Women and **i**CT **F**rontier **I**nitiative

Enabling Role of ICT for Women Entrepreneurs

Module C2

UNITED NATIONS
APCICT-ESCAP

Core Content

Module C2:

Enabling Role of ICT for Women Entrepreneurs

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APC𝑖CT **ASIAN AND PACIFIC TRAINING CENTRE FOR INFORMATION AND COMMUNICATION TECHNOLOGY FOR DEVELOPMENT**

Women and ICT Frontier Initiative – Core Content

Preface

Women's entrepreneurship is a force for positive social transformation. Most women entrepreneurs are innovative, determined to overcome obstacles and remain open to lifelong learning. Their success generates ripple effects, from increased household savings and investment in children's health and education, to boosting job creation and significant increases in national GDP.

While the Asia-Pacific region has closed some of the gender gaps in health and education, women tend to still be more excluded than men from economic opportunities, whether by restricted entry into the labour force, lower wages, vulnerability in dangerous occupations, or lower access to finance and credit.

The 2030 Agenda for Sustainable Development is our global blueprint for the economically, socially and environmentally sustainable future we want, for this and future generations. With the gender gap having changed very little for more than 20 years however, realizing this vision in Asia and the Pacific will be even more challenging. Inequalities stifle economic dynamism, undermine social cohesion and hamper environmental sustainability. Addressing persistent inequalities requires us to tackle the roots of poverty and discrimination, and to provide adequate social protection to the most vulnerable. This also requires the harnessing of science, technology and innovation, as well as leveraging the power of Information and Communication Technologies (ICTs) to increase opportunities in all spheres of development.

ICTs are valuable enabling tools for socio-economic development, social participation and empowerment, yet specific segments of the population continue to face disadvantages resulting from their lack of access and capacity to use these technologies. In order to bridge this digital divide and to help address the gender gaps that remain, the United Nations Asian and Pacific Training Centre for ICT for Development (UN-APCICT) has developed the Women and ICT Frontier Initiative (WIFI) to support women entrepreneurs with fundamental knowledge of business management, ICT skills and online resources. The programme also actively promotes an enabling policy environment that will specifically tackle the institutional barriers that lie in the way of women's advancement.

The WIFI modules reflect the proposition that the development of both ICT skills and entrepreneurial knowledge are critical to improving livelihoods and promoting the overall economic prosperity and well-being of women. WIFI marks a milestone in building an inclusive and sustainable future with equal opportunities and benefits for all.

Hyeun-Suk Rhee
Director
UN-APCICT/ESCAP

About the Module

The primary objective of this module is to introduce the key concepts of entrepreneurship and entrepreneurs. It also focuses on the global and regional status of women entrepreneurs, entrepreneurship's relations to women's empowerment, the barriers and enablers faced by women entrepreneurs, and the role of Information and Communication Technology (ICT) in women's entrepreneurship.

The module has three sections, where key concepts are explained with the support of numerous real-world examples and case studies. Each section ends with a set of interactive exercises.

Notes for trainers are available at the end of this module to provide suggestions in the delivery of the training to the target audience and the enrichment of this material in their local setting.

Learning outcomes

Upon completion of the module, a learner will be able to:
1. Understand how entrepreneurship can lead to women's empowerment
2. Understand the barriers and enabling environment for women entrepreneurs
3. Appreciate the role of ICT in supporting women's entrepreneurship

Target Audience

The target audience of this module are existing and aspiring women entrepreneurs, policymakers, government officers, community organizers, civil society, and other related stakeholders.

Duration

6 hours / one training day.

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List of Acronyms

APCICT	Asian and Pacific Training Centre for Information and Communication Technology for Development (United Nations)
C1	WIFI Core Content – Module C1: Women's Empowerment, SDGs and ICT
C2	WIFI Core Content – Module C2: Enabling Role of ICT for Women Entrepreneurs
CEO	Chief Executive Officer
ESCAP	Economic and Social Commission for Asia and the Pacific (United Nations)
FAO	Food and Agriculture Organization (United Nations)
GDP	Gross Domestic Product
GSMA	Global Association of Mobile Operators
ICT	Information and Communication Technology
ITU	International Telecommunication Union
MDG	Millennium Development Goal
PSI	Population Services International
SDG	Sustainable Development Goal
SMS	Short Message Service
STEM	Science, Technology, Engineering and Mathematics
UN	United Nations
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
W1	WIFI Women Entrepreneurs Track – Module W1: Planning a Business Using ICT
W2	WIFI Women Entrepreneurs Track – Module W2: Managing a Business Using ICT
WIFI	Women and ICT Frontier Initiative

I. INTRODUCTION

This module aims to introduce the key concepts of entrepreneurship, particularly women's entrepreneurship. Specifically, it:

» Highlights the regional and global status of women entrepreneurs
» Explores the linkage between entrepreneurship and women's empowerment
» Identifies and explain some of the major barriers and enablers faced by women entrepreneurs
» Explains the role of ICT in women's entrepreneurship

The module is divided into three sections in which key concepts are explained using numerous real-world examples and case studies. Each section ends with a set of interactive exercises.

Section II begins by defining the terms "entrepreneurship" and "entrepreneurs". This is followed by a brief look at the status of women entrepreneurs in Asia and the Pacific and globally. Section II ends with a discussion of the relationship between women's empowerment, entrepreneurship and overall social development.

Section III examines the major barriers and enablers faced by women entrepreneurs, especially in Asia and the Pacific. This section covers entrepreneurial challenges related to socio-cultural conditions, the policy and regulatory environment, access to finance, and capacity development.

Section IV introduces the role of ICT in women's entrepreneurship, both as a supporting platform and as the primary commodity of entrepreneurial activities. The section explains the main challenges of using ICT for entrepreneurship, especially in the areas of capacity development, access, applications design, gender-specific ICT usage, and online-offline vulnerabilities. The section ends by reviewing some key enabling factors related to the human interface, the enabling policy environment, and emerging opportunities in ICT for entrepreneurship.

II. WOMEN'S EMPOWERMENT AND ENTREPRENEURSHIP

Section II begins by defining the terms "entrepreneurship" and "entrepreneurs". This is followed by a brief look at the status of women entrepreneurs in Asia and the Pacific and globally. Section II ends with a discussion on the relationship between women's empowerment, entrepreneurship and overall social development.

Learning outcome

Understand how entrepreneurship can lead to women's empowerment

2.1. What is entrepreneurship?

Entrepreneurship is a collective notion of capacity and willingness to create and manage a business to make profit. Entrepreneurship is about facing risks, understanding the bigger picture of opportunities as well as challenges, developing something new, or rediscovering some older ideas, and designing new ways of combining resources, with the end goal of accruing financial and, at times, social gains. Evidence shows that entrepreneurship has the ability to positively contribute to individual's and society's development, to empower the marginalized, to usher in stability and prosperity for any country or region.[1]

In order to foster successful entrepreneurship, an effective ecosystem needs to be in place, at individual as well as organizational level, encompassing regulatory, financial and professional infrastructures. An entrepreneurship ecosystem may include several like-minded entities, sharing similar goals, exploring economies of scale through collaborations in business development,

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1   Paula Fernandes, "Entrepreneurship Defined: What It Means to Be an Entrepreneur", *Business News Daily*, 2 March 2016. Available from *http://www.businessnewsdaily.com/7275-entrepreneurship-defined.html#sthash.dYfV19nf.dpuf*; BusinessDictionary.com, "Entrepreneurship". Available from *http://www.businessdictionary.com/definition/entrepreneurship.html#ixzz453QVKxG9*; Russell S. Sobel, "Entrepreneurship", in The Concise Encyclopedia of Economics, Library of Economics and Liberty (2007). Available from *http://www.econlib.org/library/Enc/Entrepreneurship.html*; and Pinchot University, "What is Entrepreneurship". Available from *http://pinchot.edu/what-is-entrepreneurship/*.

financing, legal support, market strategy formulation, information management, human resource management, production, and sales-related supports. Any efficient entrepreneurship ecosystem is usually tailored to the need of the primary business interests, relatively free of administrative and regulatory obstacles, and facilitates an investment-friendly environment.

2.2. Who is an entrepreneur?

An entrepreneur is an agent of change. She is a person who creates or discovers new ideas or opportunities for the purpose of creating value whether economic, social or political, and forming a new organization to do so. The key characteristics of an entrepreneur include: taking initiatives, creating value, identifying and discovering new opportunities, finding ways to make it happen in spite of the resources constraints, and assuming risks.

Some personal qualities successful entrepreneurs include:[2]

- » Curiosity and creativity
- » Self-confidence
- » Leadership
- » Willingness for risk taking
- » Effective communication skill
- » Openness to lifelong learning and feedback
- » Eagerness to collaborate and cooperate
- » Ability to identify opportunities
- » Innovative mindset
- » Determination to overcome obstacles

Such qualities can assist an entrepreneur at any stage of her career to better address the issues she faces while running her business.

According to a Global Entrepreneurship Monitor report, entrepreneurs can be classified based on the different stages of their business life cycle (e.g., concept, start-up, growth,

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2   Russell S. Sobel, "Entrepreneurship", in *The Concise Encyclopedia of Economics,* Library of Economics and Liberty (2007). Available from *http://www.econlib.org/library/Enc/Entrepreneurship.html*.

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later stages) and/or as per the different types (e.g., high growth, innovation, etc.) of their corresponding entrepreneurial activities.

Furthermore, the Global Entrepreneurship Monitor classifies these diverse sets of entrepreneurs (female and male alike) within different groups of countries, sorted together based on the level of economic development achieved.

Based on Global Entrepreneurship Monitor's analyses, countries in the early stages of economic development with considerably big agricultural sectors are grouped as **factor-driven economies**. Countries with developed industrial sectors, higher productivity from economies of scale, and strong financial institutions are termed as **efficiency-driven economies**. And countries with considerable affluent population, thriving service sectors, and innovative industrial sectors are highlighted as **innovation-driven economies**.[3]

2.3. Who are the present day women entrepreneurs?

The contemporary women entrepreneurs, both experienced and aspiring ones, are working all over the world. On one hand, they share some common characteristics. On the other hand, the region, domain and environment specific challenges demand some unique qualities among women entrepreneurs to deal with the corresponding scenarios. More importantly, there are gender-specific problems and opportunities, primarily faced by women entrepreneurs, which need to be identified and addressed.

A recent global study on entrepreneurship found that women are the majority among the upcoming entrepreneurs in the developing world.[4] For example, in Sub-Saharan Africa, the female-to-male entrepreneurship ratio is very high in comparison with North Africa and the Middle East. Among the new entrepreneurs worldwide, Africa and South Asia turned out to be most gender-balanced regions to start their business. In Malaysia, Indonesia, the Philippines and Viet Nam, women are more likely to engage in early-stage entrepreneurial activities than men.

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3   Donna Kelley and others, *Special Report: Women's Entrepreneurship* (Global Entrepreneurship Monitor, 2015). Available from *http://gemconsortium.org/report/49281*.
4   Ibid.

A report of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) on women's entrepreneurship in the Asia-Pacific region highlights that one-third of the small and medium enterprises are run by women entrepreneurs globally. Within South-East Asia, an overwhelming majority of women entrepreneurs are engaged in micro, small and medium enterprises. In the Asia-Pacific region, women are mostly engaged in subsistence entrepreneurship, concentrated in labour-intensive, low-value sectors that have relatively low barriers of entry but are highly competitive. They include industries on food, clothing and basic needs. These types of business engagement with low-growth potential bar women entrepreneurs in this region from transcending and transforming to high-growth areas of entrepreneurship. In many cases, due to low profitability and fear of failure, the women entrepreneurs are also not willing to expand their businesses and push for further growth.[5]

The Global Entrepreneurship Monitor found that women entrepreneurs, especially those who are at the early stage of their careers, are driven to entrepreneurship out of necessity, to survive and support their families, and/or out of desperation, due to lack of professional opportunities in other work sectors.[6]

Globally, it has been found that the highest concentration of early-stage entrepreneurs is within the age group of 25-34. Figure 1 shows this trend for countries from the Asia-Pacific region, for both the industrialized/innovation-driven economies (i.e., Taiwan, Republic of Korea, Japan and Singapore), and the developing/factor- and efficiency-driven economies (i.e., China, India, Indonesia, Malaysia, the Philippines, Thailand and Viet Nam). Social expectations and norms can play important roles in preventing or enabling women to become entrepreneurs. Japan and the Republic of Korea, the two developed economies in Asia, have the lowest early-stage female youth entrepreneurs.

An educated workforce, emboldened with appropriate skills and capacity for innovation, is critical to an economy's competitiveness and productivity. Generally, entrepreneurs across continents have been found to have higher levels of education than the non-entrepreneurs.[7] Existing educational disparities in many ways limit women entrepreneurs from accessing basic as well as specialized education (i.e., financial and ICT literacy), thus limiting their business opportunities.

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5   Ibid; and ESCAP, *Fostering women's entrepreneurship in ASEAN: Transforming prospects, transforming societies* (Bangkok, 2016).

6   Donna Kelley and others, *Special Report: Women's Entrepreneurship* (Global Entrepreneurship Monitor, 2015). Available from *http://gemconsortium.org/report/49281*.

7   Ibid.

Figure 1	The rate of total early-stage entrepreneurship activity for females, by age cohort and region
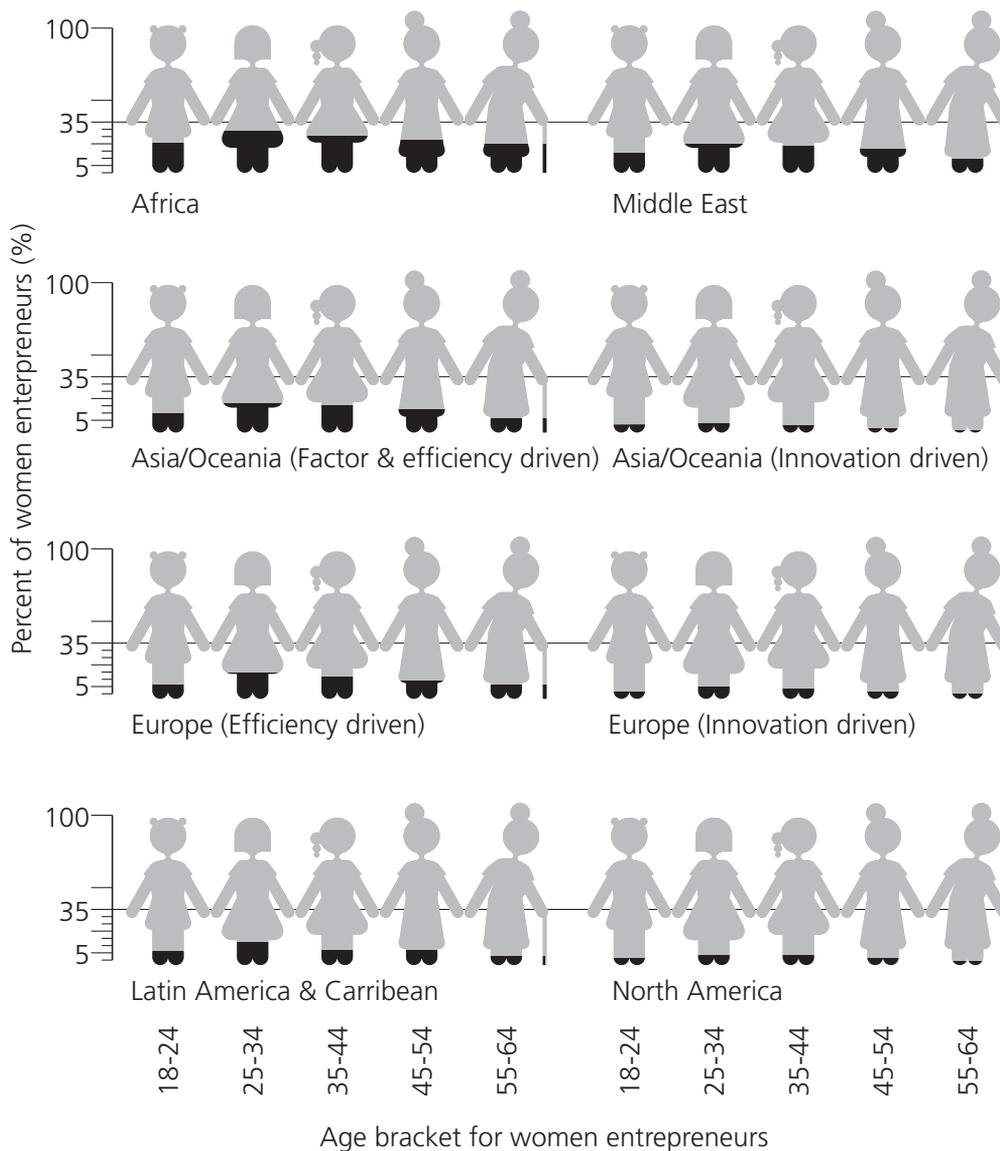
Based from: Donna Kelley and others, Special Report: Women's Entrepreneurship (Global Entrepreneurship Monitor, 2015), Figure 12, p. 30. Available from http://gemconsortium.org/report/49281.

According to a study of Goldman Sachs, "Education and training are likely to result in business growth in sales and employees, as well as stronger self-confidence and leadership skills." Education also helps to ensure gender parity in entrepreneurship. The Global Entrepreneurship Monitor documented that for both female and male entrepreneurs, around one-third of them are either with post-secondary or higher level of education.[8]

Related to professional collaboration, it has been found that the majority of the entrepreneurs are sole owners of their businesses. Studies have mentioned that women entrepreneurs in Asia and Africa prefer single ownership over collective ones. However, co-ownership can become a critical issue, as in many communities, culturally and legally, women are not allowed or able to own any business individually, and hence have to go for partnerships with men.

Something To Do

Among your peers or individually, look into the following issues:
- In your community, what are the major characteristics of entrepreneurs?
- Are there women entrepreneurs?
- Are there any differences between the initiatives and businesses of women and men entrepreneurs?
- Which sectors are women primarily doing business in?
- At which stage are the majority of their businesses (concept, start-up, growth or later stage)?
- In terms of age, education and socio-economic background, can you classify the local women entrepreneurs into multiple groups?

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8   Donna Kelley and others, *Special Report: Women's Entrepreneurship* (Global Entrepreneurship Monitor, 2015). Available from *http://gemconsortium.org/report/49281*.

2.4. How can women entrepreneurs contribute to development and women's empowerment?

Successful women's entrepreneurship and a country's or society's overall development process are positively correlated. In the following subsections, some major dimensions of this *win-win* relationship are elaborated.

2.4.1. Women's economic empowerment and entrepreneurship

Promoting women's economic empowerment is seen as one of the key driving forces behind reducing poverty and fostering economic growth. Researchers found that women are likely to invest 90 cents of every dollar earned in constructive social activities such as their family's education and healthcare, in contrary to 30 to 40 cents for men.[9] Given the global challenge of employment, entrepreneurship is also recognized as a key driver of economic growth and development. It is therefore imperative to empower women, who comprise half the global population, to participate constructively in the economic activities of their countries, and consider entrepreneurship as a viable career option.[10]

Globally, the number of economically-empowered women entrepreneurs is on the rise. Efforts need to be in place to identify and address region-specific challenges faced by women entrepreneurs to guarantee their sustainable growth. Experts recognize any entrepreneurship venture as a multiphase endeavour. In addition to the initial assistance to start up a business, entrepreneurs' continuous access to a support system is essential.

Example: Peru's indigenous population generally lives in remote areas, deprived of economic opportunities. They primarily rely on small-scale traditional handicrafts for their livelihood. But with the help of the United Nations Millennium Development Goals Achievement Fund in 2010, a capacity development programme and support network were established to promote entrepreneurship, helping the local entrepreneurs, the majority of whom were women, to better manufacture and market their handicrafts. This initiative was also supported by the government and resulted in considerable benefits to the local communities.[11]

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9   Jackie VanderBrug, "The Global Rise of Women Entrepreneurs", *Capital Acumen*, Issue 25.
10   Donna Kelley and others, *Special Report: Women's Entrepreneurship* (Global Entrepreneurship Monitor, 2015). Available from *http://gemconsortium.org/report/49281*.
11   United Nations Industrial Development Organization, "Empowering Women: Fostering Entrepreneurship", undated. Available from *https://www.unido.org/fileadmin/user_media_upgrade/What_we_do/Topics/Women_and_Youth/Brochure_low_resolution.pdf*.

2.4.2. Women's entrepreneurship and society

Entrepreneurship can assist women to contribute more to the society they belong. It helps them to be proactive in addressing numerous social challenges, provides them the platform to take advantage of the opportunities for collective growth, and above all, gives them the opportunity to voice their concerns and the ability to solve those challenges. Globally, women, entrepreneurs and consumers alike, are known to invest in their respective communities, support their family, educate their children and piggyback many of the benefits received by them through helping the people in need. Research shows that economic freedom for women in many cases paves the way for other levels of empowerment.

In societies where women are disenfranchised, an opportunity to be a part of a business or a chance to innovate can be a welcome sign for limitless possibilities. Entrepreneurship for women can mean an opportunity to move up the social ladder, discover their own potential, start asserting for their rights, and eventually become a part of the decision-making process within their own families, communities and societies. Case Study 1 highlights these aspects through the life story of a women entrepreneur, Mahanda Metri.

Case Study 1.

Empowerment through entrepreneurship[12]

Mahanda Metri is a real life role model for women. She changed the course of her life through entrepreneurship. In Kapalaguddi, a village in Belgaum district of the state of Karnataka, India, she has been running her own sewing business for several years.

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12 Josceline Anne Mascarenhas, "How 3 women entrepreneurs from rural India are creating opportunities for others", *Your Story*, 7 March 2015. Available from *http://yourstory.com/2015/03/rural-india-women-entrepreneurs/*; and Josceline Anne Mascarenhas, "Devadasis To Entrepreneurs: A Journey No One Will Forget", *Milaap*, 11 July 2014. Available from *http://blog.milaap.org/a-ray-of-hope/*.

Story of exploitation

Mahanda was a tragic victim of an ancient Indian culture, "Devadasi" (meaning "Servant of God"). In this practice, very young girls, primarily from poor families are assigned to serve the temples for their entire lives, and are not allowed to get married and to work elsewhere. Even though it was officially outlawed in the 1980s, this custom continues to be exploited by the rich and powerful people of the society, who sexually abuse those girls from a very early age. The community at large also perceives these Devadasis as sex workers, devoid of any social status, and discriminate them in terms of socio-economic access.

Mahanda was assigned to be a Devadasi by her uncles, who later sold her into the sex trade. She eventually got her freedom from the brothel after she got pregnant. However, the life outside was not easy for her initially as the majority in the society, including her own family, rejected her efforts for re-assimilation.

Motivation to create a new opportunity

To prevent her daughter from becoming a Devadasi like herself, she founded Mahila Abhivrudhi Maththu Samrakshana Samsthe (MASS), a membership organization for Devadasis in Belgaum, Karnataka. Through MASS, she received a crowdfunded loan from Milaap, a microcredit company.

New beginning

With the help of that microloan, she established her own sewing business. Under Milaap's Hope Project, she applied for an enterprise loan and bought three more sewing machines with a plan to employ three more former Devadasis. She runs a small training programme, teaching former Devadasis to sew, charging them each a nominal monthly fee. After more than four years into the business, she has become a successful micro-entrepreneur, and is now a socio-economically empowered individual who has created jobs for others and trained women interested in the sewing business.

In general, women entrepreneurs are found to be socially committed, irrespective of their businesses in developed or developing economies. A recent research found that 53 per cent of women entrepreneurs from Europe have undertaken projects having positive social impacts, addressing social issues, and solving some community-related challenges through their entrepreneurial initiatives. Many women continue to face social exclusion in their communities where they may be denied access to various rights, opportunities and resources. Such denials, in some cases have

inspired women to launch socially responsible enterprises, helping them to solve the problems at hand and also give them a spot in the societal decision-making process.[13]

Thus, women in many places are creating competitive advantage in their businesses by incorporating cause marketing, and connecting socio-political issues with their products or services. A Forbes study showed that: "By linking their brand and marketing to a cause, they can boost customer awareness, drive sales, burnish their reputation, give back to the community and lower marketing costs, all at the same time." According to Global Women's Entrepreneurship Research: "Women are 1.17 times more likely than men to create social ventures rather than only economic ventures, and 1.23 times more likely to pursue environmental ventures than economic-focused ventures."[14]

Example: Jamila Abass, a women entrepreneur from a remote part of Kenya created M-Farm, a tool that helps farmers in rural Kenya receive information about the current crop pricing from all the major markets of the country. This initiative solved a community problem and helped her establish a successful and sustainable business.

According to a report on M-Farm from Ashoka Foundation: "The M-Farm platform brings together small-scale farmers in the same regions, allowing them to market crops jointly in larger regional or international markets. M-Farm also connects farmers to suppliers, allowing them to buy discounted farming product such as seeds and fertilizer. M-Farm has thus connected farmers, wholesale buyers and agricultural input suppliers, changing the scattered landscape of subsistence farming in Kenya. M-Farm has created a geo-map that visually displays real-time data and aids market players to connect with each other."[15]

Jamila's ICT-based entrepreneurial intervention got rid of the middlemen, ensured better profit for the farmers, and empowered them to strategically pursue entrepreneurial opportunities. In 2012, all the farmers using M-Farm reported a 100 per cent increase in their profit on average, making Jamila's platform a valuable social entrepreneurship venture for the community.

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13 ESADE, "53% of female entrepreneurs undertake projects that can have a social impact", 2 March 2015. Available from *http://www.esade.edu/web/eng/about-esade/today/news/viewelement/309946/1/53-of-female-entrepreneurs-undertake-projects-that-can-have-a-social-impact*; and Tamara Pupic, "Women entrepreneurs choose social impact over profit, study reveals", *Arabian Business*, 29 February 2016. Available from *http://www.arabianbusiness.com/women-entrepreneurs-choose-social-impact-over-profit-study-reveals-623197.html*.

14 Geri Stengel, "Women Entrepreneurs Fuel Social Change and Economic Growth", *Forbes*, 3 February 2016. Available from *http://www.forbes.com/sites/geristengel/2016/02/03/women-entrepreneurs-fuel-social-change-and-economic-growth/#1d6d27370e8c*.

15 Ashoka, *Social Innovation Mapping: Social Entrepreneurs Changing Lives Through ICT* (2014). Available from *https://www.ashoka.org/files/ICT-Based-Social-Impact_09-2014-report.pdf*.

2.4.3. Promoting leadership

Entrepreneurship enables women to rise up to the occasion and take the lead in active decision-making. At times, the motivating factors behind women to start their own business are different from their male counterparts.[16] A report by the Organisation for Economic Co-operation and Development (OECD) on women's entrepreneurship states: "Women, more than men, start their ventures for non-pecuniary reasons, such as satisfaction with their work, the possibility of making a difference in their community, or the search for a good balance between work and family life. This last motive is particularly relevant for women, as self-employment offers more flexibility to combine family and work."[17]

But in Asia and the Pacific, the situation is very different. Many women are becoming entrepreneurs in order to survive and to provide bare minimum support for their families.[18] In addition, the obstacles present in traditional work areas, the social expectation of being the primary caregiver of their families, and the inherent urgency to contribute to the greater good are some of the factors working as "necessities" behind women's entrepreneurship. The OECD report mentions that the rate of women becoming entrepreneurs due to such challenging situations is considerably high in emerging economies. There, in order to survive as well as thrive, women in business are coming up with innovative ideas to ensure the socio-economic security of their families and communities.[19]

Women entrepreneurs are leading business ventures on their own as well as collaboratively. The study by the Global Entrepreneurship Monitor found that women entrepreneurs are more likely to have single-person ownership of their businesses than men (68 per cent, compared to 62 per cent for men).

In Africa and the fast developing Asian region, we can see this kind of practice more. On the contrary, in the Middle East and the more developed part of Asia, women entrepreneurs are found to be working more in the teams of three or more core partners for any business ventures.[20] In most of the Asia-Pacific region, which can be classified as

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16 Mario Piacentini, "Women Entrepreneurs in the OECD: Key Evidence and Policy Challenges", OECD Social, Employment and Migration Working Paper No. 147, 23 July 2013. Available from *http://www.oecd-ilibrary.org/social-issues-migration-health/women-entrepreneurs-in-the-oecd_5k43bvtkmb8v-en;jsessionid=6ibahbo85ugeu.x-oecd-live-03*.

17 OECD, *Enhancing Women's Economic Empowerment through Entrepreneurship and Business Leadership in OECD Countries* (2014). Available from *http://www.oecd.org/gender/Enhancing%20Women%20Economic%20Empowerment_Fin_1_Oct_2014.pdf*

18 ESCAP, *Fostering women's entrepreneurship in ASEAN: Transforming prospects, transforming societies* (Bangkok, 2016).

19 Ibid.

20 Donna Kelley and others, Special Report: *Women's Entrepreneurship* (Global Entrepreneurship Monitor, 2015). Available from *http://gemconsortium.org/report/49281*.

factor-driven economy or emerging economies, the prevalence of business co-ownership is significant due to social (and in some cases legal) obligations that prevent women from owning or managing anything individually.

While women's entrepreneurship contributes positively towards achieving the overall social development and their own empowerment, more needs to be done for women entrepreneurs so they can access more opportunities such as higher growth sectors, export, international markets through financing, capacity development, networks, entrepreneurial education, and ICTs. The next section highlights some of the major problems and solutions related to women's entrepreneurship.

Something To Do

Among your peers or individually, look into the following issues:
- According to the latest Global Entrepreneurship Monitor report for women, how is your country doing? You can access the latest report from *http://www.gemconsortium.org/*.
- What are the key barriers and enablers for women entrepreneurs in your country?

Test Yourself

- What is empowerment?
- What is entrepreneurship?
- How can entrepreneurship help to empower women?

Key Messages

- Entrepreneurship is a collective notion of capacity and willingness to create and manage a business to make profit. It is about facing risks, understanding opportunities as well as challenges, developing something new, and designing ways of combining recourses, with the end goal of accruing financial and at times social gains.
- Among the upcoming entrepreneurs in the developing world, women are the majority. One-third of the small and medium enterprises are run by women entrepreneurs globally.
- Women's entrepreneurship results in economic solvency for the women entrepreneurs and their family, efficiently maximizing the demographic potential of any country's population.
- Entrepreneurship can assist women to be more proactive in addressing social challenges, can help them to grow collectively, and enable them to raise their voice against any discrimination.

III. BARRIERS AND ENABLERS FOR WOMEN ENTREPRENEURS

This section highlights some of the main barriers and enablers faced by women entrepreneurs, especially in the Asia-Pacific region. It covers entrepreneurial challenges related to socio-cultural conditions, the policy and regulatory environment, access to finance, and capacity development.

Learning outcome

Understand the barriers and enabling environment for women entrepreneurs

3.1 Socio-cultural elements

3.1.1. Barriers

Adverse socio-cultural elements

Traditionally, women are perceived to be the primary homemakers and their roles confined to the home. Women are expected to be responsible for household maintenance and childcare. These perceptions that society has about women make it difficult for her to participate in entrepreneurship.

The government policies and facilities available for women to start businesses at the micro level are often not communicated properly. Women entrepreneurs in some places face social and legal obstacles when it comes to access to:

- Networks (e.g., professional, technical and social)
- Information (e.g., financial strategy, latest market news)
- Finance (e.g., loans or investments, tax exemptions)
- Training
- Mobility

Example: In Afghanistan, women entrepreneurs have to struggle hard in a male-dominated society. Even with official government support in terms of policy formulation and capacity development initiatives, the lack of security results in low or decreasing investments, as well as low profitability of their businesses.[21]

3.1.2. Enablers

Country-and region-specific challenges

Each region has its own advantages as well as challenges for women's entrepreneurship. Depending on the socio-economic structure and the problems faced in that country, the types of entrepreneurship and the related need for government assistance would vary.

Example: In Bangladesh, the government and several non-governmental organizations are encouraging and supporting village women to work as information entrepreneurs or Infoladies. Their primary service is to provide information in the marginalized communities on healthcare, education, agriculture, women rights, etc., using ICT. Today, Infoladies are widely accepted in the communities they serve, helping them to expand and diversify their services, resulting in better income for them. The scarcity of good information and relatively poor ICT infrastructure, plus the social acceptance of Infoladies made sure this programme is a success.[22]

> ⓘ **Something To Do**
>
> Among your peers or individually, look into the following issues:
> - What are the major socio-cultural barriers for women entrepreneurs in your community? Are these different from the ones we just discussed?
> - What are the enabling factors? Are these different?

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21 Petra Dunne, "Hope for Afghanistan's Women Entrepreneurs?" *The Asia Foundation*, 7 August 2013. Available from *http://asiafoundation.org/in-asia/2013/08/07/hope-for-afghanistans-women-entrepreneurs/*.

22 Infolady. Available from *http://infolady.com.bd/*.

3.2 Policy and regulatory environment

3.2.1. Barriers

Absence of enabling policy formulation and regulatory environment

In general, gender-specific policies and initiatives taken by governments are found to be disconnected and asymmetric in nature, with the absence of coordination between different government entities. And although there are some entrepreneurship policies in place, specifically in relation to micro, small and medium enterprises, there is no overt mention of gender and no gender-responsive actions. The implementation of formulated policies remained inconsistent, causing knowledge gaps and bureaucratic complexities for women-led initiatives. Registering for businesses, ownership and taxation are some of the areas where there is a lack of consistency and sufficient government support for women entrepreneurs, especially across the emerging and factor-driven economies. In many cases, the absence of clear ownership by any government entities to promote and support women's entrepreneurship can cause stagnation in time-sensitive entrepreneurial activities.

In the Asia-Pacific region, while the policymakers are publicly very positive about women entrepreneurs' role at national level, the gender-responsive policies and programmes are mostly limited and reactive.

Examples:

» According to women entrepreneurs in China and Malaysia, the national policies and strategies of the corresponding governments reflect broader regional trends towards prioritizing small and medium enterprise growth as a driving force for economic development. However, even after the recognition of the contribution of women entrepreneurs, gender-responsive policies and programmes were found to be limited and ad hoc. With exception of a few microcredit and training initiatives, no significant enterprise promotion policies to address the specialized interests of women entrepreneurs were formulated.[23]

» In Tanzania, the Land Act and Village Land Act of 1999 clearly gave women equal rights as men to acquire, hold, use and deal with land. But in reality, the traditional social norms are enforced instead of the official acts, thus discriminating women from their inheritance. For instance, according to the local practices, a widow cannot inherit her deceased partner's property, even though the country's law gave her the right to do so.[24]

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23 ESCAP, Enabling Entrepreneurship for Women's Economic Empowerment in Asia and the Pacific, undated. Available from *http://www.unescap.org/resources/enabling-entrepreneurship-womens-economic-empowerment-asia-and-pacific*.

24 Brief on Gender Issues in Tanzania: Stocktaking and Emerging Priorities, June 2011.

3.2.2. Enablers

Prioritization and formulation of policy goals

In order to formulate effective policy goals for women's entrepreneurship, policymakers need to analyze the country's national strategies on entrepreneurship, the status of women, the ICT infrastructure development, and the market liberalization process. Women's entrepreneurship needs to be incorporated in the country's national development policy and planning process.

Example: In Malaysia's Vision 2020, political leaders envisioned women entrepreneurs as an integral part of the country's sustainable and inclusive economic growth. For achieving this long-term goal, the 10th Malaysia Plan 2011-2015 have been implemented, which prioritized small and medium enterprise development for ensuring the economic empowerment of women.[25]

Coherence among official strategies

The effectiveness of women's entrepreneurship development strategies depends on the level of integration and alignment of such proposed policies and action items, especially with strategic development priorities and with relevant development sectors. It is critical to ensure that institutional and cooperation mechanisms are in place to implement the proposed policies and actions.

Example: In Mauritius, the Ministry of Gender Equality, Child Development and Family Welfare have been closely involved with the country's entrepreneurship initiatives. This ministry's official mission includes promoting the economic empowerment for women, for which it established a National Women Entrepreneur Council. This step has helped significantly in improving the technical and organizational capacities of local women entrepreneurs.[26]

Ongoing monitoring and evaluation

Monitoring and evaluation of any entrepreneurship programme is critical to assess if the objectives set have been achieved. Policymakers and the implementers of such programmes need to be held accountable to guarantee their quality. Specifically, in the

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25 United Nations Conference on Trade and Development, *Entrepreneurship Policy Framework and Implementation Guidance* (New York and Geneva, 2012), p. 9. Available from *http://unctad.org/en/PublicationsLibrary/diaeed2012d1_en.pdf*.
26 Ibid., p. 10.

case of monitoring and evaluating the performance of an entrepreneurship programme, some common indicators should be included such as the total number of start-up ventures and their survival rates. Economic indicators, like employment generation and the measurement of total value addition, and societal factors related to poverty reduction and women's empowerment should also be included. More broadly, there is a tremendous need for sex-disaggregated data to better capture and understand the status and needs of women entrepreneurs in the Asia-Pacific region.

Example: The Government of Malaysia uses the New Economic Model to ensure constant monitoring and evaluation of entrepreneurship projects. This model actively works towards streamlining entrepreneurship initiatives, supporting transparency in business conducts, and helping entrepreneurs reduce their dependency on external support.[27]

Something To Do

Among your peers or individually, look into the following issues:
- Are there specific policies in place to enable women's entrepreneurship in your country? Region? Community?
- Are there any policies that offer preferential treatment towards male entrepreneurs over their female counterparts? Or the other way round?
- Are there any difference between the official provisions and actual practices?

3.3. Finance and credit

Finance is one of the most important and talked about issues in women's entrepreneurship and overall empowerment, globally, irrespective of the countries socio-economic status.

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27 United Nations Conference on Trade and Development, *Entrepreneurship Policy Framework and Implementation Guidance* (New York and Geneva, 2012), p. 12. Available from *http://unctad.org/en/PublicationsLibrary/diaeed2012d1_en.pdf*.

3.3.1. Barriers

Lack of access to finance and credit

The lack of access to finance and credit is the most prevailing challenge faced by women entrepreneurs across the globe, both in developing and the developed regions, in varying degrees. There are different levels of challenges within this category that are explained below.

a. Legal barriers

Research found legal barriers that prohibit women from having equal access to finance and credit as men. In many cases, "co-signature" requirements from male family members are imposed on women interested to do business, which is related to the social expectation of sharing the ownership of women's businesses with male partners to ensure better viability. There are also financial institutions that demand higher collateral value from women seeking loans for business or any other activities.

Example: Indonesia formally abolished the restriction on individual property ownership, credit access and related issues for women. However, this national level reform is yet to be implemented consistently in all the provinces of Indonesia. Some women still need to present a male family member as a co-signee for the credit application process.

In India, the constitution guarantees the equal rights of women and men on family assets. But women are rarely chosen as successors of family business and valuable assets, as reported by women entrepreneurs in an ESCAP study. At times, even loans for any business need to be taken from banks in the name of the husbands, fathers or brothers.[28]

b. Marginalized financial activities and poor investment opportunities

Women are generally poorly represented in entrepreneurial activities or financial matters, tacitly supporting the traditional beliefs that women have little or nothing to do with any entrepreneurial activities or financial matters.

Many policies and start-up fund allocations are not gender-sensitive, leaving women entrepreneurs to compete with their male peers with superior financial association.

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28 ESCAP, Enabling Entrepreneurship for Women's Economic Empowerment in Asia and the Pacific, undated. Available from *http://www.unescap.org/resources/enabling-entrepreneurship-womens-economic-empowerment-asia-and-pacific*.

Moreover, women entrepreneurs generally face tougher times than their male counterparts in accessing investment funds.

Examples:

» Access to financial services and credit for women is quite challenging in Pakistan. According to a study by the Global Entrepreneurship and Development Institute, only 3 per cent of the female population in Pakistan has formal bank accounts, only 26 per cent of the borrowers of microfinance loans are women, and only 2 per cent of the small and medium enterprise loan recipients are women.[29]

» In Nigeria, women entrepreneurs report that the financial resources they have access to are often used to meet family-related needs (e.g., in health and education), rather than for investment in their businesses.[30] In other cases, the trend is to invest either within their "tribe" or partner with a male-led venture.[31]

3.3.2. Enablers

Entrepreneurship-friendly public policies and regulatory framework

In order to facilitate entrepreneurship, governments can work towards:[32]

» Establishing a pro-business legal and policy framework for businesses
» Reducing administrative latencies to avoid regulatory restrictions
» Ensuring equal access to finance for both women and men entrepreneurs
» Offering support network of capacity development on financial literacy, training, monitoring, and mentoring services for both women and men

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29 Global Entrepreneurship and Development Institute, "The Gender Global Entrepreneurship and Development Index (GEDI)", 2014. Available from *http://i.dell.com/sites/doccontent/corporate/secure/en/Documents/Gender_GEDI_Executive_Report.pdf*.
30 Bolanle Deborah Motilewa, Olorunfemi Adebisi Onakoya and Adunola Oluremi Oke, "ICT and Gender Specific Challenges Faced by Female Entrepreneurs in Nigeria", *International Journal of Business and Social Science*, vol. 6, no. 3 (March 2015).
31 Paula Fernandes, 6 Challenges Women Entrepreneurs Face (and How to Overcome Them)", *Business News Daily,* 10 May 2016. Available from *http://www.businessnewsdaily.com/5268-women-entrepreneur-challenges.html*.
32 OECD, *Enhancing Women's Economic Empowerment through Entrepreneurship and Business Leadership in OECD Countries* (2014). Available from *http://www.oecd.org/gender/Enhancing%20Women%20Economic%20Empowerment_Fin_1_Oct_2014.pdf*.

Gender-friendly public policies and regulatory framework

ESCAP in its multi-country research on women's entrepreneurship in the Asia-Pacific region recommends the following steps to be taken to ensure a gender-friendly, equitable, pro-business policy and regulatory framework:[33]

- » Establish action plans, with targets, for gender-responsive budgeting that ensures equal access to government-sponsored finance programmes.
- » Assess and adjust prevalence, funding levels and accessibility of credit support schemes that target women entrepreneurs in accordance with gender-responsive budget planning.
- » Ensure available funding for reinvestment at all stages of business development, including funds for working capital, modernization and technology upgrades, business acquisition and expansion.
- » Establish "one stop" loan centres that provide integrated information and support access for all available loans.
- » Engage with financial institutions to develop standards for fair and equal treatment of women credit applicants.
- » Develop mechanisms for systematic promotion of available financial products and support opportunities, with consistent and balanced geographic coverage, mobilizing various forms of media through multiple channels accessed by women such as post offices, radio, online portals and social media.
- » Develop tax incentives for financial institutions that reward increased funding for women's entrepreneurship.
- » Repeal co-signature requirements and other regulations that require women to assume debt collectively rather than independently.
- » Facilitate collective guarantee schemes, promote zero-collateral lending, and expand categories for recognized collateral to include assets such as jewellery and other personal valuables.

Case Study 2 on Luna Shamsuddoha, the chairman of Dohatec, an ICT company from Bangladesh elaborates on the regulatory and structural challenges women ICT entrepreneurs face in a developing economy, and the ways to overcome those barriers.

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33 ESCAP, Enabling Entrepreneurship for Women's Economic Empowerment in Asia and the Pacific, undated. Available from *http://www.unescap.org/resources/enabling-entrepreneurship-womens-economic-empowerment-asia-and-pacific*.

Something To Do

Among your peers or individually, look into the following issues:
- Do the women entrepreneurs in your community have to face any legal barriers while accessing any fund/loan?
- Do they have any special provisions for getting loans? Or the entire process is gender neutral/insensitive?
- Are there any specific communication/outreach drives in place to tap into the potential of women entrepreneurs? To let them know about the available facilities?

Case Study 2.

Breaking the barriers, leading as a pioneer

Luna Shamsuddoha is a pioneer ICT entrepreneur in Bangladesh, leading one of the prominent ICT companies of the country, Dohatec. She established this company in 1992 amid very poor connectivity and limited support from the government.

Motivation behind Dohatec

Dohatec provides ICT services in governance, education, healthcare, retail management, etc. in both local and international markets. Her company has developed web applications, database management solutions, electronic publishing applications and many more for commercial clients in Bangladesh, Canada, Switzerland and USA. Luna, at a very early stage of the ICT industry in the region, saw the opportunity to offer ICT solutions to the global marketplace. She devised a suitable business model and started developing her services based on the niche her company.

Challenges

The absence of trained workforce has been identified by Luna as her major challenge during the early days of her company. Even if she found good software engineers, their poor English skills became a big issue. In addition, there were not enough human resources for ICT-related marketing, finance and management in Bangladesh during that time.

Poor policymaking and the lack of a regulatory framework hindered her company's growth significantly. Intellectual property law was poorly established in Bangladesh when Luna's company entered into software development. The Customs Office had no clear guidelines for processing licensed software.

Luna had to fight against some traditional beliefs as well. According to her:

"The greatest challenge for women entrepreneurs in Bangladesh is to overcome the barrier of thinking of us as a weaker participant in the economy. It is a competitive market and everyone must try to survive and compete wherever there are opportunities.

There is a prevalence of thinking that certain industries or enterprises are meant for women, such as home-based crafts and agro-based industries, which in fact restrains growth. These barriers prevent women from coming out of the traditional home-based micro-enterprises and joining the mainstream business."

She continues: *"The second challenge is to get the male-dominated society to accept and encourage the growth of women entrepreneurs in Bangladesh. There has to be meaningful, large and innovative ways of accessing finance and support for women entrepreneurs...Non-financial support like training, business development and access to international networks and markets are also vital."*

Strategic partnerships to overcome the challenges

In order to solve the problems her company was facing, Luna reached out to the global ICT companies, and successfully forged strategic alliances with some of them. At present, Dohatec is a Microsoft Gold Partner, IBM Partner and Intel Partner. She stresses the value of networking to overcome many of the professional challenges. She mentioned: *"For over twenty years I maintained my presence in the international marketplace and built my network as I believed the market was global and that is where we will get our rewards from…When I first started my business there was no domestic ICT market. Everything I did was overseas. I found participation in fairs very useful. It allowed me to show what I had and it also exposed my engineers to the latest technology and what others were doing in the world."*

At present, Luna is working closely with the Government of Bangladesh, advising them on policy formulation and strategic implementations to ensure a better connected and business-friendly environment. She has won numerous international awards in recognition for her work. She established Bangladesh Women in Technology, an organization that supports and promotes women in the technology industry, providing them with opportunities to develop their skills and network with other women in the technology industry.

For the aspiring women entrepreneurs, Luna has the following message: *"Always engage with your community. You will find your co-workers, risk takers, leaders and you will together be able to address changes successfully. Don't ever think there is a glass ceiling—they have all been shattered or will be. Be inclusive and be determined."*

Website: *http://www.dohatec.com*

3.4. Capacity development

3.4.1. Barriers

Ineffective capacity development initiatives

Women entrepreneurs are found to have less access to higher education, training and professional experiences, especially in developing and emerging economies. In many cases, the capacity development programmes provided by the government or private organizations are too generic and ignore the gender specific needs in the training process.

Example: In Indonesia, women entrepreneurs highlighted that different types of capacity building initiatives are needed for women in business, as they are at different levels of professional competence and have different business specific needs. In this country, there is a high demand for training in basic bookkeeping among early stage business women, while training in more complex business accounting practices are desired by the more established women entrepreneurs[34].

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34 ESCAP, Enabling Entrepreneurship for Women's Economic Empowerment in Asia and the Pacific, undated. Available from *http://www.unescap.org/resources/enabling-entrepreneurship-womens-economic-empowerment-asia-and-pacific*.

3.4.2. Enablers

Customized capacity development

As part of providing an enabling environment for women entrepreneurs to flourish, a strategy and platform for capacity development is critical. This infrastructure should focus on developing women's entrepreneurial skills and competence at an early stage in their lives (e.g., in schools and vocational institutions).

At the same time, a consistent effort to counter institutionalized gender stereotypes should be in place, specifically in the capacity development efforts toward education in science, technology, engineering and mathematics disciplines and in business education.

It is important that both public and private facilitators and investors recognize and address the specific needs of women entrepreneurs. Establishment of customized information services, capacity development programmes and networking facilities for women entrepreneurs should be prioritized.

Example: In Nigeria, the Enterprise Development Centre manages financing programmes for women-led small and medium enterprises. This programme is supported by local banks and the International Finance Corporation (IFC). Through this programme, women entrepreneurs in Nigeria gets IFC-supported credit line and tailored capacity development programme from local financial institutions. To date, more than 700 women entrepreneurs have been a part of this project[35].

Equitable curriculum with gender and entrepreneurship

Access to education can help women to excel in their professional lives, and certainly as entrepreneurs. However, scarcity of resources, poor planning, and disconnection between academia and industry are some of the key challenges behind any poor education system, especially in developing countries. To ensure that the overall education mechanism is equitable, gender-friendly, and oriented towards entrepreneurship, the following measures can be taken:

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35   United Nations Conference on Trade and Development, *Entrepreneurship Policy Framework and Implementation Guidance* (New York and Geneva, 2012), p. 41. Available from *http://unctad.org/en/PublicationsLibrary/diaeed2012d1_en.pdf.http:// unctad.org/en/PublicationsLibrary/diaeed2012d1_en.pdf.*

» In a country's education policy, priorities should be given to ensure better access to quality education for the most vulnerable and marginalized population, including women. Especially for women, the concerned government and related stakeholders need to ensure a gender-responsive learning environment.[36]

» Entrepreneurship needs to be a part of the regular curriculum, with opportunities for hands-on training for the learners. Industry-academia-community partnership is needed to make such effort successful.

Example: United Nations Industrial Development Organization (UNIDO) designed an Entrepreneurship Curriculum Programme that focuses on both girls and boys of secondary schools, mainly in developing countries. In 2001 in Uganda, this programme was launched, using a balanced mixture of classroom teaching, industry participation and practical training. After its success in Uganda, the programme was expanded to Timor-Leste, Angola, Mozambique, Rwanda and Tanzania to a total of 1,397 schools, covering 416,000 students between 2006 and 2009.[37]

Something To Do

Among your peers or individually, look into the following issues:
- Is entrepreneurship included in your country's general education curriculum, at any stage of education?
- Are there any organizations, other than the government, offering any capacity development programme to boost women's entrepreneurship?

Test Yourself

- What are the barriers and enablers that women entrepreneurs are facing?
- How can policy formulation and regulatory environment help women entrepreneurs?
- What are the challenges that women entrepreneurs face when accessing finance and credits for their ventures?

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36 International Labour Organization, *The Enabling Environment For Women In Growth Enterprises In Mozambique: Assessment Report* (2011). Available from *http://www.ilo.org/wcmsp5/groups/public/@ed_emp/@emp_ent/@ifp_seed/documents/publication/wcms_184769.pdf*.

37 United Nations Industrial Development Organization, "Empowering Women: Fostering Entrepreneurship", undated. Available from *https://www.unido.org/fileadmin/user_media_upgrade/What_we_do/Topics/Women_and_Youth/Brochure_low_resolution.pdf*.

Key Messages

- For any women entrepreneur, the society and culture she belongs to, the regulatory regime she falls under, the level of access she has to finance and credit—all these are critical for ensuring the success of her business venture.
- There need to be coherence between policymaking and implementation. Social practices, financial institutions and capacity development initiatives need to be in sync with the legal system. Absence of such synergy can result in discrimination against women entrepreneurs.

IV. ICT FOR WOMEN'S ENTREPRENEURSHIP

ICT offers essential tools for business operation and competitiveness. Some of the benefits of using ICTs for business include saving time, overcoming distance, enabling access to new information and markets, connectivity with people remotely and reducing transaction costs. ICT can help women entrepreneurs overcome some of the challenges, including time constraints (due to women's multiple roles and responsibilities), social stigma, low physical mobility, and limited access to finance, education, skills training, information, and existing as well as potential markets.

Learning outcome

Appreciate the role of ICT in supporting women's entrepreneurship

Something To Do

Among your peers or individually, look into the following issues:
- Document your list of expectations from ICT in entrepreneurship.
- What are the specific supports that ICT can provide for women entrepreneurs?
- Does your government/regulators collect sex-disaggregated data on ICT usage?

4.1. ICT as a supporting platform for entrepreneurship

Entrepreneurs in general, and women entrepreneurs specifically, can benefit significantly by using ICT as a supporting tool or platform for their businesses, primarily in the areas related to communications, business development, access to finance, health and education. Moreover, women can expand their businesses globally through online platforms.

> ### Something To Do
>
> We are seeing an increasing number of women entrepreneurs adopting ICTs, particularly mobile phones, computer programs and the Internet to grow their business and make it more efficient. For example in the Philippines, owners of sari-sari stores (or neighbourhood convenience stores) are starting to use ICTs to improve their businesses. Watch a video of a female sari-sari store owner sharing her experience of using ICTs at *https://youtube.com/ watch?v=LVBsX9kaj6U*. Reflect upon what ICTs can do for your business.

4.1.1. ICT for access to finance

Mobile banking

Both at micro and macro levels, ICT has displayed its effectiveness as a supporting tool for ensuring better access to finance in entrepreneurship. Women entrepreneurs face generic as well as gender-related challenges while doing business. For them (specifically the ones from the developing regions), access to finance has always been a major challenge. Addressing this issue, ICT has opened up some paradigm shifting opportunities. With the explosive growth in access to mobile phones, one of the transformative mobile-based services being offered is mobile banking that includes money deposit and withdrawal, remittance delivery, bill payment and microcredit provision. It has made access to loans, investments, daily sales revenues and many of the important financial transactions quite easy for women entrepreneurs.

Example: The most widely cited example of mobile banking is probably M-Pesa that started in Kenya in 2007. In 2013, 43 per cent of Kenya's GDP flowed through M-Pesa with over 237 million person-to-person transactions.[38] M-Pesa facilitated the creation of thousands of small businesses by enabling users to transfer money to each other and make payments directly to suppliers using their mobile phones. With the success of M-Pesa, many other countries are also providing mobile banking services, including Smart Money in the Philippines, which has the second largest subscriber base globally (8.5 million, after M-Pesa). Many of its users are female migrant workers from the Philippines.

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38 Daniel Runde, "M-Pesa and the Rise of the Global Mobile Money Market", *Forbes*, 12 August 2015. Available from *http:// www.forbes.com/sites/danielrunde/2015/08/12/m-pesa-and-the-rise-of-the-global-mobile-money-market/*.

They use Smart Money to transfer remittance home.[39] Another mobile banking success story is QuickCash, founded and led by Patricia Zoundi Yao, a Côte d'Ivoire-based women entrepreneur (see Case Study 3).

Case Study 3.

Quick access to finance using ICT[40]

Patricia Zoundi Yao is from Côte d'Ivoire and is the founder of QuickCash, a money transfer company established in 2010 to make money transfers in rural areas of Africa easier.

Motivation behind QuickCash

Zoundi Yao took her first steps in the world of business at her mother's side. During her primary school years, she spent her holidays accompanying her mother from village to village in Côte d'Ivoire selling goods and learning the fundamentals of commerce. She sold fruit juices (ginger and tamarind), plastic buckets, children's clothes, school supplies and phone cards. When her mother died, Zoundi Yao decided to take over her business activities. Three years later her uncle asked her to help him set up a money transfer business for a well-known multinational, together with a local bank. Later she went on to set up her own company providing money transfer services.

The role of ICT

She noticed that existing money transfer platforms would not work in rural communities because of limitations such as a lack of electricity and Internet access. To find a solution, Zoundi Yao decided to establish the QuickCash money transfer company in 2010 to make transfers in rural areas easier.

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39 ESCAP, *Fostering women's entrepreneurship in ASEAN: Transforming prospects, transforming societies* (Bangkok, 2016).

40 QuickCash. Available from *http://quickcashci.com/v2/index.php/en/*; International Labour Organization, "Women entrepreneurs: From market seller to managing director in Côte d'Ivoire", 16 March 2015. Available from *http://www.ilo.org/global/about-the-ilo/newsroom/features/WCMS_346457/lang--en/index.htm*; and La Rédaction, "Business competition: Ivorian Zoundi Patricia rewarded for her QUICKCASH project", *Africa Top Success*, 29 April 2014. Available from *http://www.africatopsuccess.com/en/2014/04/29/business-competition-ivorian-zoundi-patricia-rewarded-for-her-quickcash-project/*.

Challenges

Patricia did not have a penny to her name and she had to get a loan to pay the notary fees. It was tough to begin with, according to her own account: *"We couldn't even rent office space so we worked in a shed at home. As you can imagine, I obviously was not earning a wage."*

She further mentioned: *"I remember that to set up the company I had to get a loan to pay the notary fees. I started off with a second-hand computer that I bought for 60,000 CFA francs (about USD 100) and a mobile phone that costs 10,000 CFA francs (about USD 17)."*

The new company also had to cope with major competitors.

Localizing the ICT solution

Aware of her company's functional limitations, Zoundi Yao and her team divided up their customer base, targeting a specific group that they knew well and was often neglected—namely, the rural communities.

Taking a course enabled her to develop good practices and, in particular, to have a more closely knit team supporting her. She mentioned: *"Without the necessary tools, you cannot succeed through effort alone. That shows the importance of education."*

At present, her company is flourishing and there are plans to expand across Africa.

In 2014, the General Confederation of Enterprises of Côte d'Ivoire awarded Zoundi Yao 10 million CFA francs (about USD 17,000) for her money transfer business. Subsequently, with various media coverage, she also received funds from other companies and has been recognized by the International Labour Organization as a successful case of women's entrepreneurship.

Crowdfunding

Crowdfunding is another breakthrough for women entrepreneurs, irrespective of their socio-economic backgrounds and geographical locations. In the present age of information and connectivity, crowdfunding is more accessible and popular. Through various online crowdfunding platforms, entrepreneurs can communicate their entrepreneurial

ideas to the global online community and seek their financial contributions to turn the ideas into realities. Crowdfunding has the potential to increase entrepreneurship by expanding the pool of investors from whom funds can be raised beyond the traditional circle of owners, relatives and venture capitalists.

Even though women are generally facing harsher conditions in securing capital, crowdfunding has proved to be more successful for them. In some leading international crowdfunding sites, women entrepreneurs are more successful than their male counterparts in reaching their fundraising goals.[41] For some other sites, the success rate is at least similar between female and male fundraisers. According to the Berkeley-Haas School of Business and Kellogg School of Management, women can present their case more aptly than men, hence become relatively more successful in raising the money they originally have aimed for.[42]

Example: In Japan, crowdfunding has become a huge phenomenon among women. Between 2014 and 2015, the total number of women trying to raise necessary money increased nearly 50 per cent. According to ReadyFor site, the ideas posted by women include cafés, community schools, medical devices and alternative energy solutions.[43]

4.1.2. ICT for business communication

Among the numerous ICT tools and ICT-based solutions, mobile phones have been found to be the most popular communication tool among women users, especially the entrepreneurs. Globally, there are more women using mobile phones than fixed Internet. ICTs helps women entrepreneurs make their services more interactive and their business strategies more agile and responsive. Mobile telephony and Internet connectivity helps women entrepreneurs to better develop their social capital, professional capability and skills through the Internet, social media, business hotlines and other collective platforms that offer information sharing, mentoring and networking opportunity. However, the scarcity of sex-disaggregated data on ICT usage makes it harder for policymakers, investors and ICT service and application developers to better understand the way women access ICTs, and how effectively they are using ICTs for changing their life positively.

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41 Chris Tyrrell, "Crowdfunding is Changing the Female Entrepreneurial Landscape", *Crowdfund Insider, 15 July 2015*. Available from *http://www.crowdfundinsider.com/2015/07/71191-crowdfunding-is-changing-the-female-entrepreneurial-landscape/*.

42 Geri Stengel, "Ensuring Equity Crowdfunding Lives Up to Its Promise for Women Entrepreneurs", *Turnstone, 6 May 2015*. Available from *http://myturnstone.com/blog/ensuring-equity-crowdfunding-lives-promise-women-entrepreneurs/*.

43 Leo Lewis, Female entrepreneurs flock to crowdfunding site in Japan, *Financial Times, 8 January 2016*. Available from *http://www.ft.com/cms/s/0/626d26dc-b531-11e5-8358-9a82b43f6b2f.html#ixzz473PdvzyE*.

4.1.3. ICT for political participation

Through national e-government programmes, governments in many countries are connecting with citizens using ICTs, particularly the Internet and mobile phones. In some countries, governments have established online platforms that link women entrepreneurs with government officials, and/or allowed women entrepreneurs to connect with each other. This has enabled women entrepreneurs' access to policy forums and opportunities to participate in government initiatives. However, in the Asia-Pacific region, women entrepreneurs are not participating very actively in these online platforms.

4.2. ICT-based enterprises

ICT-based enterprises have been the front-runners in creating new business models and innovations in entrepreneurship. According to a latest report on women's entrepreneurship and ICT commissioned by the World Bank, the ICT-based enterprises are categorized into three areas:[44]

» Enterprises involving the production of hardware, software and telecommunications products
» ICT-based enterprises that use ICTs to provide services such as data entry, business services, software applications and e-learning
» ICT-related support services such as computer training and consulting

Example: The Grameen Bank Village Phone Project is one of the most notable examples of ICT-based enterprise managed by women. Under the Village Phone Project, rural women are provided with a loan to buy mobile phones for use in revenue generating ventures. This "Village Phone Lady" model has been successfully replicated in Indonesia, Rwanda and Uganda. In addition to providing basic connectivity in the remote areas of Bangladesh, the project supports the provision of different information services related to agriculture and health.[45]

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44 World Bank, Female Entrepreneurship: Program Guidelines and Case Studies. Available from *http://siteresources.worldbank. org/EXTGENDER/Resources/FemaleEntrepreneurshipResourcePoint041113.pdf*.
45 Grameen Bank, "Village Phones", 23 February 2012. Available from *http://www.grameen-info.org/village-phones-2/*.

> ⓘ **Something To Do**
>
> Among your peers or individually, look into the following issues:
> - Are there any women led/managed ICT-based enterprises in your community/country?
> - If yes, in which sectors?
> - Did these enterprises bring positive change in your community's women?

4.3. Barriers in ICT for women's entrepreneurship

4.3.1. Lack of education

ICT solutions in general work as empowering tools for women entrepreneurs, irrespective of the users' educational competencies. However, in the cases where more complex ICT applications are required (e.g., customized mobile applications development and online inventory management), a minimum level of education among users needs to be ensured. Particularly for women who are illiterate and have little or no education, this requirement can be daunting. In addition, the lack of education, especially in science, technology, engineering and mathematics, continues to be one of the major challenges that hinder women from working in ICT businesses. For these reasons, while rolling out ideas and investments for women's entrepreneurship using ICT, one needs to target at skills and capacities that will help women to fully leverage the potential of ICTs.[46]

4.3.2. Challenges with access

Education alone will not be able to ensure proper usage of ICT by women entrepreneurs. Both the public and the private sector stakeholders need to work together to improve the ICT infrastructure and make Internet connectivity, particularly broadband connectivity available, accessible and affordable to all. Despite the growing availability of cheaper mobile phones and smartphones, without ubiquitous network access or extensive Wi-Fi coverage, the leverage that can be made of the Internet, such as the use of online banking systems, will be limited.

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46 Tina James (ed.), Ronel Smith, Joan Roodt, Natasha Primo and Nina Evans, Women in the Information and Communication Technology Sector in South Africa, July 2006.

4.3.3. Disconnected applications and the lack of relevant content

Another major barrier for women entrepreneurs is the lack of relevant information services, applications and content available online that are in their local languages. If the ICT developers come up with business solutions which are not women-friendly, not culturally acceptable, accessible, and safe to use, then women entrepreneurs are not going to adopt those solutions. For example, for women who are illiterate, solutions must be voice-based.

Example: In Gujarat, India, a mobile app has been developed for 1,800 women entrepreneurs belonging to a women-led cooperative that buys produce from local farmers, processes it and sells it on. This mobile app has been developed following research to understand the information needs of these women entrepreneurs, which showed that a majority of these women owned mobile phones. The mobile app allows the women entrepreneurs to place orders quickly and easily via SMS, while previously these women had to spend long hours travelling to and from depots to place orders, only to repeat the journey to collect them on another day. The mobile app also generates real-time reports on the number of orders taken, sales made and outstanding payments.[47]

4.3.4. Different patterns of ICT usage

Women generally have less access to resources and rights in comparison with their male counterparts. This practice, unfortunately, transfers to ICT usage as well. Gender-based inequalities have been found to influence women's usage and participation patterns in ICT-based economies.[48] Moreover, male dominated social practices that are suppressive toward women, including violence against women to control their mobile phone usage, define women's ICT usage limits.[49] Unless the ICT services and content are customized to reflect women's needs and the inequality they are experiencing, ICT for development initiatives will only exacerbate gender discrimination.[50]

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47 Saloni Korlimarla, "The Difference an App Makes", *Cherie Blair Foundation for Women,* 5 April 2016. Available from *http://www.cherieblairfoundation.org/2016/04/05/the-difference-an-app-makes/*.

48 United Nations Educational, Scientific and Cultural Organization, "Enhancement of Literacy in Afghanistan". Available from *http://www.unesco.org/uil/litbase/?menu=4&programme=143, 2013*.

49 Anita Gurumurthy and Nandini Chami, Gender equality in the information society: A review Of current literature and recommendations for policy and practice, March 2014

50 Sarah Hossain and Melanie Beresford, "Paving the Pathway for Women's Empowerment? A Review of Information and Communication Technology Development in Bangladesh", *Contemporary South Asia,* vol. 20, no. 4 (December 2012), pp. 455–469.

A recent study on Internet usage in India[51] found that: "For the urban poor in India in general-and women in particular-the Internet may not be truly transforming their lives… The study shows that 96 per cent of male and 98 per cent of female Internet users surveyed were on Facebook. However, for many female users, the Internet experience seems to largely be passive, and constrained to Facebook… Women are not defining the Internet for themselves, they are simply absorbing what they are shown."

Findings from the study show that participation in a social networking site like Facebook may not imply an expansion of networks of support that are crucial especially for women entrepreneurs. The study indicates that the urban poor are not able to leverage the Internet to expand their offline social networks in a way that improves their opportunities. The study reports that only 17 per cent of female and 28 per cent of male Internet users are actively seeking information online on information such as rights, health, public services and development projects.

4.3.5. Online/Offline vulnerability

Besides their struggles against oppressive social norms, women entrepreneurs, alongside other women ICT users, are susceptible to the increasingly disturbing trends of cyber harassments, online bullying, sexual assault through social media, privacy violations, identity theft, revenge porn, etc. To make things worse, in most of the developing countries, the safety net against such ICT-related crimes are not that effective or does not exist. In the Asia Pacific region, there are organizations like Digital Rights Foundation[52] and Association for Progressive Communications[53] that are actively working to ensure a safer digital space for women netizens. However, across the region, the pace of progress in legislative reforms is quite slow.

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51 World Wide Web Foundation, "The Internet as a game changer for India's marginalized women – going back to the 'Real Basics'", 20 October 2015. Available from *http://webfoundation.org/2015/10/India-Womens-Rights-Online/*.

52 *http://digitalrightsfoundation.pk/*.

53 Association for Progressive Communications, "End violence: Women's rights and safety online". Available from *https://www.apc.org/en/projects/end-violence-womens-rights-and-safety-online*.

4.4. Enablers in ICT for women's entrepreneurship

4.4.1. Human factor

Human intermediation is critical when it comes to the successful use of ICT for women's entrepreneurship. The role of frontline workers to help women understand and develop trust in the new technologies in a safe space has been crucial to the success of any initiative that uses ICT to empower women. The human interface is further required when the goal of any organization or policy is to engage women from socio-economically and geo-politically marginalized communities. Traditionally, ICT spaces are male dominated. Therefore, it is important to ensure that women have access to women-friendly and safe spaces to access ICTs and related services. Frontline workers are important in creating these spaces and facilitating the learning process.

Example: DNet, a social enterprise in Bangladesh, has been mobilizing and training InfoLadies to provide information services to remote villages. Equipped with bicycles, ICT gadgets and information on health, education and agriculture, the InfoLadies travel to the remote villages to offer information services. In these villages, InfoLadies have helped women entrepreneurs establish their businesses by providing them with the information that they need. These InfoLadies are socially respected and trusted by the community.[54]

4.4.2. Safer space for ICT usage

ICTs have been effective in creating customized space for its users, both online and offline. As mentioned earlier, there are security vulnerabilities and conflicts with cultural practices that try to hinder women's progress. However, ICTs assist in creating safe environments that foster new collaborations, innovations and growth. Through ICTs, women can get a stronger as well as secure footing in networking, communication, and access to resources critical for their livelihood.

Example: In Afghanistan, discriminatory practices often make it dangerous for women to seek education, healthcare services, employment, and in some cases, it is dangerous to even leave their homes. Women-only cybercafés in big cities and the online social space accessed through mobile phone networks have allowed Afghan women to connect with each other and with the outside world. Through these online spaces, Afghan women

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54   Infolady. Available from *http://infolady.com.bd/*.

can communicate with each other, and even establish their own businesses. At present, there are several e-commerce sites managed by women from Afghanistan.[55]

4.4.3. Enabling policy and regulatory environment

It is imperative to have an enabling policy and regulatory environment within a country in order to ensure the sustainable growth of women's entrepreneurship using ICT. Such a conducive and coherent framework needs to covers issues related to labour laws, business registrations, property and inheritance rights, copyright and privacy.

Example: Some local community-managed courts gave out orders in India that forbid young and unmarried women to use mobile phones. In January 2013, the Supreme Court of India ruled that such orders are illegal. This kind of support for women's access and empowerment is critical, especially at the nascent stage of technology adaptation and application.

4.4.4. Emerging opportunities and innovation

ICT not only enhances the chance of profitability and efficiency for businesses, it also promotes future growth opportunities in government outsourcing, freelancing, microwork and social outsourcing (that meets both commercial and social obligations).[56]

Example: In Bangladesh, among the educated young women professionals, online freelancing and microwork have become hugely popular. Initiated around late 2010, at present a growing number of women professionals are working regularly as freelancers. In addition, some of the early movers in this sector have opened up their own company and started catering to clients with bigger work orders.[57]

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55 S. N. Amin, V. Ganepola, F. Hussain, S. Kaiser and M. Mostafa, "Impact of conducting gender research on the researchers in the context of Muslim communities in developing countries", in *Journal Advances in Gender Research: Special Issue on "At the Centre: Feminism, Social Science and Knowledge"*, vol. 20., M.T. Segal, ed. (Emerald, USA, 2015).

56 United Nations Conference on Trade and Development, *Entrepreneurship Policy Framework and Implementation Guidance* (New York and Geneva, 2012). Available from *http://unctad.org/en/PublicationsLibrary/diaeed2012d1_en.pdf*.

57 Asif Onik, "Netting the online money", *New Age Youth*, 8 November 2015. Available from *http://youth.newagebd.net/1395/netting-the-online-money/*.

Something To Do

Among your peers or individually, look into the following issues:

- In your opinion, what are the emerging opportunities within/using ICT sector in your country?
- Are there women freelancers working online?

Test Yourself

- What is ICT?
- How can ICT help women's entrepreneurship?
- What are the major challenges that women entrepreneurs face while using ICT in their work?

Key Messages

- Women entrepreneurs can use ICT as an enabling work platform and also as a mean of business.
- The absence of proper training, poor accessibility and disconnected planning can hinder the synergy between entrepreneurship and ICT.
- Inclusive process design, participatory policies and new innovations can help women entrepreneurs break barriers and be successful in their businesses.

V. SUMMARY

As we have observed in this module, entrepreneurship can empower women, and the role of ICT is pivotal in this digital age for women's entrepreneurship. Through multiple examples and case studies, we caught a glimpse of the enabling environment that ICT can create for entrepreneurship. The purpose of the exercises throughout the module is to help participants reflect on the status and practices of various aspects of ICT within their own communities. The modules in the Women Entrepreneurs Track-*Module W1: Planning a Business Using ICT and Module W2: Managing a Business Using ICT-provide details on the practical ICT* tools that women entrepreneurs can use for their businesses.

ANNEX

Notes for Trainers

Module C2: Enabling Role of ICT for Women Entrepreneurs is designed to have value for different sets of audiences (entrepreneurs and policymakers) and in varied and changing national conditions. The module is also designed to be presented, in whole or in part, and in different modes, on- and off-line. The module may be studied by individuals and by groups independently, in training institutions, as well as within government offices. The background of the participants, as well as the duration of the training sessions will determine the extent of detail in the presentation of content. The following "Notes" offer trainers some ideas and suggestions for presenting the module content more effectively.

Content and methodology

This module explores how women's entrepreneurship is related to women's overall empowerment, and how information and communication technologies (ICTs) can be utilized, both as a support platform, as well as a means to enable women's entrepreneurship.

The first section introduces the key concepts of entrepreneurship, presents a snapshot of present-day women entrepreneurs in the Asia Pacific region and globally, and shows the connections between women's entrepreneurship, development and empowerment.

The second section elaborates on the major enablers and barriers related to women's entrepreneurship with respect to society and culture, policy and regulatory environment, finance and credit, and capacity development.

The third section examines the role of ICT in enabling women's entrepreneurship and the related challenges.

Intended target audience

This module is aimed at aspiring as well as present women entrepreneurs, and community development practitioners. The intended target audience also includes development actors in government including ministers, parliamentarians, political actors, senior government officials, strategic planners and analysts. Furthermore, the private sector investors, ICT service providers, and other related stakeholders can be a part of the intended audience. The module is also relevant to civil society, i.e., academia, education, research, non-

governmental organizations, as well as other development actors working on women's empowerment, entrepreneurship, and ICT at the local and community levels.

Module C2 is adaptable. The diversity of challenges and opportunities in ensuring women's empowerment, successful entrepreneurial ventures, and the related use of ICTs is very rich, as we can observe in this module. There are many country and region specific elements of information and expertise that can be considered critically important for the audience in focus. With the resources mentioned in the module, some research, and some consultation, variations of the module for application to different audience can be developed.

Structuring the sessions

Depending on the audience, time availability, and local settings and conditions, the content of the module can be presented in different structured time capsules. What could be covered in sessions of different durations is outlined below. Trainers are invited to modify the session structure based on their own understanding of the country and audience.

Module C2 is best made an interactive learning experience. Participants are expected to engage and contribute to the discussions. Because of the novelty of the topic, participation is essential for gathering information about case studies and user experience.

For a 90-minute session

Provide an overview of the module. Refer to the introductory parts of each section to build your workshop content, and emphasize issues of most relevance to the participants. You may also choose to focus on particular sections of the module, for example, related to the enablers and barriers of women's entrepreneurship, and the role of ICT in enabling and promoting women's entrepreneurship.

If the participants are entrepreneurs, then the trainers need to spend more time on:
» Case studies related to women's entrepreneurship
» ICT-related innovations (tools and applications for entrepreneurship)

If the participants are policymakers, then the trainers need to spend more time on:
» Case studies related to successful women's entrepreneurship
» Policy formulation and regulatory environment for women's entrepreneurship
  › Success stories and challenges
  › International and local policy/regulatory practices
  › Role of ICT

For a three-hour session

This would be an expansion of the 90-minute session structured to provide greater focus on certain sections. Depending on the background of participants, you may wish to run through the module overview, and then focus on particular sections or subsections.

A three-hour session may also be divided into two 90-minute sessions as follows:

» The first session can cover the first and second sections of the module, and include related case study discussions, group exercises, and in-session reflections and discussions on the Global Entrepreneurship Monitor study for women entrepreneurs related to a particular country/community.

» The second session can be spent on the third section, with related case study discussions, group exercises, and in-session discussions on the region specific challenges and opportunities of ICT.

Please see the **"Something To Do"** boxes for examples of group exercises that can be conducted.

Based on the type of the participants, the selected case studies and group exercises will vary. For entrepreneurs, more examples on women led entrepreneurial achievements and ICT applications need to be used. For policymakers, the focus needs to be on exploring connections between policy practices and entrepreneurship/ICT applications.

For a full day session (6 hours duration)

» For the morning session, provide an overview of each section and focus on issues in selected sections, depending on the type of the participants. Similar to a three-hour session, for entrepreneurs, focus on the content of women's entrepreneurship and ICT applications from all the three sections of the module. For the policymakers, focus should be on the policy and regulatory practices.

» For the afternoon session, focus needs to be on discussions related to case studies, reflection questions and interactive exercises. Entrepreneur participants should be assigned in identifying the key challenges and opportunities they perceive in creating an entrepreneurship-friendly environment in their society's context. Policymakers need to be engaged in a SWOT analysis[58] exercise of the existing policies related to women's

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58 SWOT analysis is an acronym for strengths, weaknesses, opportunities and threats, and is a structured planning and evaluation method. See *https://en.wikipedia.org/wiki/SWOT_analysis.*

entrepreneurship and ICT in the related country. Both the groups need to have a reflective discussion on their ICT wish list to avail the best out of the technology, as well as on the challenges they are facing in using ICTs.

» Encourage group discussions and assign practical exercises in between PowerPoint presentations.

Participation in Module C2

The module is designed for self-study as well as for "classroom" delivery. Thus, each section of the module begins with a statement of learning outcomes and ends with a summary of key points. Learners may use the learning outcomes and summary of key points as a basis for assessing their progress throughout the module. Each section also contains discussion questions and practical exercises that may be accomplished by individual learners or used by trainers. These questions and exercises are designed to enable learners to draw on their own experience to benchmark the content and to think reflectively on the issues presented.

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About the Author

Faheem Hussain has over 10 years of experience in research on information and communication technology for development (ICTD), global higher education, and technology policy consulting. At present, he is an Assistant Professor in the Department of Technology and Society at State University of New York (SUNY) in the Republic of Korea. Previously, he worked as a faculty in Carnegie Mellon University's Qatar Campus and in the Asian University for Women in Bangladesh. He holds his Ph.D. in Engineering and Public Policy from Carnegie Mellon University, USA. His present research interests encompass ICTD, women's empowerment, public policy, social media and Internet freedom. He has been involved as a Technology Policy Specialist in numerous research projects with a number of United Nations organizations (e.g., UN-APCICT and UNDP), international development agencies (e.g., Ford Foundation and IDRC), and international think tanks (e.g., Freedom House and LIRNEasia), in the fields of technology, public policy and development.

UN-APCICT

The United Nations Asian and Pacific Training Centre for Information and Communication Technology for Development (UN-APCICT) is a subsidiary body of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). UN-APCICT aims to strengthen the efforts of the member countries of ESCAP to use information and communication technology (ICT) in their socio-economic development through human and institutional capacity building. UN-APCICT's work is focused on three pillars:

1. Training – To enhance the ICT knowledge and skills of policymakers and ICT professionals, and strengthen the capacity of ICT trainers and ICT training institutions;
2. Research – To undertake analytical studies related to human resource development in ICT; and
3. Advisory – To provide advisory services on human resource development programmes to ESCAP members and associate members.
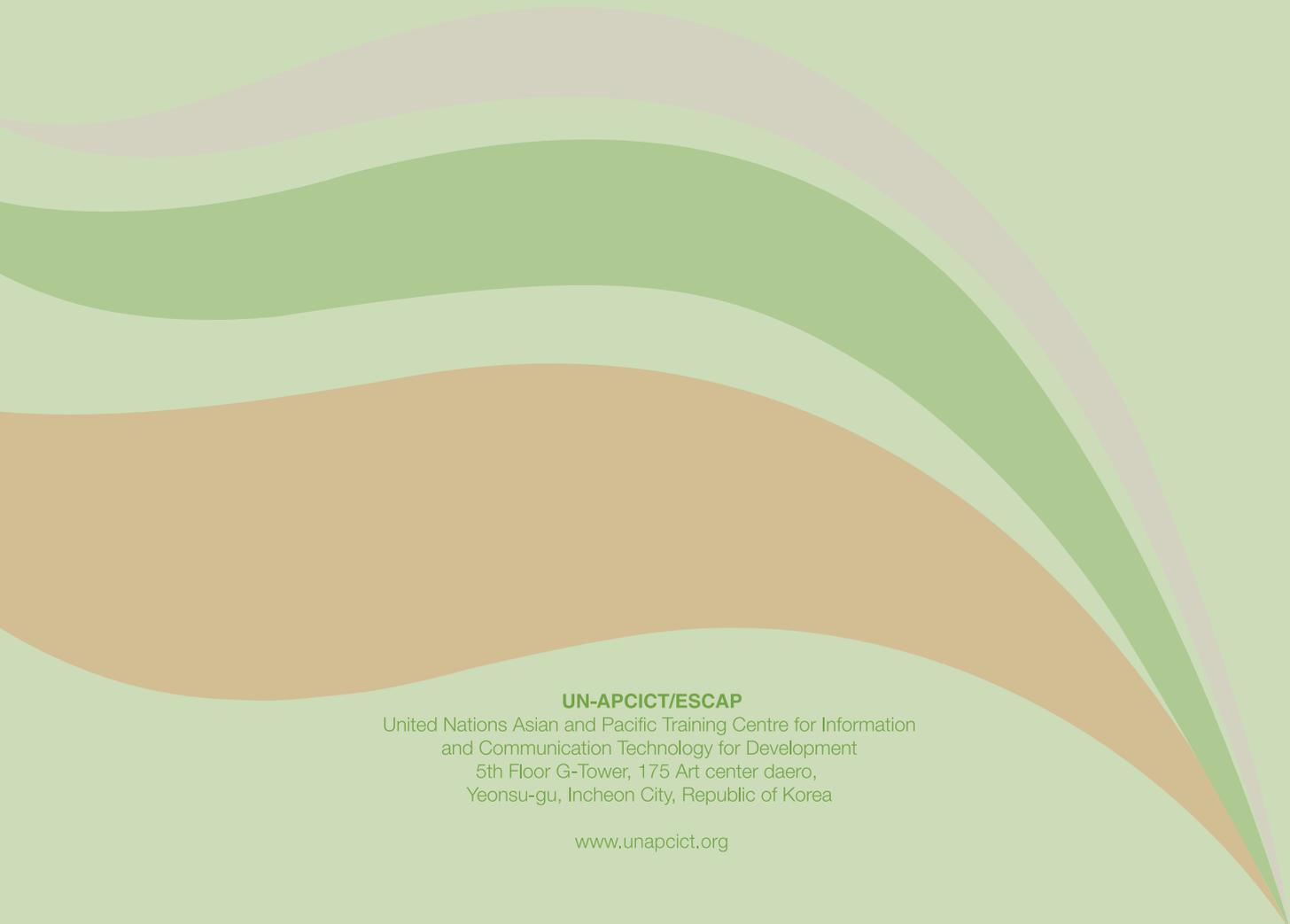
UN-APCICT is located at Incheon, Republic of Korea.

http://www.unapcict.org

ESCAP

ESCAP is the regional development arm of the United Nations and serves as the main economic and social development centre for the United Nations in Asia and the Pacific. Its mandate is to foster cooperation between its 53 members and 9 associate members. ESCAP provides the strategic link between global and country-level programmes and issues. It supports governments of countries in the region in consolidating regional positions and advocates regional approaches to meeting the region's unique socio-economic challenges in a globalizing world. The ESCAP office is located at Bangkok, Thailand.

http://www.unescap.org