Background Brief

UN-Women's Strategy to Leverage Innovation & Technology to Accelerate Efforts towards Gender Equality and the Empowerment of Women

Introduction

The achievement of the ambitious Sustainable Development Goals (SDGs), notably gender equality and women's empowerment, requires transformative shifts, integrated approaches, and new solutions. Based on current trajectories, existing interventions will not suffice to achieve a Planet 50-50 by 2030. For example, it will be 95 years before there is parity in girls' lower secondary education for the poorest 20%[1]; it will be 50 years before there is gender parity in politics at the parliamentarian levels[2]; and it will be 170 years before women worldwide will earn as much as men.[3]

Innovative approaches are central to delivering the SDGs for all. While SDG 9 focuses on industry, innovation and infrastructure, all SDGs acknowledge the importance of actionable strategies to leverage innovative practices. Innovations in policies, management, finance, science and technology that disrupt "business as usual" are increasingly being recognized as a precondition to accelerate the achievement of SDGs for all. From mobile banking ventures that facilitate women's entrepreneurship to e-learning platforms that take classrooms to individuals, social innovations have the potential to serve as a powerful tool to break trends and increase the awareness, access and availability of opportunities particularly for women and girls with disabilities, rural women, and other women experiencing marginalization. Digital technologies can provide unprecedented solutions to address the fundamental needs of marginalized women and those at the bottom of the pyramid. For example, many poor or disadvantaged populations now receive public services because governments can use digital IDs to verify their eligibility. Nearly 900 million Indians have been issued digital IDs in the past five years, which they are using to open bank accounts, vote, and curtail fraud through better monitoring.

However, history shows that innovation is not pre-ordained; can create new, unforeseen problems of its own; can be rejected and does not benefit all equally. Notably, innovation does not benefit women and men equally. For example, electricity was the main driver of the second industrial revolution. However, for the 1.1 billion people who still do not have access to electricity, this revolution could as well have never happened. In particular, women and girls continue to bear the disproportionate costs of the lack of access to electricity. Similarly, smallholder women farmers in sub-Saharan Africa continue to be excluded from the benefits of the green revolution half a century after its inception, due to the gender gap in access to land, information, technologies, finance, time and markets. Closing this gender gap could increase their productivity by up to 20%, contributing substantially to the achievements of the 17 SDGs in concerned countries. Gender blind innovations will also fail to reach 100% of its target customer base and could result in trillion of dollars lost to the global economy.

Recognizing the unprecedented opportunities as well as the challenges of rapid innovation and technological development for gender equality and women empowerment and the importance of innovation to benefit women and men equally, UN-Women has included innovation as one of the "drivers of change" in its Strategic Plan 2018-2021. In line with UN-Women's normative mandate, this background paper focuses on UN-Women's approach in partnership with Member States, the UN, civil society, and the private sector to address the barriers to make innovation markets work better for women. It builds on UN-Women's September 2015 Brief to the Executive Board on Innovation for Gender Equality and Women's Empowerment, which focused

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[1] Education For All Report, 2014
[2] World Economic Forum Global Gender Gap Report, 2015
[3] World Economic Forum Global Gender Gap Report, 2016

on UN-Women's funnel approach to identify, prototype and scale up innovations through its programming and support to Member States. This background paper also builds on UN-Women's Stocktaking paper: Harnessing the digital revolution for the achievement of gender equality and women's empowerment, which identified UN-Women's priority innovations to increase the effectiveness and the efficiently of UN-Women's work. The stocktaking paper also highlights the linkages between UN-Women's different digital platforms.

This paper is organized into three parts. Part I outlines the barriers underlying the gender gap in innovation and technology. Part II highlights UN-Women's strategy and key activities to address each of these barriers and Part III outlines UN-Women's approach to implementation of this strategy through internal capacity development, partnerships and knowledge management.

I. Barriers underlying the gender gap in innovation and technology

UN-Women has identified a number of barriers that contribute towards creating and sustaining the gender gap in innovation and technology, including limited market awareness and investment in innovations that meet the needs of women; gender blind approach to innovation; the under-representation of women as innovators and entrepreneurs; and the lack of proof of concepts of innovations that work for women. Taken together, these barriers translate into perceived higher risks of investing in gender-responsive innovations.

1. Limited market awareness & investment in innovations that meet the needs of women.

Innovation, technology and entrepreneurship are engines for advancing gender equality and women's empowerment by increasing women's access to education and socio-economic opportunities. In turn, empowered women also have the potential to benefit these sectors by providing needed skills and talent, as well as new markets, which could unleash huge economic potential. For instance, according to GSMA (2015), closing the gender gap in mobile phone ownership and usage could unlock an estimated $170 billion in market opportunities for the mobile industry by 2020[4]. However, this potential is constrained by a number of barriers.

- **Lack of understanding about the unique needs of women – the research bias**: Innovation-based research and practices have not focused on gender differences.[5] This is particularly the case in the medical and engineering design fields where women are grossly under-represented in human clinical trials and medical studies often do not break out statistics for women if they are included.[6] This gender-bias in medical research results in incorrect diagnoses and poor treatment for women.

- **Constrained market demand for gender-responsive innovations:** The market demand for gender-responsive innovations is artificially constrained. Today, most innovations are underlined by digital technologies and accessed through the internet by mobile devices. However, ITU's most recent estimate indicates that the global internet user gender gap has grown from 11% in 2013 to 12% in 2016. Over 1.7 billion women don't own mobile phones. Women are on average 14% less likely to own a mobile phone than men, which translates into 200 million fewer women than men owning mobile phones.[7] This digital gender gap is a result of the high costs of devices and data plans; limited digital literacy and confidence; discriminatory social norms and harassment concerns; and the lack of relevant content, applications and services. This widening digital gender gap means that women are unable to demand the products and services that meet their needs.

2. Gender-blind approach to innovation.

One of the key steps to ensuring that a given innovation meets 100% of its target customer base is to integrate gender throughout the innovation cycle. For example, it is important to consider how gendered norms and

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[4] GSMA (2015) Connected women: Bridging the gender gap: Mobile access and usage in low and middle-income countries.

[5] http://www.emeraldinsight.com/doi/pdfplus/10.1108/MD-07-2012-0533

[6] Scientific American (September, 2017) It's not a women's issue.

[7] GSMA (2015) Connected women: Bridging the gender gap: Mobile access and usage in low and middle-income countries.

needs influence the problem identification; whether women have been actively engaged throughout the process; and whether business models for scale explicitly consider adoption constraints faced by women. However, there are a number of barriers to a gender-responsive approach to the innovation cycle:

- **Lack of methodologies, tools and sex-disaggregated data** Most gender analysis tools are generic and are not specifically targeted towards innovators and entrepreneurs. However, gender analysis is key to designing innovations that meet the needs of women.[8] Hence, very few dedicated practical methodologies and tools exist for innovators and entrepreneurs to integrate gender consideration throughout the innovation cycle. Similarly, sex-disaggregated data on women's access and usage of innovation and technology is not widely available or tracked in many low- and middle-income countries. This data gap occurs at three levels: individual company databases, national government statistics, and international institutional data and statistics.[9]

- **Limited sharing of knowledge and practices:** There are limited spaces and platforms for organizations to share experiences, knowledge and practices about opportunities and challenges towards a more gender-responsive innovation approach.

3. Under-representation of women as innovators and entrepreneurs

Innovating for gender equality requires a rethink the way problems are defined, the way priorities are identified, who is engaged, how they are engaged, the way in which solutions are delivered, and the ways we learn. Since women best understand the challenges they face in their daily lives and the barriers they experience with regard to gender equality, they are in the best position to define innovative solutions. However, the innovation and technology industry currently suffers from a major under-representation of women. In 2014, only 18% of U.S based start-ups had at least one female founder, increasing from 9.5% in 2009.[10] Similarly, only 6% of app developers are women and while the computing industry's rate of job creation in the US is now three times the US national average, based on current trends, women will hold only one in five computing jobs by 2025[11]. A growing number of disruptive business models are under-pinned by digital technologies and it is estimated that 90 percent of future jobs will require ICTs[12]. One of the main reasons for the under-representation of women as innovators and entrepreneurs is their under-representation in STEM and ICT-related fields[13]. In 2011, only 0.4% of women planned to major in computer science, compared with 6.7% in 1983.[14] Similarly, women make up only 12% of engineering students fields[15].

There are a number of barriers to women in STEM and ICTs:

- **Gender-science stereotypes:** Most people associate science and math fields with "male" and humanities and arts fields with "female". Men are stereotypically considered as more competent than women in technology, engineering, and innovation. Such stereotypes can lower girls' aspirations for science and engineering careers from an early age, as many young women and girls believe that they need to be exceptional to succeed in these "male" fields.[16]

- **Biases in recruiting, promoting and evaluating processes:** Currently, the recruitment, promotion and evaluation in most innovation, technology and entrepreneurship businesses are either gender-

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[8] Gendered Innovations: How Gender Analysis Contributes to Research. Publications Office of the European Union, Luxembourg. See also : http://genderedinnovations.stanford.edu/people.html

[9] https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/02/GSM0001_03232015_GSMAReport_NEWGRAYS-Web.pdf

[10] CrunchBase. https://www.crunchbase.com/#/home/index

[11] Accenture. Cracking the gender code

[12] https://euobserver.com/opinion/132428

[13] Sax, L.J et al. (2016). Anatomy of an enduring gender gap: The evolution of women's participation in computer science. The Journal of Higher Education.

[14] Sax, L.J et al. (2016). Anatomy of an enduring gender gap: The evolution of women's participation in computer science. The Journal of Higher Education.

[15] http://www.ini.cmu.edu/news/2016/10/equalrespectblog.html

[16] http://www.aauw.org/files/2013/02/Why-So-Few-Women-in-Science-Technology-Engineering-and-Mathematics.pdf

blind or rely heavily on informal networks (online social networking, personal referrals, or word-of-mouth communication), prioritizing the status quo groups and putting women at a disadvantage[17]. There is also a higher quit rate among women, which is more than twice in the high-tech industry (41 percent for women VS 17 percent for men). Fifty-six percent of women working in science, engineering and technology sectors leave their organizations at the mid-level points (10-20 years) in their careers[18].

- **Lack of access to flexible schedules and work-life policies:** As women are still the main caregivers of the family, difficulty to balance work and family responsibilities is another hindrance to innovative and entrepreneurial activities by women[19]. Flexible scheduling and favorable work-life policies are essential for retaining mid-level women. The reality, however, is that flexible work schedules are technically available, but managers (predominantly men) make accessing them difficult, either through their authority or through informal comments. Also, the informal norm of "relocation or relegation" — one must be willing to relocate or their work will be relegated to others — favors men and younger single employees without family concerns.

In addition, to the barriers to women in STEM and ICTs, there two additional barriers that contribute to the under-representation of women as innovators and entrepreneurs:

- **Lack of role models for female innovators and entrepreneurs:** As many as 40 percent of US women in science, engineering and technology jobs reported lacking role models - nearly half reported lacking mentors, and 84 percent reported lacking sponsors (someone who would help make them and their accomplishments visible with the right people at the right time within the organisation)[20]. This makes it more difficult for women to access informal peer networks for advice, contacts and support, and to navigate "unwritten" company rules and norms that link with the recruiting, promoting and evaluating process mentioned above.

- **Lack of affordable finance:** The under-appreciation of the market potential for innovations that address the needs of women makes financiers more reluctant to invest in such innovations, particularly for the most marginalized. This difficulty particularly affects women entrepreneurs. Worldwide, women owned formal SMEs have $260 to $320 billion in unmet financing needs worldwide.[21]

4. Lack of proof of concepts of investing in innovations for women and girls

The Commission on the Status of Women and the High Level Panel on Women's Economic Empowerment have identified a number of areas that are critical to the achievement of gender equality and women's empowerment. Innovation in these areas to meet the critical needs of women and girls would help to accelerate the achievement of gender equality and women's empowerment. These areas, which are particularly relevant to women living in humanitarian contexts, include:

- **Identity:** Globally, 1.1 billion people are unable to prove their identity. Women and girls are less likely to have access to personal identification than men due to economic and social barriers they face. Without an identity, women have no rights and access to basic social services and economic opportunities. In the absence of formal identify, forced displacement can also lead to statelessness.

- **Access to information, markets and finance:** Women make up 43 percent of the agricultural labour force in developing countries and 59 percent in sub-Saharan Africa. Yet, women farmers face a number of key structural barriers that limit their access to land, information, infrastructure and

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[17] 17 https://www.researchgate.net/publication/230271908_Race_Gender_and_the_Invisible_Hand_of_Social_Capital

[18] https://www.ncwit.org/sites/default/files/resources/ncwit_women-in-it_2016-full-report_final-web06012016.pdf

[19] http://www.emeraldinsight.com/doi/pdfplus/10.1108/MD-07-2012-0533

[20] https://www.ncwit.org/sites/default/files/resources/ncwit_women-in-it_2016-full-report_final-web06012016.pdf

[21] International Finance Corporation (2013) Small and medium enterprise finance: new findings, trends and G-20/Global partnership on financial inclusion progress. Washington DC, USA.

markets. Only 20 percent of land owners are women and 5 percent of women have access to extension services[22]. Their limited access to finance makes it extremely difficult to invest in processing and post-harvesting equipment that would enable women farmers to avoid distress selling, receive higher prices and reduce post-harvest losses. One of the key reasons for their limited access to finance is the lack of data, which makes it impossible for women farmers to build a credit profile. Digital technologies have enormous potential to address this issue by capturing data at scale and low cost.

- **Access to education and skills training:** Tens of millions of girls are unable to access to education around the world. According to the UNESCO 2016 Education for All Global Monitoring Report, 48 percent of out-of-school girls in the world are likely never to enroll in school. In addition, more than one third of the girls in primary school drop out of school at the secondary level. Girls face multiple barriers that cause them to drop out of school and limit their access to quality education: poverty, gender based discrimination, school related gender-based violence, early marriages and pregnancy, geographic isolation, unsuitable and unsafe learning environments, among others. At the same time, with innovative approaches, digital technologies, and social networks, the tools to enable universal access to quality education have never been more accessible.

- **Addressing violence against women and girls:** Violence against women and girls is one of the most systematic and widespread human rights violations in the world. It is also a major obstacle to ending gender inequality and discrimination globally as it hinders the abilities of women and girls to claim their other rights (economic, civil, political, etc). Violence against women and girls exists in varying degrees across all communities in the world. It can occur in private and public spaces, cuts across age, socio-economic status, educational and geographic boundaries and affects all societies. It is estimated that 35% of women have experienced violence at some point in their lives, mostly by an intimate partner[23]. Prevalence can be as high as 70% in some countries.[24] Technology and behavioural innovations can play an important role in increasing access to information and services as well as to better designing programmes to address the root causes of violence.

However, despite the potential of innovation to address the needs of women and girls in these critical areas, there is limited investment in such innovation. One of the key reasons is the lack of proof of concepts at scale to demonstrate the impact of investing in innovations benefit women and girls notably from marginalized groups.

II.   UN-Women's Innovation Strategy

Efforts by individual entities to address each barrier separately are unlikely to achieve transformative change. In order to address these barriers in an integrated manner and build coalitions for change, UN-Women - the United Nations lead entity and global champion for gender equality - has prioritized innovation technology as one of the "drivers of change" within its new Strategic Plan, 2018 – 2021. UN-Women has developed an Innovation Strategy, which aims to leverage innovation and technology to accelerate the achievement of gender equality and women's empowerment. UN-Women's innovation strategy takes a partnership approach to focus on:

1. Developing the market for innovations that advance gender equality and women's empowerment;

2. Promoting a gender-responsive approach to the innovation cycle;

3. Promoting innovations created by women, for women; and

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[22] http://www.unwomen.org/en/news/in-focus/commission-on-the-status-of-women-2012/facts-and-figures

[23] WHO, *Global and Regional Estimates of Violence against Women* (2013).

[24] UN-Women, "Violence against women prevalence data: surveys by country" (2012)

4. Investing in proof of concepts in gender-responsive innovations.

1. Developing the market for innovations that advance gender equality and women's empowerment

In order to deepen the market for innovations that advance gender equality and women's empowerment, UN-Women will focus on the following actions:

- **Creating a global public-private partnership for change:** Given the range of barriers, UN-Women believes that leveraging the full potential of innovation and technology to bring about such transformative change will require an enabling policy environment and a coalition of multi-stakeholder partnerships across industries and between national governments, civil society, the UN, and the private sector. Hence UN-Women engages with all stakeholder groups and promotes collaboration across different stakeholder groups. For example, UN-Women has partnered with the Global Science, Technology and Innovation Conferences (G-STIC), which bringing together Member States, civil society and the private sector stakeholders from science, technology and innovation communities. In 2017, UN-Women played an active role in the G-STIC and helped to bridge the gap between technology development and policy making with regard to making innovation and technology work better for women.

  UN-Women has also launched a Global Innovation Coalition for Change (GICC), a dynamic partnership between UN-Women and key representatives from some of the largest private sector companies, academic and not-for-profit institutions in the world. The GICC is focused on developing the innovation market to work better for women to accelerate the achievement of gender equality and women's empowerment. A full description of the GICC Members can be found in its Member Booklet. Leveraging the pooled expertise and resources brought by such partnerships, UN-Women strives to improve the quality of its innovation initiatives and create opportunities to take successes to scale. UN-Women provides secretariat support to the GICC for two years. This includes supporting the GICC to develop it workplan, ensure engagement, and report on progress. More details can be found in UN-Women's full background paper: Making Innovation and Technology work for Women.

- **Closing the gender digital divide:** UN-Women, with the International Telecommunication Union, the International Trade Centre, GSMA and the UN University, has founded the Equals Global Partnership. Equals is a global network of corporate leaders, governments, not-for-profit organizations, communities and individuals aimed at closing the gender digital divide. UN-Women also contributes to Web Foundation and Association for Affordable Internet to increase women's access to the internet.

2. Gender-responsive approach to the innovation cycle

In addition to the actions taken to increase market awareness and investment in innovation that work for women, UN-Women also focuses on the actions below to promote a gender-responsive approach to the innovation cycle:

- **Developing principles, tools and methodologies:** UN-Women in partnership with the GICC, other UN agencies and the Global Science, Technology and Innovation Conference (G-STIC) is developing a dedicated set of Women Innovation Principles that private and public sector partners can use to promote gender-responsive innovation within their organizations. Notably, the Principles will provide concrete applications to specific sectors including ICTs, clean energy and agroecology. For the private sector, Women Innovation Principles are to build on the Women's Empowerment Principles (WEPs) – a seven step guide developed by UN-Women in collaboration with the UN Global Compact, to enable business to empower women in the workplace, marketplace and community. To date, more than 1489 business leaders around the world have demonstrated leadership on gender equality through the WEPs, which offers a free gender gap analysis tool to help companies identify strengths, gaps, and opportunities to improve their performance on gender equality. UN-

Women together with the GICC aims to launch the Women Innovation Principles on International Women's Day in March 2018, and a dedicated set of methodologies and tools to enable practitioners to implement the Principles by the end of 2018.

- **Global Innovation Exchange Platform:** In order to promote knowledge exchange, UN-Women has built a <u>Gender Microsite</u> on USAID's <u>Global Innovation Exchange Platform</u>. The Platform connects over 100 organizations from across government, business, academia and civil society and provides them with a global forum to collaborate, share and showcase gender responsive best practices, case studies, innovations and methodologies.

3. Promoting women innovators and entrepreneurs

UN-Women focuses on the following action in order to promote women innovators and entrepreneurs.

- **Prioritizing education of girls and promoting girls in STEM:** UN-Women prioritizes education of girls and women as a key to empowerment, inclusive growth and social transformation. UN-Women in partnership with UNESCO and other UN agencies promotes girls in STEM and increases their access to 21st century skills, including coding. In particular, UN-Women and UNESCO have developed a second chance education programme which specifically focuses on improving the digital skills of young women who have dropped out of formal education. Another example is UN-Women's HeForShe IMPACT 10x10x10 initiative, which works with ten Heads of State, ten CEOs of major corporations and ten university presidents on game-changing gender equality commitments. Some of these commitments include expanding mobile phone access to underserved women, providing scholarships to women in STEM fields and teaching girls how to code computer software and apps.

- **Promoting women in innovation incubators:** UN-Women aims to partner with UNOPS (United Nations Office for Project Services) Global Innovation Centers to promote women entrepreneurs and innovators by addressing the barriers they face, notably in accessing finance to scale. UNOPS plans to open its first Global Innovation Center in Antigua in early 2018 to focus on innovation and entrepreneurship for small island states affected by natural disasters in the Caribbean. UN-Women also has a portfolio of projects worldwide specifically aimed at promoting women entrepreneurship.

- **Promoting role models through champion of change for women's economic empowerment:** Through UN-Women's <u>Empowerwomen.org platform</u>, UN-Women has built a strong network of external champions to identify innovative solutions for gender equality. Globally we have been joined by 375 Champions of Change and 50 mentors for Champions for Change from 75 countries in five cohorts. This Champion of Change programme enables "ordinary-extraordinary" women and men to identify local challenges in their communities, receive capacity-building and coaching and then work with the Empower Women team and peers to conceptualize innovative solutions to these challenges. Empwerwomen.org showcases good practices on women's economic empowerment and has developed a range of knowledge products since its launch in September 2014.

- **Promote greater exchange for women innovators and entrepreneurs through the "SHE INNOVATES" platform:** In order to support women entrepreneurs and innovators, UN-Women and the GICC are establishing a "SHE INNOVATES" platform. This open source platform will showcase good practices, tools and methodologies to make innovations and technology work better for women. The Platform will be a 'one stop shop', where multiple stakeholders, including women innovators themselves can find out about existing industry-wide action, opportunities, and access learning resources in innovation and technology. The Platform will support the establishment of a global network of women innovators from around the world and will include a SHE INNOVATES App. The app will provide access to the Exchange Platform content. It will also connect women around the world with other innovators.

- **Increasing access to finance:** UN-Women has developed a concept note for accelerator venture fund to provide access to finance to women enterprises to invest in scalable innovations that accelerate

gender equality. Through the GICC, UN-Women will contribute to developing a financing strategy that will articulate concrete actions to be taken to scale up women's access to finance.

4. **Investing in gender-responsive proof of concepts**

UN-Women systematically leverages innovation and partnerships to accelerate the implementation of its programming. This enables UN-Women to: (i) develop proof of concepts for innovations critical to the achievement of gender equality and women empowerment through a design thinking process with women at the center; (ii) help stakeholders to scale up successful innovation by embedding these within its programming; and (iii) enhance the effectiveness and efficiency of UN-Women's programming. Below are the key proof of concepts that UN-Women is currently focused on within its programming:

- **Enterprise Platforms:** Building on its successful prototype and pilot of the Buy From Women Platform with over 3,000 farmers conducted in collaboration with WFP in Rwanda, UN-Women is now embedding an enterprise platform for women farmers throughout UN-Women's portfolio of projects on women's empowerment through climate-smart agriculture. The enterprise platform connects small holder farmers to the agricultural supply chain and provides them with critical information on weather, market prices and incoming opportunities via text messages. This helps farmers to predict their yields, and the data from the Platform have the potential to help unlock access to finance, enabling cooperatives to invest in labour and time-saving equipment. UN-Women will also prototype a retailing business configuration for women entrepreneurs in the informal water and decentralized renewable energy sectors in Haiti. This proof of concept will be leveraged for programmes focused on the economic empowerment of women entrepreneurs.

- **Virtual Skills School:** Approximately 20% of UN-Women's expenditure is directed towards capacity building and training. For example, of the 120,000 persons supported by UN-Women's humanitarian programmes in 2017, 72,000 received skills development and second chance education support. To further improve the effectiveness and efficiency of UN-Women's services, UN-Women is developing virtual skill schools (VSS)- an e-learning portal that will provide access to a broad range of capacity development content for UN-Women's programmes. As an online content aggregator, the VSS portal will allow for integrations with a wide range of partner content, including UN-Women. It will also offer offline solutions, including accessibility through mobile applications. The VSS will store user profiles across all platforms in order to manage the user's learning journey and will also be accessible through UN-Women's enterprise platforms. Currently, UN-Women is curating contents on: (i) entrepreneurship for UN-Women's affirmative procurement and women entrepreneurship programme; (ii) second chance education for UN-Women's "Women's leadership, empowerment, access and protection in crisis response" (LEAP); and (iii) climate smart agricultural practices for women farmers in UN-Women's "Women's empowerment through climate-smart agriculture programme". The aim is to leverage the VSS for all UN-Women capacity building and training needs and to make these solutions accessible to all

- **Making Blockchain Technology Work for Women in Fragile Contexts:** Blockchain technology, which offers a distributed and secure online database that could enhance records and money transfer systems, has the potential of assisting people in fragile contexts and improving financial inclusion for under-privileged groups, including the 2.5 billion people who currently lack access to banking. UN-Women has partnered with Innovation Norway to assess the potential of leveraging blockchain technology to address the challenges faced by women in crisis-affected contexts and inform UN-Women's engagement in this area. Notable, blockchain has the potential to enable transformative change for women in humanitarian settings by sending and receiving digital assets, and by building a civil and economic identity for women. UN-Women will partner with other UN agencies to pilot blockchain technologies on the ground, as well as with private sector solutions. UN-Women's engagement builds on its participation in a blockchain hackathon at the Katapult Future Fest in Oslo, as well on a live blockchain test and simulation that UN-Women will co-host with the UN Office of Information, Communication & Technology Innovation and Digital Blue Helmets, with support from

other UN agencies (notably UNDP, UNICEF, UNOPS and WFP). Following this simulation, UN-Women intends to pilot two to four solutions in the field in collaboration with its UN and private sector partners and with the support of Innovation Norway. These pilots will be deployed and potentially scaled through UN-Women's Programmes for Disaster Risk Reduction (Gender Inequality of Risk) and Crisis Response and Recovery (LEAP-Women's Leadership, Empowerment, Access and Protection).

- **Preventing sexual and gender-based violence in South African Higher Education Institutions:** While technology and the internet can pose risks to women and girls, they also offer new, innovative way to address violence against women and provide women with more protection and security. For example, the World Bank has organized a "Domestic Violence hackathon" in Central America and Washington DC, where over 350 hackers developed innovative digital solutions to tackle domestic violence. UN-Women in South Africa, in partnership with the United Nations Population Fund (UNFPA) and Higher Education and Training HIV/Aids (HEAIDS) Programme, is leveraging innovative mobile technology to address sexual and gender-based violence (SGBV) in tertiary institutions (SGBV), especially among the youth. A human centered design approach was used to identify possible innovative solutions to address gender based violence on campuses. Using the ideathons model, UN-Women engaged 321 students who came up with 31 ideas of possible solutions. The best six ideas were selected and tested. The outcomes can be view on: www.ideathon.co.za. Two solutions that will undergo a digital prototyping. If successful this will be rolled out to all 26 Universities and 52 Technical Vocational Education and Training (TVET) colleges in South Africa, reaching about 2.2 million students. These digital solutions could become an integral component of UN-Women's Programme to prevent violence against women and coordinate access to essential services.

- **Big Data and Gender Equality:** UN-Women recognizes the potential of leveraging big data to improve research, the project development cycle, implementation, monitoring and evaluation. UN-Women in partnership with UN Global Pulse, a special initiative of the Office of the Secretary-General that uses big data to support the UN system innovate, have drafted a first report on Gender Equality and Big Data: Making Gender Data Visible. The report outlines how big data can complement traditional data to monitor implementation of the SDGs. UN-Women is also focused on leveraging big data to increase our understanding of issues related to gender equality and improve our programme design to address these issues. These areas include women's use of smartphones for income generation and network support in India; understanding the potential of using Twitter data combined with traditional data to understand social dynamics related to violence against women in Brazil; understanding the potential of digital data to measure progress towards SDG 5.6. on sexual and reproductive rights; understanding female call-ins to radio shows on gender and sexual rights: what are they interested in and why; and linking financial transaction data from UN-Women's Buy From Women platform to satellite imagery of farms to develop a predictive model of land productivity using machine learning.

In addition, UN-Women will continue to build on its participation within the UN Innovation Data Lab initiative. The Innovation Data Lab will take a curated network approach to address the most critical issues of improving knowledge exchange and managing partnerships with respect to big data. It will also ensure that the UN works together to address important issues related to data privacy.

III.   Implementation Approach Partnerships & Knowledge Management

UN-Women's develops and implements its innovation strategy through its programming. This requires innovation to be embedded in the day-to-day work for all UN-Women staff. Hence UN-Women invests in internal capacity development, partnerships and knowledge management. It has established an Innovation Facility to support UN-Women leverage these areas to mainstream innovation across the organization. The Innovation Facilities supports these areas as follows:

Internal Capacity Building

Innovation is everybody's responsibility in UN-Women. UN-Women emphasizes internal capacity building for innovation to better prioritize corporate investment with staff, identify best practices and guide staff on how to include innovation and technology in their work. Based on internal consultations and a capacity assessment, UN-Women has developed an internal capacity building plan support implementation of its innovation strategy. The objective is to strengthen UN-Women's internal innovation capability and competencies by increasing staff access to learning resources, tools and information that enable them to embed innovation throughout their work. The plan focuses on three main levels of capacity building:

- Development of a webinar series on innovation and technology accessible to all staff.

- Learning exchanges offering practical skills and competencies on 'how to' innovate.

- Hands on trainings on specific innovative solutions to challenges facing various departments within the organization.

UN-Women is also increasingly co-organizing learning events in collaboration with other UN agencies to promote cross-agency exchanges and alignment.

Partnerships

Collective experience, capabilities and collaboration are needed to overcome the issues and barriers to women's advancement in innovation and technology and ensure that no one is left behind. UN-Women's implementation of its innovation strategy is grounded in a partnership approach. UN-Women works closely with Member States, civil society, the UN, academia and the private sector in the identification, prototyping, piloting and scaling of gender-responsive innovations.

UN-Women's founding partner for its work on innovation is the Government of Denmark, , which provided UN-Women with resources to establish an Innovation Facility. In addition, UN-Women has developed a strategic and financial partnership with Innovation Norway around it work on blockchain and the enterprise platform in Haiti. All UN-Women's investments in innovation at country level are carried out in close consultation with partner governments, who play a critical role in identifying gaps and in scaling successful pilots. UN-Women works closely with Member States to identify the most appropriate business models, policy framework and partnerships to scale successful pilots. For example, in South Africa, the Ministry of Higher Education will scale the most successful digital prototypes to address gender-based violence on campuses to all universities and technical colleges in South Africa.

UN-Women also works in close partnership with other UN agencies to implement its Innovation Strategy. UN-Women is an active member of the UN Innovation Network (UNIN) and will continue to participate and contribute to the UNIN. UN-Women's investments in innovation initiatives draws on the expertise and experiences of other UN agencies. As mentioned earlier, UN-Women's work on blockchain is actively supported by the UN Office of Information, Communication & Technology Innovation and Digital Blue Helmets, who are co-hosting the blockchain lab. In addition, UNDP, UNICEF, UNOPS, and WFP are part of the evaluation panel to ensure that the selection of blockchain solutions benefits from and contributes towards the ecosystem in this regard. Similarly, UN-Women's Buy From Women enterprise platform in Rwanda was piloted in close collaboration with WFP and WFP is likely to remain a key partner for its scaling up. UN-Women is also working closely with UNOPS Innovation Centers to ensure that women entrepreneurs and start-ups will benefit equally from the services and support provided through these centers.

UN-Women actively collaborates with civil society, the private sector and global networks across the gender and ICT sector. For example, UN-Women is one of the founding partners of the [Equals Global Partnership](#), a global network aimed at closing the gender digital divide. UN-Women has actively contributed as a board member to the Association for Affordable Internet, part of the Web Foundation, and supported the Foundation develop a [scorecard toolkit](#) that assesses the national digital gender divide. UN-Women also has partnered with organizations such as the Mozilla Foundation to increase digital literacy. As mentioned above, UN-

Women's key partnership strategy with the private sector is through the Global Innovation Coalition for Change.

Knowledge management

In terms of knowledge management, UN-Women will strengthen its capacity to rigorously measure the impact of its innovation investments. UN-Women will continue to document lessons learned and best practices. As part of its 2018-2021 knowledge management strategy, UN-Women is to develop an innovation community of practice. In line with this approach, UN-Women has already started to make all information related to innovation available on its both its internal and external websites[25].

UN-Women will also disseminate knowledge during key events and forums including the Commission for Status of Women and during the UN General Assembly. At regional and country levels learning and knowledge will be shared through relevant regional and international platforms. UN-Women will target the innovation, technology and gender communities with its knowledge dissemination.

Conclusion

While innovative approaches are central to delivering the SDGs for all, innovation does not benefit men and women equally. UN-Women has identified a number of barriers that contribute towards creating and sustaining the gender gap in innovation and technology. Ensuring that women and girls benefit from innovation will require public, private and civil society partners to come together to address these barriers in an integrated manner. UN-Women has developed a four-pronged innovation strategy that takes a partnership approach to holistically addressing these barriers. Capturing and sharing experiences and knowledge to continuously improve our collective action is central to UN-Women's innovation strategy. As a global champion for women and girls, UN-Women will continue to support Member States leverage innovation and technology to accelerate the achievement of gender equality, women's empowerment and the Sustainable Development Goals.

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[25] Information on UN-Women's work on innovation and technology may be found here on UN-Women's website: http://www.unwomen.org/en/how-we-work/innovation-and-technology