UNDER ONE ROOF, BRINGING DIGITAL SKILLS, SOLAR ENERGY & HOPE FOR FUTURE EMPLOYMENT

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While the global trend advances further into faster and more efficient technology-enabled education, health, agriculture, energy and communications, there remain significant gaps that go unnoticed amidst the sweeping advancements in gender parity, electrification and opportunities for employment.

The global access to electricity stands at 87%[1] with access to mobile devices at 97%[2]. However, the inequity of access needs attention. For example, while some countries have over 100%[3] on mobile device accessibility as in Finland (229%), others like Niger and numerous island states, have less than 50% on the same indicator. Similarly, the disparity and inequity are stark for electrification. "Nearly 1.3 billion people worldwide, or 19% of the global population, lacked electricity in 2010. That number is projected to decline to about 1 billion people, or 12% of the global population by 2030. More than eight out of ten people without access to electricity live in rural areas, making independent microgrids an attractive solution."[4] The access to reliable sources of energy can greatly impact education, health, social and economic development[5].

In addition to regional disparity, global data show how the glaring digital divide prevents women from accessing financial tools or new markets. Women are 36% less likely than men to own mobile money accounts[6], while 114 million fewer women own a mobile phone, and women are less likely to use their mobile phones or access Internet than men[7]. One most obvious way to ensure economic wellbeing to improve lives is through employment which can lift families out of poverty—unfortunately, the World Bank statistics show that the global employment rates have been slowly declining since 1991 (61.8%) to 2016 (58.5%)[8].

This landscape on electrification, connectivity, gender disparity and employment highlights severe inequities, but also presents a huge potential to tailor initiatives that bring together electrification via sustainable and renewable energy as a means to improve lives in marginalized areas—especially of women—for holistic growth and development.

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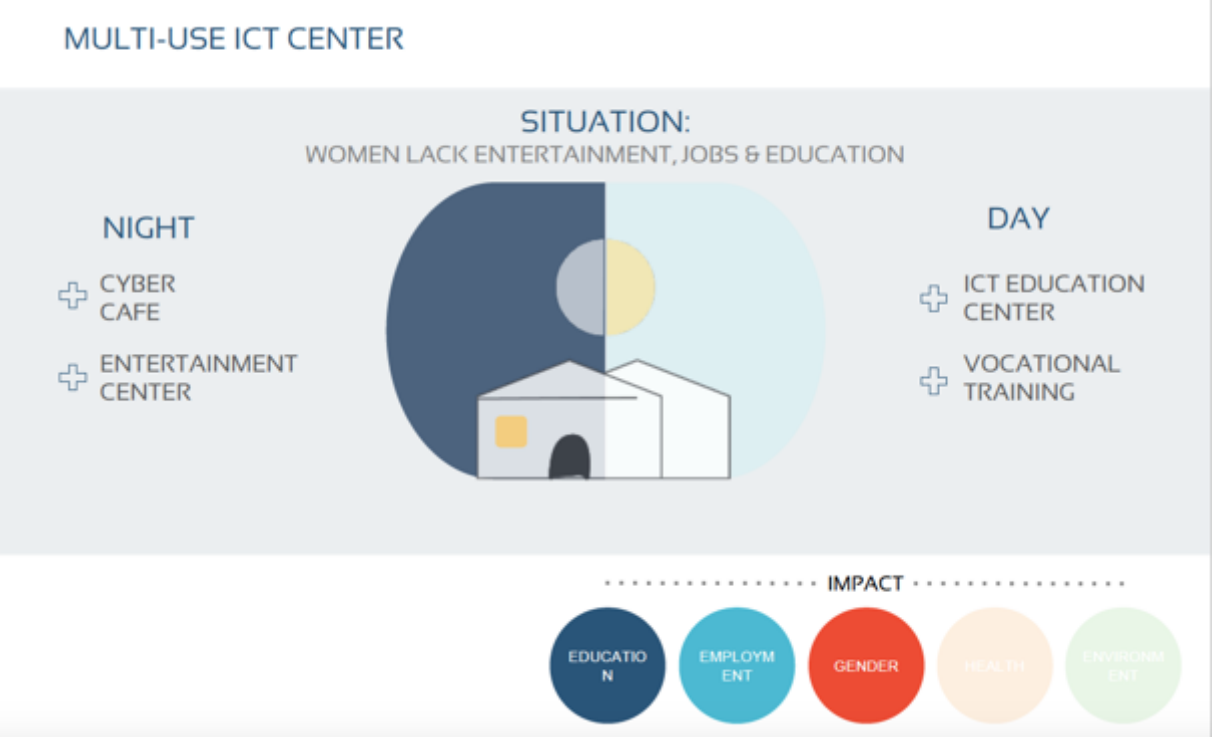
[1] https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS
[2] Subscriptions per 100 people. https://data.worldbank.org/indicator/IT.CEL.SETS.P2
[3] subscriptions per 100 people
[4]http://www.nature.com/polopoly_fs/7.16024.1394537098!/image/grid2.jpg_gen/derivatives/landscape_630/grid2.jpg
[5] https://true-origin.com/posts/2017/4/2/week-3-mapping-electrification-needs
[6] Connect Women. Mapping the mobile money gender gap: Insights from Cote d'Ivoire and Mali. Accessed 24th April 2018 https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2017/04/Mapping-the-mobile-money-gender-gap-Insights-from-Cote-d'Ivoire-and-Mali.pdf
[7] https://www.gsma.com/mobilefordevelopment/programme/connected-women/women-and-mobile-in-india-realising-the-opportunity/
[8] https://data.worldbank.org/indicator/SL.EMP.TOTL.SP.ZS

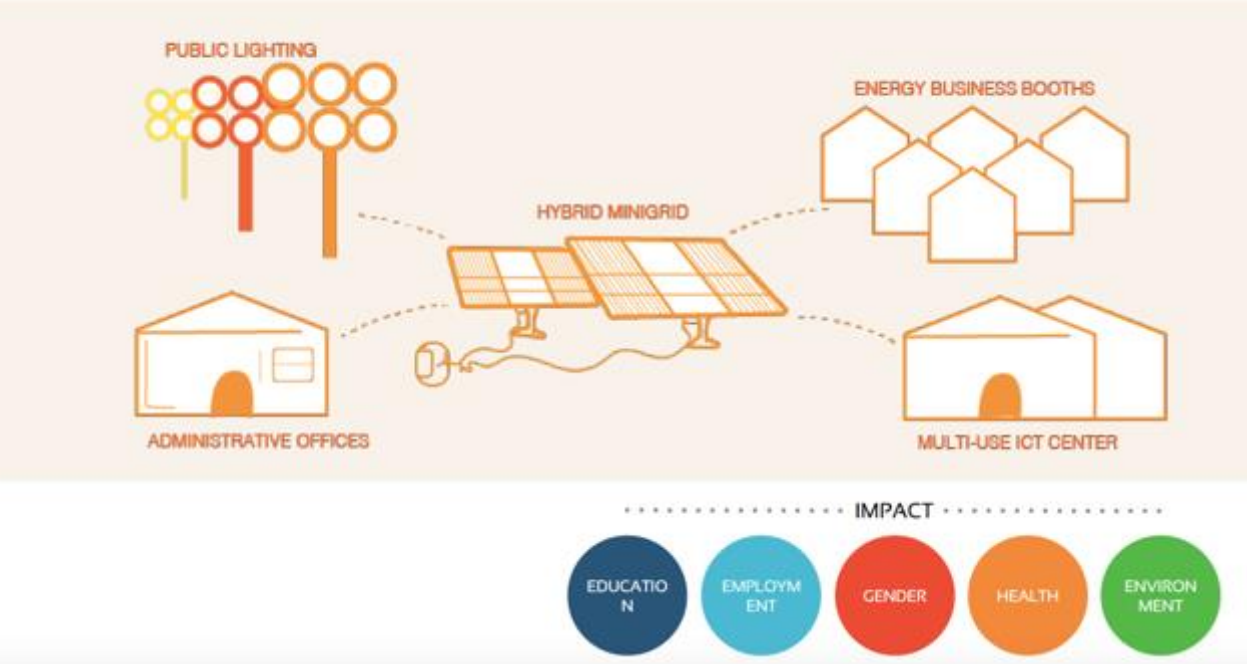
Taking all these factors into consideration, i4SD and CSD's Connect To Learn teams have been envisioning concrete ways to provide income-generating skills for women through targeted skills training with the use of sustainable and renewable energy. The result is a comprehensive "ICT Center" model for Information and Communication Technology (ICT) for women's entrepreneurship and empowerment in India proposed for Telangana state. The Center brings a unique combination of sectors such as energy, education, gender to meet the Sustainable Development Goals (SDGs).

Currently, the inclusion of women in cyber café businesses in India face several challenges: first, there are social and family restrictions stemming from gender discrimination and the burden of household tasks. Further, these businesses usually offer unfavorable environments for women, as they are frequented by male crowds without female attendants. Finally, cyber cafés have poor infrastructure due to slow power and Internet connectivity, thus showing the need for a renewable energy-powered model[9]. The ICT Center will establish a cybercafé and training center for women, powered by a solar mini-grid for reliable and affordable electricity. The Center will feature vocational training and educational programs for digital skills that will support women's uptake into the labor force for skills desired in the local job market. The Center will be a safe space where women can work together to learn new skills and mentor one another. To ensure that the skills attained have real and immediate use, an income-generating model of cyber café-training center combination, powered by renewable energy, will be the main tangible output of this model. The solar mini-grid installed at the Center will enable powering of the devices, as well as other energy needs in the vicinity and community.

[9]Singh et. al. (2015). IMPACT OF ICT IN SMALL TOWNS IN INDIA: A CASE OF PUBLIC ACCESS TO INTERNET



Portions of the proposed ICT Center model has already been tested: smaller pilots of technical skills training classes for women have been helping mostly illiterate women in urban slums in Bhopal to use English and computers to improve their artisan crafts as well as to help broaden their market and product research for their business. Pilots have also been conducted with solar mini-grids with storage, providing a cleaner and more sustainable solution than fossil fuel-based systems for powering off-grid facilities. This system can also provide consistency and security in places with unreliable grid connections, therefore making it one of the best choices of technology to power the proposed ICT Centers.



Skills training offered through the ICT Center will be key to various employment opportunities linked to energy business, business administration, teaching, trade, tourism and entertainment industries—prioritizing opening more opportunities for women. The program model for the education component will follow a Training-of-Trainers (TOT) model. The focus of the center programs is to build cohorts of knowledgeable individuals who are not simply acquiring skills, but also acquiring skills and competencies to train and mentor others.

While cross-sectoral approach has been a key phrase in development, few initiatives have demonstrated a fully comprehensive approach designed to simultaneously reduce inequalities by addressing job market-aligned education needs, for women, for economic growth, with affordable and clean energy—this model gives us a chance to implement multiple Sustainable Development Goals under one roof.

i4SD (Infrastructure for Sustainable Development) *is a social impact design firm that uses innovation to change the way infrastructure systems are designed and operated. Their mission is to enable universal access to affordable and modern infrastructure services: Energy, Water, Transport & Connectivity. i4SD brings together traditional master planning, IoT technologies and public-private partnerships to deliver sustainable infrastructure projects providing access to essential services in traditionally undeserved areas.*

Center for Sustainable Development (CSD) *is positioned at the heart of the Earth Institute at Columbia University, whose research and innovative solutions support governments and organizations around the world to achieve the Sustainable Development Goals. The education arm of the Center, Connect To Learn, is an initiative of CSD, Ericsson and Millennium Promise whose mission is to address the lack of universal access to quality education, with an emphasis on the marginalized - especially girls - in resource poor settings globally.*