shop keeping	3	9.68%

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1.6.16 Opportunities for using mobile and internet technologies to enhance the withdrawal processes

Interestingly about 27% of girls indicated their friends who had quit sex work were using either mobile or internet technologies in their new livelihoods. This suggests that there opportunities around which URHB can build alternative livelihoods but the challenge is that nearly 82% of the girls indicated that they did not know how to use the internet. Training in new technologies promoted by URHB will be a must.

1.7 CONCLUSIONS AND RECOMMENDATIONS

From our analysis of the literature and interviews with girls, we recommend the following strategies for URHB to consider in supporting meaningful withdrawal of girls from sex worker into alternative livelihoods powered by mobile and internet technologies.

Practical applications of mobile and internet have been developed for health, nutrition,education, social transfers, child protection and other areas of development programming.

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ICT can contribute to support the achievementof development objectives through existing technologies(such as radios or mobile phones) or through new technical innovations. In both cases, cost-analysis, functionality and participatory assessments are needed to analyse implications for existing communication patterns and culture.

A number of guiding questionscan assist in the selection of the most appropriate applications

1. Is there a need to create new applicationsor can existing solutions be used?
2. What are the characteristics of the user group and the environment(urban –rural, existing networks and coverage etc.)?
3. What technicalexpertise is required forinstalling andmaintaining the system?
4. How well will investments in equipment and capacity meet the needs, expected impact, benefits and outcomesin terms of result delivery?
5. What are the potential partnerships for sustainable capacity-building and service delivery? What are the roles of public and private serviceproviders?
6. What are the financial resources needed in the short, medium and long termto establish and maintain interventions?

1.8 ANNEXURE