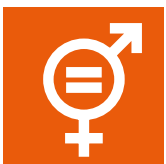GOOD PRACTICES BROCHURE:

Innovation and Technology in Humanitarian Settings

Photo credit: UNICEF/Womenintechmv – Girls to Code Thinadhoo

GENDER
IN HUMANITARIAN ACTION
Asia and the Pacific

This Good Practices brochure was produced by the Asia-Pacific Gender in Humanitarian Action Working Group, co-chaired by UN Women, CARE International and the United Nations Office for the Coordination of Humanitarian Affairs (OCHA).

Introduction

From biometric verification systems and drones to predictive forecast-based models and 'virtual humanitarians', innovation and technology provide adaptable solutions to address humanitarian challenges and have the potential to advance gender equality and women's empowerment. The acceleration of digitalization in Asia and the Pacific is rapidly reshaping systems and processes and broadening participation with positive implications for more effective and anticipatory humanitarian action. However, given persistent digital divides along gender, geographical, economic, age and many other lines that often intersect with existing vulnerabilities and underlying systemic socioeconomic inequalities, digital transformation risks increasing social exclusion of people in situations of vulnerability. In particular, it affects women, people with diverse sexual orientation, gender identity, gender expression and sex characteristics (SOGIESC), older people, people with disabilities, people living in rural or hard to reach areas, indigenous people and ethnic minorities, and/or people living in poverty. Adopting a gender transformative approach to the use of innovation and technology in humanitarian settings is essential to ensure equitable access to humanitarian assistance, protection and information, while maximizing opportunities for people affected by crisis to shift the aid paradigm towards resilience and hold organizations accountable.

The Asia-Pacific region is the fastest growing region in the world in terms of early adoption and innovation in digital culture and digital economy, and it is also the region that is the most prone to disasters with more than three quarters of the global population of people displaced by disasters.[1] Although the digital revolution is driving growth across the region, these gains have been unequal.[2] As digital technologies become more widely available and invested in as potential drivers to accelerate data-driven humanitarian action, the different ways in which diverse population groups engage with digital services needs to be explored and understood. Key dimensions of the digital divide include access to mobile phones/smartphones, Internet connectivity, usability and infrastructure, as well as education, literacy, social norms, affordability and fears around privacy, safety and security.

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1   ADB (2022) Disaster Displacement in Asia and the Pacific.
2   Advancements in China, Japan and the Republic of Korea are characterized by a high level of gender inequality; See UNESCAP (2021) The Future is Equal.

Closing the digital gender divide has three components: (1) improving access to and use of digital technologies and the Internet; (2) developing the skills needed to use digital technologies and to participate in their design and production; and (3) advancing women to visible leadership and decision-making roles in the digital sector.[3]

Social and economic barriers often mean that fewer women and girls have access to the Internet or a mobile phone, while younger, wealthier and more urban populations utilise tools more frequently than other groups (figure 1 and figure 2). Marginalized populations must be given opportunities to influence and identify factors that support successful implementation of innovative and technological humanitarian action.
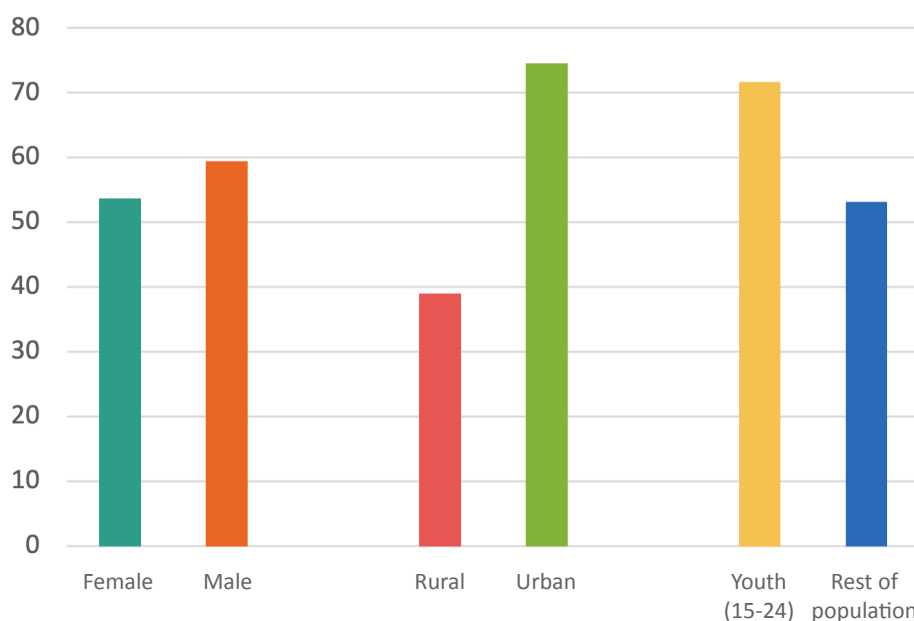
Figure 1. Internet use 2018–2022, Asia-Pacific region (percentage)
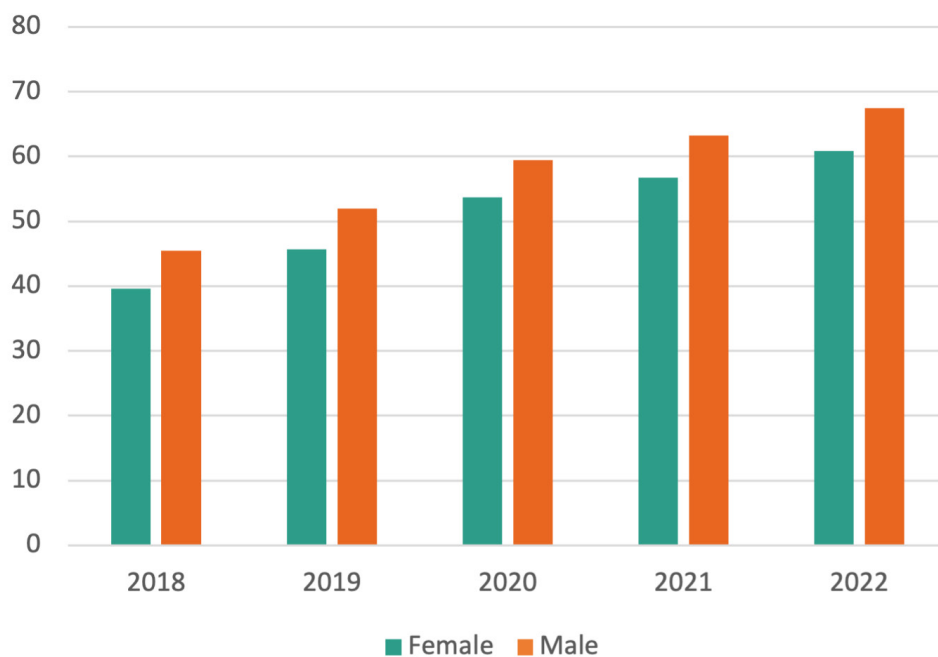
Source: ITU (2021), Measuring Digital Development, Key ICT Indicators.

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3   GSMA (2019) Digital Equity Policy Brief.

Figure 2. Percentage of individuals using the Internet
in the Asia Pacific Region, 2020

Source: ITU (2021), Measuring Digital Development, Key ICT Indicators.

Additional risks go beyond access, as incomplete data sets founded on discriminatory criteria can exacerbate digital exclusion (for example, facial recognition technology is not equally effective for people of different ages, gender and ethnicities[4]). The potential of technology is only as strong as the underlying data set, which highlights the importance of collecting and using sex, age and disability disaggregated data (SADDD). Further, issues such as inadequate data protection, legislative oversight, assumptions, malfunctions and lack of consent can harm affected populations, as poor data responsibility practices and uncritical adoption of new technologies may compromise the safety and rights of vulnerable groups and increase the risk of gender-based violence (GBV). For example, reports indicate the Taliban have used sensitive biometric data from donor Governments to target people, including women's rights activists, women working in roles the Taliban believe are unsuitable for women, and lesbian, gay, bisexual and transgender people.[5] Similarly, biometric data of Rohingya refugees was shared with the Government of Myanmar without consent.[6]

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4   CSIS (2020) The problem of bias in facial recognition; A. Najibi, A. (2020) Racial Discrimination in Face Recognition Technology.
5   Human Rights Watch (2022) New Evidence the Biometric Data Systems Imperil Afghans.
6   ODI (2021) Although shocking, the Rohingya biometrics scandal is not surprising and could have been prevented.

Research indicates that mobile phones have the potential to be a humanitarian lifeline and facilitate essential access to information, early warning communication, referral pathways for survivors of GBV, financial services, government programmes and innovative services (such as agri-fintech start-ups that provide weather predictions, crop prices and marketing opportunities) that could help to reduce gender gaps and support climate and disaster resilience. In Asia and the Pacific, the digital ecosystem encompasses and permeates almost every facet of life as the region boasts some of the highest rates of coverage for the Internet, broadband and mobile cellular networks for both rural and urban populations.[7] New and emerging technologies can bolster humanitarian response and disaster preparedness while circumventing poor infrastructure. For example, unmanned aerial vehicles are routinely used for mapping and monitoring preceding and following rapid-onset emergencies, as well as delivery of essential supplies to hard to reach or inaccessible areas.[8] While digital transformation is actively occurring and developing, its direction remains unclear as the progress has not yet translated into equitable usage for all groups, and inclusion remains an enduring challenge in the humanitarian sector despite the availability of digital tools.

Among the countries in the region with the highest humanitarian risk, Afghanistan, PNG and Pakistan have the largest digital gender gaps, while Bangladesh, Myanmar and the Philippines have made notable advancements in reducing the gap.[9] Key barriers identified by women in these countries include cost (Afghanistan, Myanmar, and Papua New Guinea), the lack of literacy and digital skills including reading/writing (Afghanistan and Papua New Guinea) and social norms, such as the disapproval of family members (Afghanistan, Bangladesh and Pakistan).[10,11] People living in humanitarian environments/displacement settings face additional access barriers – for example, in September 2019 Bangladesh imposed a year-long ban on the use of mobile phone services and the Internet by Rohingya refugees in Cox's Bazar, severely limiting access to information and services.[12] An estimated 34 million women in East Asia and the Pacific and 201 million women in South Asia lack access to mobile phone technology.[13] Gaps in Internet and mobile phone usage are significantly heightened for people with disabilities, for example, only 40 per cent of government public websites

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7   ITU (2022) Measuring Digital Development: Facts and Figures 2021.

8   U-Inspire (2020) A toolkit on youth and young professionals in science, engineering, technology, and innovation for disaster risk reduction

9   Based on the Mobile Gender Gap (GSMA), Gender Inequality Index (UNDP), Gender Gap Index (WEF), and OCHA INFORM Risk Index 2023 (rating of very high or high includes Afghanistan, Bangladesh, India, Iran, Myanmar, Pakistan, Papua New Guinea, and the Philippines).

10   Al Jazeera (2022) Myanmar's internet gets pricier for dissenters, apolitical alike; Telenor (2022) Telenor Myanmar to hike prices following regressive tax.

11   GSMA (2022) Mobile Gender Gap Report 2022; USAID (2013) Connecting to Opportunity: A Survey of Afghan Women's Access to Mobile Technology; GSMA (2014) Connected Women: Striving and Surviving in Papua New Guinea – Exploring the Lives of Women at the Base of the Pyramid; and A4Ai (2016) Unpacking Myanmar's Mobile Phone Gender Gap.

12   HRW (2019) Bangladesh: Internet Blackout on Rohingya Refugees.

13   GSMA (2021) Mobile Gender Gap Report 2021.

are reported as accessible in the region.[14] The recent coronavirus disease (COVID-19) pandemic increased reliance on digital services while simultaneously exacerbating the digital divide, as solutions were not equally available to everyone. For example girls' education was more impacted than boys', further increasing the gender gap in science, technology, engineering and mathematics (STEM), particularly information and communications technology (ICT).[15] Nevertheless, some progress is being made, and in 2021 Myanmar and Viet Nam were the two most improved countries in the region according to the digital inclusion index.[16] Emerging technologies have the potential to create more inclusive systems. For example, solar-powered blockchain devices can create unique digital identities and wallets without Internet access, providing digital services to households in Papua New Guinea that lack bank accounts and household electricity.[17] This type of technology has powerful implications for distributing cash-based humanitarian assistance in countries such as Pakistan where women are 94 per cent less likely than men to own a mobile money account.

A study of 32 countries, including Bangladesh, Cambodia, India, Myanmar, Pakistan and the Philippines estimated the economic cost of women's digital exclusion at $1 trillion in gross domestic product (GDP), and closing the gap in the next five years could net $524 billion, yet Governments are not adopting policies to bridge the digital gender gap.[18] The humanitarian sector needs to take a do no harm approach to address digital inclusion gaps, meet the evolving needs of the most vulnerable populations, ensure equitable responses and strengthen the humanitarian-development nexus. Identifying the best solution according to need may require delinking innovation from technology. Innovation does not always mean digitalization; it can also be a revolutionary way of thinking about common resources that diverges from the usual perspective to provide a new solution.

This brochure provides some practical examples of gender-transformative innovative and/or technological solutions in humanitarian response throughout the Asia-Pacific region that range from applications of blockchain to innovative firefighter units.

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14   ESCAP (2018) Building disability-inclusive societies in Asia and the Pacific
15   WEF (2022) Global Gender Gap Report
16   Roland Berger (2021) Bridging the digital divide, improving digital inclusion in Southeast Asia
17   "Women in countries with humanitarian crises are 30 per cent less likely than men to have an individual financial account. Having a safe place to save and store humanitarian cash transfers and remittances is a key strategy for coping with shocks and building resilience." See Hammond, A. & Young, D. (2018) Can blockchain disrupt gender inequality?.
18   A4AI (2021) The Costs of Exclusion: Economic Consequences of the Digital Gender Gap

Key considerations for the gender digital divide in humanitarian crises (Adapted from USAID):

➔ Will your digital intervention reach vulnerable and marginalized populations and is it responding to their needs? Do women and girls have access and full ability to use the digital solution? Will social norms prevent them from using this digital solution – if so, how will programming address and overcome barriers? It is critical to understand the size and shape of the gender digital divide in your specific context (including access, ownership, employment in ICT fields or financial tools), noting that it can vary within a country.

➔ How can you better use digital tools to ensure that inequalities are not exacerbated in this crisis? How do you ensure women and girls can access life-saving digital tools and services while mitigating potential harms, like online GBV?

➔ How can you ensure all gender identities are included across the data lifecycle: collection, analysis and sharing? Are you collecting SADDD and data on intersectionality and social factors, such sexual orientation?

➔ How can you work directly with community leaders to create compelling cases for women's technology use – under what conditions would women be allowed to use the Internet? How can these conditions be expanded over time? Are there technologies or policies that can uniquely support these use cases?

➔ Could the private sector provide expertise in gender dynamics around technology use and humanitarian response? Do they have relevant data on women's access to and use of digital technology to better inform humanitarian response programming?

DIGITAL GENDER GAP

- Internet, mobile phone/smartphone ownership and usage – affordability, digital literacy
- Exclusion from digitized and digitalized systems (such as digital financial inclusion and digital identity cards) and additional barriers for transgender or non-binary populations
- Blockchain technology
- STEM/ICT education
- Data biases from incomplete/non-inclusive data
- Social norms

RISKS

- Exacerbating the gender digital divide and entrenching inequalities in humanitarian action
- Inadequate data protection
- Digital discrimination from data biases
- Unforeseen consequences
- Improper consent
- Protection risks, online and physical harm (GBV)
- Assumptions
- Malfunctions
- Legislative oversight

OPPORTUNITIES

- Increased equitable access to information
- Increased access and delivery of services to hard-to-reach populations
- Geospatial mapping
- Predictive analytics
- Digital literacy/ training and STEM/ICT education
- Increased collection and use of sex, age and disability disaggregated data, and data analytics
- More effective time spent
- Resilient livelihoods (such as agri-tech)
- Resilience building technologies and services
- Mobile enabled solutions (app based)
- Financial literacy and empowerment
- Increased accountability, feedback and protection mechanisms
- Empowerment of populations in vulnerable situations

HELVETAS

Empowering women Rohingya refugees as volunteer firefighters

Kutupalong, located in Cox's bazar, is currently the world's largest refugee camp. There are approximately 900,000 people living in the camp, the majority of whom are Rohingya refugees that fled violent persecution in Myanmar, and more than half of Rohingya refugees are women and girls. In addition to being the largest refugee camp in the world, Kutupalong is the most densely populated, which poses a hazard to fire threats, especially when nearly every structure in the refugee camp – from shelters to learning and health centres – is made of flammable materials such as bamboo and tarpaulin.[19]

In December 2018, the European Union conducted a two-week assessment of fire prevention, preparedness and response capacities due to perilous fire risk in the Rohingya camps. Portable firefighting capabilities and bulk water supplies were identified as two of the most pressing needs. An analysis conducted in 2021 revealed that more than 172 fires were reported in Rohingya camps between May 2018 and February 2021. During the dry season on 22 March 2021, shortly after the assessment was completed, a devastating fire began in camps 9, 8W and 8E and tore through Kutupalong, destroying 12,000 shelters and other facilities, including one hospital and several health centres. The fire took 15 lives, injured 560 and displaced approximately 50,000 refugees. Altogether, nearly 100,000 refugees were directly or indirectly affected by this calamity, and an estimated 48,300 refugees lost their shelters and belongings.[20]

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19   Rohingya Refugee Crisis Explained
20   Another Week Another Fire in Rohingya Refugee camps – Rohingya Camp Fire Situation Report 2021

Given the frequency and recurrence in such fires, a joint project under Helvetas introduced an innovative and highly effective programme in which fire safety experts train volunteers from the refugee community, including women and people with disabilities[21] (one third of whom are women), to use a new system they created for fire prevention and disaster risk reduction measures. On 15 March 2021, less than one week prior to the fire in Kutupalong, the initiative funded by the United States Agency for International Development was launched to rapidly design, build and prototype a proof-of-concept selection of mobile firefighting equipment with the potential to mitigate challenges caused by the unique terrain and infrastructure of the camps. One month later, on 22 April, the prototype mobile firefighting units (MFU) were delivered for evaluation and field testing. The research and development project was devised to overcome the lack of access to bulk water in Rohingya refugee camps.

Before the introduction of the training course, members of refugee communities were putting their lives at risk to put out fires, relying on sand and hand-held ABC fire extinguishers that require close proximity to the flames (when throwing sand and/or spraying fire extinguishers). Adapting the global standard methodology for putting out wildfires, the programme developed a system that could be implemented in the refugee camp context focused on water. While water is inexpensive, it is not always available in the camps, who experience significant water shortages, especially in the dry season. Therefore, the project is working to ensure there are water-based firefighting supplies and equipment pre-placed, as well as easily mobile. The project used four different methods for carrying water into the refugee camps: 1) a tuktuk carrying water; 2) a carry frame that can be manoeuvred up and down stairs; 3) a wheelie frame designed for slopes and rough terrain; and 4) backpacks with water gun attachments. The system was designed to deliver 250 litres of water per minute to fight the fire, which is equivalent to dozens of fire extinguishers being sprayed simultaneously. Additionally, this method greatly reduced the hazards to which the refugee firefighters were originally exposed using the other methods.

The project was piloted on a small scale initially, training 12–14 refugees from each camp as safety unit volunteers. During training sessions, refugee volunteers operate in teams of six and have different modes of operation. For example, they can work as a team to prime the pumps, operate the pumps, and spray water from the hose onto the fire. Alternatively, if the fire is smaller and does not require as high a volume of water, they can use the backpacks. In training exercises, the teams often attack the fire in a shelter initially with the larger hose, and then once it is reduced, they will come closer with the backpack systems to mop up the reminder of the fire. Prior to expanding the project, instructors wanted to be certain that the structure, quality, skills and tactical decision-making processes were well-established and deeply ingrained, as male and female volunteers confront extreme danger to protect the lives of people in their community.

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21   Volunteers are included regardless of disability, if they are capable of meeting the performance criteria.

Over time, the project successfully rolled out across refugee camps on the Myanmar-Bangladesh border, and additional projects are ongoing.[22] According to fire safety trainers, each project must be implemented with the same methodology, equipment and training regime to create uniformity and cohesion across all contexts. Approximately 100 refugees volunteered as firefighters in each camp, and women firefighters collectively reported their experiences as safety unit volunteers and first responders had been empowering and bonding.[23]

The Rohingya women showed tremendous resilience and solidarity while engaging in these programmes and, despite concerns, they had no issues with the dress code (fireproof overalls, hijab) required of all firefighters or the social implications of volunteering, and they viewed volunteering as an opportunity to challenge sociocultural, gender-based norms in Rohingya society. One limitation is that there are no women among the instructors, because beach lifeguards were recruited to be instructional staff and so the pool of potential candidates was exclusively male.

By this stage, the project has trained over 2,300 volunteers, including 400–500 women, to operate the water pumps and mini fire trucks to put out fires. By August 2023, it is forecasted that the project will have completed the training of 3,500 volunteers, including 200 site management staff and health centre personnel. Moreover, there are plans to install 50 water tanks in each camp, of which 15 per camp have already been approved by authorities.

In addition to the volunteer trainings, the project also conducted community awareness sessions on fire safety at the household level in which more than 60,000 Rohingya men and women learnt how to prevent fires and how to react and reach the volunteers in case of emergency.

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22   https://www.unhcr.org/news/stories/2022/6/62a33c974/rohingya-refugees-lead-response-fire-threat-bangladesh-camps.htmloing

23   Health Sector Cox's Bazar, Health Sector Coordination Meeting – 10t November 2021

The fire risk situation in Cox's Bazar is not unique. Thus, by 2024, the project hopes to standardize operating procedures pertaining to MFUs and refugee volunteer firefighting units for use in emergency preparedness action plans to combat fires in other countries and contexts. One key feature of the water pumps and other supplies used is that all parts are available in local markets, so when components such as nozzles and connectors are needed, they are easily accessible and affordable, and the mechanical/technical expertise to repair equipment is available, thus the project can remain self-sustaining. This project is innovative less for the novel technology it employs and more due to the ways in which it adapts simple technologies (time-tested, tried and true systems used in rice paddies) to adequately prepare for and extinguish fires in refugee camps.

The nature of refugee settlements, global climate change and longer-than-usual dry seasons exacerbate the risk of lethal fires spreading through refugee camps. The project provides an opportunity for trained refugee volunteers to lead the emergency response when fires arise while demonstrating the importance of incorporating women into emergency preparedness action plans. Ultimately, disaster risk preparedness, reduction and prevention are vital, and the women working with project are surmounting social and cultural barriers to disseminate this message while also promoting disaster response.

Packaging machine raises efficiency at unit managed by Women's Federation in Odisha, India

Women's empowerment is imperative for sustainable, equitable and inclusive food security in the long run. To achieve this, the Government of India implements a programme of collectivization of women into self-help groups and provides livelihood assistance. The scheme is implemented in Odisha, India, through the department of Mission Shakti, coordinating 700,000 such groups. Since 2021, the World Food Programme (WFP) has provided technical assistance to Mission Shakti in Odisha to strengthen women's capacities and enhance their incomes.

In one such initiative, WFP installed a semi-automated packaging machine at a unit run by a women's federation in Puri district, Odisha. The unit manufactures nutrition supplements in the form of take-home rations (THR), supplied to pregnant and lactating women and young children under the government programme for maternal and child nutrition. The women manage each step of

Photo credit: WFP/Azhar Haque

the process, including procuring the raw material from government agencies, manufacturing THR and delivering it to beneficiaries within the stipulated timeline.

Earlier, THR was packaged manually, and this was labour intensive, requiring women to work tediously for long hours, often under pressure to meet the delivery deadline.

After installing the packaging machine, WFP trained women to use it and put up easy to follow pictorial guidance for ready reference while operating the machine. Follow-up visits help in troubleshooting and ensuring smooth operations.

By using the packaging machine, the required time has been halved, and spillage has reduced considerably. The risk of contamination of THR has been eliminated, and the shelf-life of the product has increased. Packaging efficiency has also led to higher volumes of production and THR is now delivered to more than 5,000 beneficiaries at their respective Anganwadi Centres (rural childcare centres). Women are less dependent on hiring men or having to put in long hours of their own. With more time on their hands, they are now thinking of further supplementing their livelihoods.

"The packaging machine is a boon to us. Now, with less time and labour we pack more packets. In the remaining time we can also engage in other income generation activities."

– Basanti Sahoo (Member of Women's Federation)

The case studies were contributed by Aradhana Srivastava and Foyzun Nahar from WFP

adpc Asian Disaster
Preparedness Center

Gender-inclusive climate smart agriculture practices: A closer look

In South Asia, food security and nutrition have not improved significantly over the past two decades despite the region's satisfactory economic growth. Only seven years remain until 2030, the target year of the Sustainable Development Goals (SDGs). Yet while the clock is ticking, the irony is that estimates of how much time is needed to reach the Goals are growing each year. The State of Food Security and Nutrition in the World Report (2022) explains that world hunger rose in 2021, together with a growing gender gap in food insecurity, reflecting worsening inequalities across and within countries.
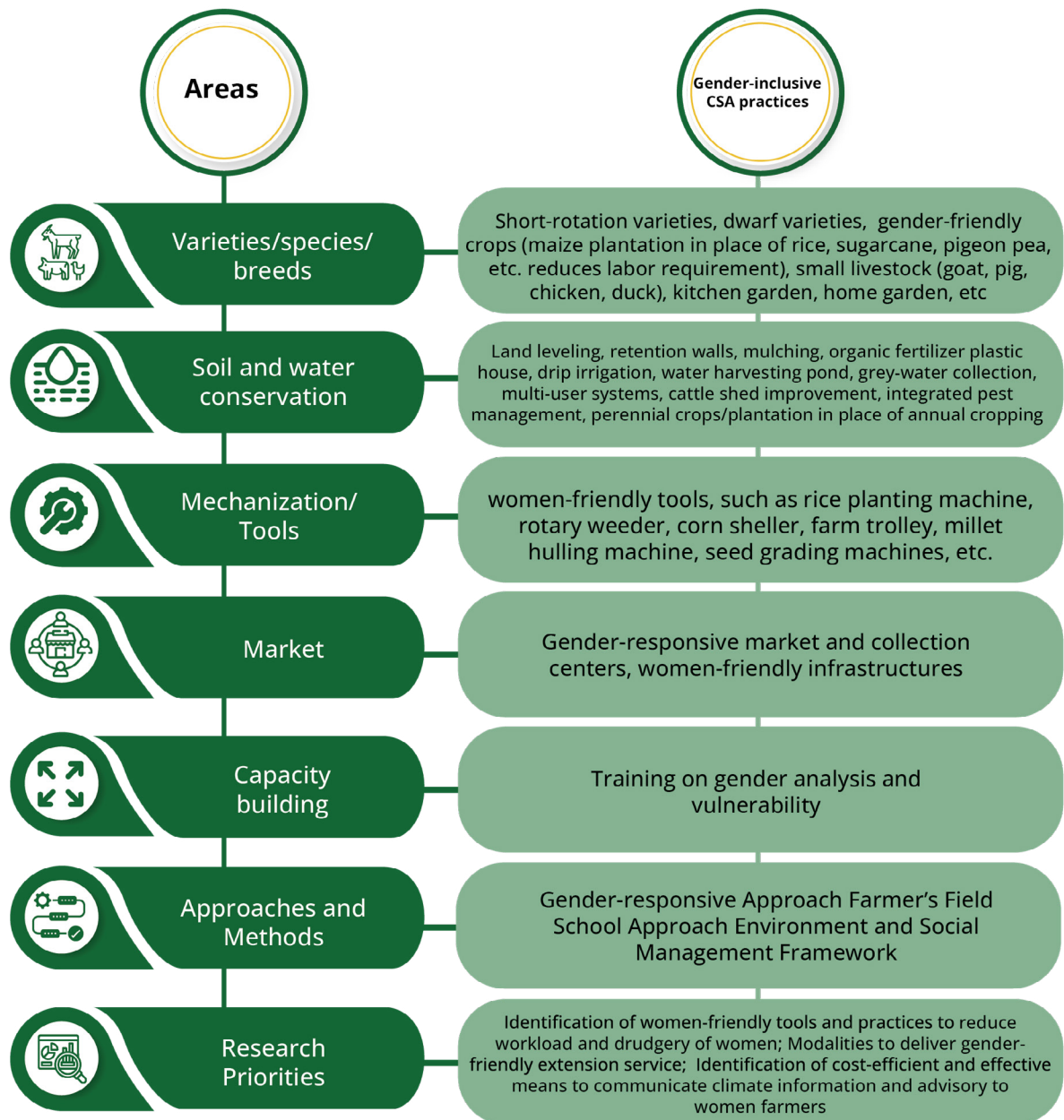
Progress towards Goal 2 (Zero hunger), Goal 5 (Gender equality) and Goal 13 (Climate action) requires a comprehensive approach towards empowering rural women, men and youth in climate-smart agriculture (CSA) by supporting them through inclusive policy and practices.

CSA has holistic potential toward improving agricultural productivity, building resilient food production systems and empowering rural women and young girls, and innovations and technologies have emerged as timely solutions for adapting agriculture to the changing climate.

Promoting gender-inclusive CSA can minimize climate change impacts on food security and nutrition by strengthening homestead-based agriculture and building resilience. Engagement of women farmers in CSA practices and adoption of climate-smart technology may not only reduce women's workloads but also help to improve their access to agricultural inputs, equipment, tools and assets. More importantly their access to new market opportunities and decisions may also improve. CSA will also help to promote recognition of women's knowledge, experiences and practices related to disasters in the context of multiple sociocultural and gender norms.

Increased productivity, strengthened resilience and reduced emissions offered by climate-smart technologies have the potential to set the agriculture sector on a pathway towards resilient growth that would dramatically close gaps toward the government's 2040 targets.[24]

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24   World Bank (2019) Climate Smart Agriculture Investment Plan Bangladesh: Investment Opportunities in the Agriculture Sector's Transition to a Climate Resilient Growth Path.

Areas

Gender-inclusive CSA practices

Areas	Gender-inclusive CSA practices
Varieties/species/breeds	Short-rotation varieties, dwarf varieties, gender-friendly crops (maize plantation in place of rice, sugarcane, pigeon pea, etc. reduces labor requirement), small livestock (goat, pig, chicken, duck), kitchen garden, home garden, etc
Soil and water conservation	Land leveling, retention walls, mulching, organic fertilizer plastic house, drip irrigation, water harvesting pond, grey-water collection, multi-user systems, cattle shed improvement, integrated pest management, perennial crops/plantation in place of annual cropping
Mechanization/Tools	women-friendly tools, such as rice planting machine, rotary weeder, corn sheller, farm trolley, millet hulling machine, seed grading machines, etc.
Market	Gender-responsive market and collection centers, women-friendly infrastructures
Capacity building	Training on gender analysis and vulnerability
Approaches and Methods	Gender-responsive Approach Farmer's Field School Approach Environment and Social Management Framework
Research Priorities	Identification of women-friendly tools and practices to reduce workload and drudgery of women; Modalities to deliver gender-friendly extension service; Identification of cost-efficient and effective means to communicate climate information and advisory to women farmers

The Asian Disaster Preparedness Center (ADPC) recently mapped and assessed gender in climate-resilient agricultural policies and practices in three South Asian countries (Bangladesh, Nepal and Pakistan). Key findings and learnings are highlighted below.

Findings from all three countries suggest that women and girls have limited access to agricultural equipment and technology compared to their male counterparts. For example, in Bangladesh, the level of access to technology depends on the costs involved in buying and maintaining the technology. Limited information and knowledge about new technology and training, the price of the equipment, machinery suited mainly to men, the absence of institutional support and lack of credit are the main obstacles hindering rural Bangladeshi women from reaping the full benefits of technology and innovation.

Though policies such as the National Livestock Policy 2007 and the Livestock Extension Policy 2013 have made references to women's participation and their access to finance and technology, translating this sentiment into actions has been a major challenge. The majority of national policies have no clear linkages to other national sectoral policies, nor any reference to women's equal participation in climate-resilient agriculture and innovations, including the National Agriculture Policy 2018, the National Seed Policy 1993, the National Agriculture Mechanization Policy 2020, the Bangladesh Wheat and Maize Research Institute Act 2017 and the 2021 updated nationally determined contribution (NDC) to reduce emissions and adapt to the impacts of climate change.

Only a handful of key projects in the country have systematically considered the integration of gender. One such example is the National Agriculture Technology Program-Phase II (NATP-2), a collaborative gender mainstreaming programme under the Ministry of Agriculture (MoA) and the Ministry of Fisheries and Livestock (MoFL). Gender, environmental and social safeguards are mainstreamed in all aspects of NATP-2 to empower women by promoting their active use of CSA technologies. It also aims to promote market linkage through the integration of technology generation, transfer, farm-to-farm extension and agribusiness development.

Women's contributions to the agriculture sector in Nepal are crucial, as about 80 per cent of all women are engaged in agriculture and allied activities. However, women still have limited access to productive assets and services, such as land, technology, tools, training, extension, credit and the market. Roughly 19.7 per cent of women own 5 per cent of the total land in Nepal, and only 10 per cent of arable land is either solely or jointly owned by women.[26]

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26   FAO. 2019. Country Gender Assessment of Agriculture and the Rural Sector in Nepal. Kathmandu: FAO.

Although efforts have been made to enhance the adaptive capacity of farmers through the introduction of new technology, women farmers have not benefited as much as men, as access to and knowledge of the technologies are gendered. As technology promotion has generally tended to favour male-dominated cash crops, women's access to technology must be enhanced to improve women's agricultural productivity.

Men largely control cropping choices, since decisions related to cropping are influenced by access to productive and financial resources. Lack of access to and control over agricultural services and technology and limited influence over adaptation decisions may further increase women's workloads and widen gender inequality.[27]

Some projects and programmes[28] have shown strong commitments toward inclusion and women's empowerment by promoting women-friendly technologies such as microsolar systems, biogas plants, improved water mills and clean cookstoves. Gender-inclusive CSA practices derived from those initiatives are summarized below.

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27   MoFE. 2021. Vulnerability and Risk Assessment to Climate Change 2021. Kathmandu: Ministry of Forest and Environment.
28   Some of these initiatives are: Prime Minister's Agriculture Modernization Project (PMAMP); Adaptation for Smallholders in Hilly Areas (ASHA) Project, Nepal Climate Change Support Program (NCCSP); Integrating Agriculture into National Adaptation Planning (NAP-Ag) Program; etc.

In rural communities of Pakistan, patriarchal norms strongly guide the gender division of labour. In almost all provinces, rural women spend most of their time supporting their livelihoods in agro-farming and activities related to rearing livestock, although their labour force contribution varies across provinces.

Lack of property ownership rights and limited access to information, technology and extension services have made women more vulnerable and less capable of diversifying their livelihood options and adopting CSA practices and innovations. Despite women's active participation in farming, women have little say in land use, crop choices, and adoption of CSA technology and practices. Even if women are consulted, male members of the family usually have the final say. Decision-making responsibilities within households and in public spaces are highly gendered in Pakistan.

Although Transforming the Indus Basin with Climate-Resilient Agriculture and Water Management, Agribusiness Development in Balochistan and the Better Cotton Initiative (BCI) attempted to foster women's participation, such efforts should be intensified to better promote gender equality. These projects contributed to the empowerment of rural women farmers through climate-smart farming education, irrigation technology training and the introduction of improved seed varieties resilient to extreme weather conditions.

Based on the assessment of the policies in Bangladesh, Nepal and Pakistan, the following actions are recommended: building and strengthening rural women's and youth networks and enhancing their linkages with extension services; engaging private sectors in investing in climate-smart tools that are sustainable and women-friendly; marketing these tools with government subsidies and/or insurance coverage; strengthening capacity at provincial and local levels on the concept and process of empowerment of women and youth engaged in CSA; and enhancing close coordination among respective national disaster management authorities, concerned sectoral ministries and province and district levels women development departments in the three countries.

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Enhancing digital literacy through interactive voice response (Indonesia)

In the ever-increasing digitized world, already marginalized groups with limited access to mobile devices and Internet connectivity are at risk of being left even further behind. Increasingly, individuals must be able to access online accounts and navigate digital portals to receive financial services, submit job applications and demonstrate proof of COVID-19 vaccination. Refugees and asylum seekers face many barriers to Internet connectivity, and even those that have access may lack digital literacy skills to use the services they would want and need. These challenges are affect women and girls in particular, often due to conservative sociocultural norms and existing gender inequality in their communities. To better enable displaced people, including women, to make use of Internet connectivity to achieve their priorities and make informed choices, the Office of the United Nations High Commissioner for Refugees (UNHCR) has trialled approaches to enhance basic digital literacy in Indonesia. A pilot was launched to use interactive voice response (IVR), a technology that enables humans to interact with a computer-operated phone system, to deliver basic digital literacy training through short, recorded modules that participants accessed on mobile devices.

Evidence show that IVR works in setting where functional and digital literacy are low, and it provides a way to reach individuals remotely at convenient times and using a tool they have regular access to. Each lesson was no longer than five minutes and included an introduction, key messages and a wrap up. The lessons were adapted to the context of refugees and asylum seekers in Indonesia and the common challenges to access and use the Internet. The lesson modules included some specific themes on digital literacy training related to gender, and some of the modules were made particularly for the benefit for women and girls. The module related to privacy and protecting personal information online was designed to help people to avoid common risks women often face online. One module focused on online safety for children, and another tackled myths that the Internet is only for some people and focused on how the Internet can help women deal with issues they face in everyday life.

The design of the curriculum made use of existing materials on digital literacy and focused on basic skills. The aim was to reach and assist individuals with very little access to and opportunity to use mobile devices and Internet services, including people with limited functional literacy, those who do not own a phone and those who do not have a regular connection. Lessons were delivered each week for eight weeks. It was not necessary to go through all lessons in sequence; each lesson stands alone, and this allowed participants to focus on what was relevant to them.

Before the start of the project, community leaders and refugee volunteers explained the purpose of the project to members of their community and recruited participants for the pilot. This was an important step to explain how the training would be delivered and for people to expect calls from UNHCR for this purpose. Despite IVR being simple for users to navigate, most people who were participating were unfamiliar with the technology and it was important to explain how it worked. Women were given priority in the selection, which led to 60 per cent of participants being women. The participants included heads of household, older women and other vulnerable people of different nationalities.

The pilot demonstrated that IVR might be an alternative tool to support digital literacy as part of a broader programme that involves other ways of designing and delivering training. Particularly in a context where face-to-face interaction is limited, it might be used to broaden the reach of training with the necessary introductions though it has its own limitations. With short modules that focus on key challenges for individuals, development of the training benefits from being co-created with displaced individuals to achieve high relevance and context specificity. Interest remained high among women and the overall completion rate by women remains higher. UNHCR Indonesia is expanding its work on this by working with efugee-led organizations and refugee representatives as well as youth and female groups to create digital literacy modules and facilitate training of trainers, to develop a pool of trained facilitators to train other refugees, targeting both illiterate and literate groups.

Our story: Women in Tech Maldives

The story of Women in Tech Maldives began with the question: "Are we the only women working in the technology sector?". Four years into the journey, they have made great strides towards securing a foothold in science and technology for girls and women in the island nation. Their strength was leveraging digital

technologies to increase women's financial independence, increase gender equality and empower women.

Much like the rest of the world, there are still misconceptions that technology is unsuitable for girls and women, and that they are not welcome in this sector. Women in Tech Maldives strived to change that. What began as a small community of passionate women from the technology field has become a national movement and has proven the misconceptions wrong through a variety of initiatives to build information and communications technology (ICT) resilience among women and girls.

Women in Tech Maldives aims to accelerate the growth of women's participation in science and technology sectors by creating opportunities that foster innovation and promote women's leadership. It aims to inspire and empower more women to join the ICT sector and celebrate women's achievements.

Even though Women in Tech Maldives started with great enthusiasm, they were initially confronted with challenges such as the Government's lack of commitment and focus on improving the technology sector and the lack of opportunities and resources in the country. The population of Maldives is scattered across 200 inhabited islands, making it difficult to reach out to people to conduct programmes and meet objectives. Leveraging technology for women's empowerment was a foreign concept, and gender stereotyping was deeply rooted in the technology sector.

Operating as a grassroots organization, the challenges they faced did not diminish their efforts to increase the participation of women in the ICT sector. They continued to make profound shifts in their responses and approaches, starting with small-scale programmes with limited resources. They adapted to the situation and delivered within their limitations. The results of the programmes spoke for themselves, creating confidence in their abilities and opening up many more doors and opportunities.

As they progressed, they incorporated a broader connected approach to reaching women across islands. Partnerships and collaborations with the Government, the private sector and communities helped to increase awareness and find more opportunities for women to excel in technology.

Women in Tech Maldives showcases women's work and celebrates prominent days of technology. These efforts have created a new culture for the island nation, linked to the rest of the world, that values the efforts of people working in science and technology sectors. This initiative has opened more avenues for growth through international partnerships.

The organization and its initiatives focus on areas including computer science, data and gender diversity. They are now identified as significant players in sector development, proven by their involvement in consultations with many Maldivian government and non-government organizations in these fields.

This is part of the Womenintechmv's initiative on coding for girls, the "Code for Climate program."

Today they have more than 15 critical programmes, including programmes on science, technology, engineering and mathematics (STEM) awareness; cyber security awareness; skill development awareness; digital skill development; and women empowerment through digital literacy.

Programmes such as the NextGenGirls Virtual Innovation Tour are a gateway to introduce young girls to future career paths and organizations in the ICT field.

To empower girls and students with digital skills, Hour of Code was introduced to more than 10,000 students across the country and mentors and teachers were trained.

Through their signature programmes, Girls to Code, Girls in Data and Code for Climate, they are building technology talent in Maldives, specifically targeted to increase the number of girls in the field. Through all of these programmes, they aim to develop the skills of at least 60 girls annually. The Girls in STEM programme shows girls leaving school and their parents some of the available role models and career paths.

To build a resilient cyber community, the organization co-creates and implements national-level cyber security awareness programmes with international and local partners. CyberRakkaa, Cyber Smart, and Cyber Series for Organizations are designed to cover students, youth, parents, educators and civil society organizations.

Women in Tech Maldives aspires to increase the number of women in leading decision-making positions in technology sectors. They lead by example and hope to inspire women in other countries in similar situations to see the positive changes women are making for the betterment of a nation.

To sustain the work of Women in Tech Maldives there is continuous need for support from partners. They call upon local and international organizations to join in their efforts to reach better places within and beyond the country's boundaries. Having such support will help girls and women across the country to achieve their dreams.

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🌐 www.womenintechmv.org

🐦 @womenintechmv

📘 https://m.facebook.com/womenintechmv/

📷 @womenintechmv

Virtual safe spaces by refugee women-led groups in Malaysia

Intimate partner violence and child marriage are generally accepted within major asylum-seeking and refugee populations in Malaysia. Acceptance of these practices is deeply rooted in conservative cultural and belief systems, and displacement can aggravate their intersectional causes. Refugee and asylum-seeking women and girls have limited access to mobile phones or the internet. They often live inconspicuously, some in remote areas where electricity may not be available. As the Government of Malaysia is not a party to the 1951 Convention Relating to the Status of Refugees, asylum-seekers and refugees often exist along the margins of society. These factors impede their access to protection, information and services.

The outbreak of the COVID-19 pandemic exacerbated this situation. In order to curb the spread of COVID-19, movement restrictions were imposed by the Government. The resulting loss of livelihoods coupled with increasingly negative rhetoric in the media against asylum-seekers, refugees and migrant populations heightened the sense of isolation, stress and despair in populations of concern to the Office of the United Nations High Commissioner for Refugees (UNHCR), and vulnerable women and girls are among the most heavily affected. Increased incidents of gender-based violence (GBV) were reported within their communities. Asylum-seeking and refugee women were faced considerable challenges in accessing GBV response services, let alone gather/meet in a safe space.

In response, a virtual safe space was established by refugee women-led groups with inter-agency support during the initial phases of movement restrictions related to the COVID-19 pandemic. Hosted on platforms such as Google Meet and WhatsApp, safe spaces for refugee women and girls enable them to express their concerns and challenges, receive psychosocial support, share important information and access other forms of support.

Photo credit: UNHCR/Victor Chan

At the onset of lockdown measures, a research team from the University of New South Wales (UNSW) held an online discussion with refugee women participants in their project entitled "Refugee Women and Girls – Key to the Global Compact on Refugees". The UNSW team had built a close rapport with the refugee women over several years while conducting reciprocal research consultations under this project. The refugee women requested to be trained to provide psychosocial support to their peers as an alternative to the UNSW team funding a partner organization to provide such support. The refugee women highlighted advantages of this approach, including that women from their community could provide support in their own language without the need for interpretation.

Following remote training sessions organized by the UNSW team and UNHCR staff on GBV, child protection, protection from sexual exploitation and abuse, facilitation skills, as well as mental health and psychosocial support, some 16 refugee women focal points set up an online psychosocial support service delivered via regular online meetings with vulnerable women and girls from their community. They were equipped not just to manage the information discussed in the groups but also to refer GBV survivors (with their consent) to case management services and other professional support services. The focal points are provided with equipment (smartphones, laptops and Internet connectivity), and they receive a stipend.

The focal points receive crucial support from local non-governmental organizations (NGOs), namely Malaysian Social Research Institute, Asylum Access Malaysia and Tenaganita, creating an integrated network where resources can be shared, and information can be provided in a timely manner. A case referral system between the parties has been established to ensure that vulnerable women and girl participants receive the assistance and interventions they require.

At the start of the programme, the refugee women focal points worked in pairs and led three online psychosocial support sessions monthly. In 2022, based on feedback received from the focal points and their participants, this was changed to two support sessions per month. Following consultations with other refugee women on their preferred platform, these online psychosocial support sessions were held via WhatsApp and Google Meet. While this method reaches women who have access to mobile phones, those without mobile phones can meet up with others in small groups. Some groups meet in refugee community centres, while other groups meet virtually. As the programme has continued from 2020 through to 2022, more refugee women have been trained and equipped to come on board as focal points, while group members are regularly refreshed in order to expand the reach of the services.

Photo credit: UNHCR/Patricia Krivanek

The focal points meet with UNHCR and local NGO partners once a month for a debrief. This provides a platform for the focal points to share the issues of women and girls in their group, gain insights into the challenges and receive information on queries arising from women and girl participants. The focal points, UNHCR and NGO partners are regularly in contact via email and WhatsApp to ensure the focal points are heard and properly supported.

Photo credit: UNHCR/Victor Chan

As a result of this initiative, meaningful support has been provided to more asylum-seeking and refugee women. They are made aware of the services available during this uncertain period of time. To date, around 200 refugee women and girls have benefitted from the safe space initiative, while 150 vulnerable persons received assistance through the referral system. Furthermore, the 16 refugee women serving as focal points have developed new skill sets, which has bolstered their confidence, self-esteem and ability to lead. The focal points are empowered through regular capacity-building opportunities, which were expanded in 2022 to include the participation of group members.

WFP

World Food Programme

Good practices for gender transformative programming in Bangladesh

Safety nets for women and their families, women economic empowerment and digital financial inclusion

The World Food Programme (WFP) provides technical assistance to the Government of Bangladesh in the planning and implementation of the two major national safety net programmes: the Mother and Child Benefit Programme (MCBP) and the Vulnerable Group Development (VGD) programme, implemented by the Ministry of Women and Children's Affairs (MoWCA). Social protection accounts for 16.75 per cent of the national budget and 2.55 per cent of gross domestic product (GDP) for the fiscal year 2022/23. The budget for the two programmes constitutes 72 per cent of the budget of MoWCA. The size and reach of these programmes give them the potential to deliver impact at scale and address gender inequality by providing assistance to women with the greatest needs (including pregnant women and mothers of infants and girls).

The programmes support women and their households with fortified rice, a one-time grant for investing in income-generating activities and access to financial services. Women are engaged in the decisions around the use of the resources, and they are sensitized to their rights and entitlements.

The primary beneficiaries of both MCBP and the investment component of VGD are women age 18 to 49. The programmes intend to reduce existing gender inequalities through increasing women's access to and control over resources and enhancing their knowledge and skills on nutrition, gender equality, gender-based violence, women's empowerment and entrepreneurship on livelihoods. To improve the targeting and coverage of the safety net programmes a digital self-enrolment process has been established at the local administrative level with sensitization support from non-governmental organizations (NGOs). WFP supports the transition from a classical top-down targeting approach to a more participatory targeting method defined as Self-targeting method, where participants and communities identify eligible women. This transition permitted to reduce the exclusion error to significantly. Women can self-enrol by registering through a digital platform and will be enrolled in the programme if they qualify. To date, VGD and MCBP are being implemented under 68 Upazilas (district sub-unit), reaching 100,000 women.

Women beneficiaries of MCBP in rural and urban areas received monthly cash transfers and training to promote maternal and child nutrition, while the investment component of VGD supported women and their households with a monthly ration of fortified rice, a one-time grant for income-generating activities and skills training.

The government-to-person (G2P) payment system provide direct payments to mothers' preferred bank account – enhancing women's inclusion in the formal financial sector as well as control over the assistance they receive from the Government.

In both programmes, women control household income and expenditure. Evaluations showed that the women enrolled in VGD had enhanced decision-making capacity within their families and communities. They became more confident and socially empowered through networking with different public and private entities. Women's economic empowerment through financial inclusion is a key aspect of the safety net programmes, monthly cash transfers and entrepreneur training. Technical skills training focusing on women in urban areas contributes to women's economic empowerment.

As well as providing support to make MCBP and VGD more nutrition-sensitive, WFP is working with MoWCA on the development of gender- and age-responsive management information systems. Through technical assistance to the Bangladesh Bureau of Statistics, WFP will also continue to optimize the targeting of programmes and enhance the availability and quality of data related to the food security and nutrition outcomes of social protection programmes.

To address beneficiary exclusion errors, WFP supported the redesign of enrolment processes for MoWCA social safety net programmes, enabling 300,000 women to self-enrol.

The databases of MCBP and the investment component of VGD are separate, but both include age and sex disaggregated data for the women enrolled in the programmes. Work is ongoing to expand the MCBP database to include age and sex specific data of children who are also considered as primary beneficiaries.

To adhere to the data protection standards, access to the database is very restricted, however, with prior approval by MoWCA, aggregated demographic information on the beneficiaries can be made accessible. To further strengthen safe data management, data protection assessment is ongoing by a WFP consultant in coordination with MoWCA. The assessment findings will be used to inform WFP and government programmes to minimize data protection risks.

Digital and Financial Inclusion and Women's Economic Empowerment

A new safety net, the Vulnerable Women's Benefit (VWB) programme, is currently under development and targets women in reproductive age in urban areas. The World Food Program (WFP) Bangladesh is in the process of designing the programme with Ministry of Women and Children Affairs (MoWCA). The overall aim is to ensure that the essential needs of vulnerable women (including food and nutrition needs for themselves and their families) are provided. Additionally, the the digital cash transfer programme helps to improve resilience and overall livelihoods through the creation of a more accessible and an enabling financial ecosystem.

The safety net will provide monthly cash allowance for poor women through a government-to-person (G2P) payment system. Through the system women receive payments directly into their preferred account – the transfers support women's food and nutrition security while also enhancing women's inclusion in the formal financial sector and control of resources and thus contributing to their economic empowerment. To inform the design of the VWB programme, a situation analysis aims to investigate and understand the current situation, potential and possible challenges and barriers to digital financial inclusion, women's economic empowerment and digital cash transfers.

The Government of Bangladesh has enacted gender-sensitive policies and social programmes to empower women and improve their living standards In this context, WFP and MoWCA commissioned a study to understand the existing conditions of women's empowerment, key stakeholders in the allowance disbursement process, barriers and enablers of digital financial inclusion and what interventions can help vulnerable groups to access and use digital finance solutions.

In order to tackle all the major challenges, a three-step recommendation model is suggested, consisting of (1) awareness and sensitization of beneficiaries and their family members to promote women's participation in economic activities, (2) building digital capacity through an integrated support system to equip vulnerable women with the necessary knowledge and technical assistance to access and use digital financial services and (3) designing innovative digital financial products suited to the needs of vulnerable women to encourage vulnerable groups to access, adopt and repeatedly use digital financial products.

As directed by the National Social Security Strategy (NSSS), the study aims to roll out the Vulnerable Women Benefit (VWB) programme, which will replace the VGD programme in January 2023. DWA and WFP are working together to select 1 million vulnerable women throughout the country to receive the benefit. In the process, the programme design and implementation strategy are being reformed. Learnings and experience from the joint MoWCA and WFP investment component of the Vulnerable Group Development prgramme will also contribute to the transition from the VGD programme to the VWB programme

Supported by the Bill and Melinda Gates Foundation, WFP is working closely with MoWCA on strategies to help achieve a greater and sustainable impact for these women through large scale G2P payments. Therefore, this project will help the Government of Bangladesh to identify avenues to allow greater access and usage, and create more benefits for these women through digital financial products and services. To achieve sustainable impact, it is crucial to build women's understanding of digital payment products and services offered by different agencies and outlets, and tie digital payment products to existing livelihood opportunities.

The case studies were contributed by Aradhana Srivastava and Foyzun Nahar from WFP

Working across the humanitarian-development and peace nexus by increasing women's resilience to climate change

Climate change is the critical issue of our lifetime, and events in 2022 provided a stark reminder of the impacts of climate change, especially in Asia and the Pacific. Natural disasters created humanitarian situations across the region, impacting hundreds of millions of poor, vulnerable people, especially women and girls. It is well understood that women and girls face greater obstacles when trying to adapt to climate change; they suffer greater economic repercussions, they must bear increased unpaid care and domestic work when disasters hit, and, on top of all this, they are more vulnerable to potential violence triggered by crisis.

To address these inequalities exacerbating the impacts of climate induced crisis, UN Women and UN Environment, with generous funding from the Swedish International Development Cooperation Agency, are working across the humanitarian-development and peace nexus to increase women's resilience.

Integrating sex, age and disability disaggregated data into Viet Nam's disaster risk management policies

The Viet Nam National Disaster Management Authority (VNDMA) has developed natural disaster monitoring systems, infrastructure, laws and policies, manuals and guidelines, and science and technology on disaster prevention and control. In particular, since 2018, a natural disaster monitoring systems has been developed to integrate monitoring information in real and near-real time (such as hydro-meteorological data, reservoir data, ship on sea data ...) combined with existing data on natural disaster prevention works, dikes and local disaster prevention resources, giving an overview of the ongoing disaster situation. The system serves officials at the central and local levels in disaster monitoring and supervision.

The VNDMA has started integrating sex, age and disaggregated data (SADDD) into the national disaster risks database. Under the EmPower project, UN Women has helped to adopt national indicators from proposed international and regional indicators. In 2021, the collection of the SADDD database was piloted in the provinces of Da Nang, Lao Cai and Quang Tri, Ha Tinh. The indicators capture various aspects of exposure to disaster, vulnerability, coping capacity, human, physical and economic impacts as well as access to health services, household decision-making and women's political leadership. The implementation will be standardized and replicated in other disaster-prone areas. The agency is further improving the database on socio-economic factors and developing the tools for data management, data analytics, data visualization, with datasets covering a longer period to better support evidence-based policy, programme and implementation.

Female farmer in Viet Nam/ UN Women

Climate resilient farming for women farmers in Bangladesh

In partnership with Practical Action, the joint project between UN Women and UNEP 'EmPower' provided capacity-building to women farmers, women-led civil society organisations (CSOs), and the most vulnerable women on gender-responsive climate resilient agriculture. The training aims to enhance their knowledge on climate adaptive crops, marketing and early warning and digital extension service.

Smallholder women farmers in the northern and coastal area of Bangladesh mostly depend on homestead areas for their vegetable demand. Growing vegetables on homestead during monsoon season is very difficult, with frequent flooding leading to excessive soil moisture and waterlogging. Homestead farming is often a female-managed farming system, although homestead land may belong to men. Women have relatively more control of homestead farms and their irrigation efforts. Therefore, any kind of technology introduced in homestead farm irrigation must be gender sensitive.

Four types of farming techniques to grow vegetables were shown to vulnerable women farmers in Kurgiram and Satkhira districts. These projects reached women farmers with early warning and agro-advisory messages via their cell phones, which was an effective way of reaching them in remote locations. The project successfully connected the women farmers to the National Agricultural Helpline for digital extension services and access to voice message advisory services.

The following techniques are low-cost and convenient methods for start-ups. The techniques are advantageous for females headed households and elderly-headed households due to their low physical requirements and feasibility in homestead areas.

Hanging-type farming techniques for climbing vegetables in flood and saline-prone areas

Vine type vegetables in hanging gardens

In the coastal and flood prone districts of Satkhira and Kurigram, hanging-type gardens, using a low-cost earthen pot was a suitable farming option. Practical Action worked with 30 women participating households in five unions and trained them in hanging gardening structure preparation, soil material preparation and species selection. The species grown included bottle gourd, ash gourd, cucumber, water, sponge gourd, long-yard bean, country bean, bitter gourd and more. The results of the first production cycle growth of the plants to date were satisfactory.

A technique of adjusting a bamboo platform above the flood water was used. In the dry season, it requires frequent watering and in the monsoon season requires less irrigation. The use of mulches (straw, dry leaves, etc.) in the dry season was useful to reduce water loss through evaporation and the regular application of compost (200-250 gm in 15 days intervals) was essential.

Year-round chilli production using the ring method by women farmers

Chilli seedling transplanting in cement ring

Chilli production can bring great value for homestead farmland utilization, particularly for women in climate-stressed areas. Chilli farming was identified as a potential sub-sector to empower women in riverine and cyclone-affected areas as it can tolerate high salinity at the fruiting stage. Consequently, there was a great potential to enhance chilli production in the coastal saline area. As chilli is susceptible to drought and flood conditions, it needs special techniques to grow in a risk-free way. It is identified as an important spice for daily consumption and a cash crop for women.

Constructing a cement ring-based semi-permanent structure for vegetable planting was found a suitable option for flood and salinity-prone areas where waterlogging conditions are prolonged. By adjusting ring height above flood water, farmers can protect their plants. A pitcher irrigation technique was also installed to supply water. This technique required more care compared to raised bed farming, as the nutrient source and root spreading were limited. Therefore, 200-250 gm compost application in 15-20 days intervals was important for good yield. Mulching in the dry season helped to increase water use efficiency. Putting sand or bricks in the lower part of the ring was important to ensure proper drainage in the monsoon season, and regular hand-picking of insect and pest-affected leaves was important for plant health.

Year-round vegetable cultivation in sacks

Brinjal, chilli and bottle gourd plants in sacks

Successive cyclones made communities poor in Satkhira district, as they have less access to economic opportunities particularly during the monsoon season. Growing vegetables in the open field in the monsoon season is very difficult as most of the vegetable crops cannot tolerate excessive soil moisture as well as high salinity. To address this problem, a process known as sack cultivation was trialled. It is done by adjusting the sack height above the mud level. Each of the sacks is filled with soil and cow dung which is mixed in a 2:1 ratio, in addition to wood ash. A small portion near the bottom of the sack is filled with dry leaves for holding moisture. Bricks or gravel are placed at the very bottom for good drainage. Lastly, using green manure with fresh water (ratio of 1:1) once or twice a week enhances the fast growth of plants.

The performance of sack cultivation was studied to understand the scope and benefits through economic viability and risk mitigation strategies. A trial was run between November and December with 25 mainly female farmers, who tested this technique with an average of 1-3 sacks. Plants such as brinjal, bottle gourd, cucumber, pumpkin, green chilli, creeper vegetable, cucurbitaceous plant, okra, beans were grown in the sacks. The trial was very successful, and additionally was shown to cause less disruption to the local ecology and ecosystem.

Drought season irrigation for fruits and vegetables

Pitcher Irrigation installation in ring

Women in the coastal area usually struggle to bring water from channels and ponds for farming activities and drinking purposes, particularly during the dry season. Rainwater captured during the rainy season in the ponds and channels is used for farming irrigation, however once these sources dry up, women often have to walk far distances in order to collect water.

In order to resolve this issue, women farmers in the target coastal communities were trained and supported on pitcher irrigation techniques to irrigate their brinjal, bottle gourd and lemon trees. Pitcher irrigation is a method where a crop is irrigated through a small hole made in the bottom of an earthen pitcher. Water seeps out of the buried pitcher through wicks onto the plant. Pitcher irrigation, a traditional system of irrigation alternative to drip, is the latest advancement of the localized method of irrigation and found suitable where the salinity of irrigation water and soil becomes the constraint besides water scarcity. Pitcher irrigation addresses the scarcity of irrigation water for vegetables and fruit plants in saline and drought-prone areas to increase the productivity of the land. The technology is more suitable as it reduces hard labour and time in collecting water.

The farmers of Kurigram and Satkhira were happy to see the simple technique which saved water irrigating their crops, and further saved their time and labour in collecting water from distant sources during the dry season.

For more information, the full briefs of each of these techniques can be found here.

"One size doesn't fit all: Blockchain-based vouchers provide choice to address period poverty"

With the dual objective of responding to period poverty in Bangladesh - or the struggle many socio-economically vulnerable women and girls face when trying to afford menstrual products as exacerbated in the wake of the COVID-19 pandemic- and helping break existing taboos about menstruation, UNFPA and its partners are implementing a menstrual health and hygiene (MHH) project for women and girls in two urban slums of Dhaka using Cash and Voucher Assistance (CVA) through blockchain technology. The pilot started in February 2022 for close to 3,500 women and girls of menstruating age.

Women and girls reported facing significant financial barriers to purchase menstrual products, with this important need not being prioritized within their households. Through WFP's blockchain-based digital system called "Building Blocks", UNFPA ensures women and girls recipients are able to redeem monthly vouchers against various brands of sanitary pads and belted pads.

As with any other UNFPA CVA intervention, CVA is not implemented in isolation but rather integrated as part of a broader, holistic programming strategy. In this approach, recipients receiving CVA for MHH also participate in training and receive regular information on menstruation. This contributes to lasting social and behavioral change related to menstrual health and hygiene.

In the two slums of Bashantek and Duaripa, UNFPA, WFP and their implementing partners BRAC (Bangladesh Rural Advancement Committee) and CWFD (Concerned Women for Family Development) have coordinated and harmonized assistance to ensure a multiplied impact. While WFP covers for the food security needs of the most socio-economically vulnerable households in the slums through cash distribution, UNFPA provides an additional transfer to households including women and girls of menstruating age, tailoring its transfer amounts to the number of women and girls falling in that category. Recipients receive the transfers from both agencies through the same blockchain-based card and are then empowered to make purchases according to their preferences in 21 local community shops who have accepted to join the project.

Building Blocks blockchain app for menstrual products delivery

Shopkeepers have the Building Blocks application on their phones. When the women and girls come to the shops for their purchases, the shopkeepers scan the QR code on the card and can directly see their entitlement (amount against which to make the purchases) in the system. The women and girls choose their preferred products, provide their pin code for the purchase and the transaction is recorded directly in the Building Blocks system. The transaction is connected

to an inventory system and provides confirmation to the shopkeeper that the transaction is valid; she/he then hands out the selected menstrual products, with no money changing hands. Data entered into the blockchain cannot be edited or deleted. Transactions can be verified for audits and for different parties to produce invoices and payments and to view transactions.

The fact that all a shopkeeper requires to participate in the project is a smart phone connected to the Building Blocks app means that very small shops are able to participate - shops that are located close to the homes of women and girls recipients and ones they are accustomed to using on a daily basis. Smaller community shops in the slums also provide more flexibility with long opening hours and the increased demand for menstrual and food products positively impact the local economy and on availability of menstrual products in the slums.

Female shopkeeper managing a recipient's purchase using the blockchain-based app @UNFPA

No one-size-fits-all for menstruation

There is no "one-size fits all" when it comes to the deeply personal nature of menstruation. As women and girls prefer to meet their menstrual needs in a variety of different ways, flexibility was built in the project through the Building Blocks to allow for a varied choice of menstrual products. Based on feedback collected from women and girls in Dhaka, belted pads were recently added within the purchase options as it is a menstrual product that they regularly use.

When asked why she was choosing a combination of different menstrual products at her nearby shop, one of the female recipients from the Bashantek slum replied

"I get extra thick sanitary pad packs and the thin ones. It is my will".
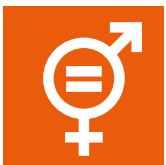
Breaking taboos

In Bangladesh, patriarchal systems of control, stigma, social exclusion and entrenched taboos around menstruation create obstacles for women and girls to exercise their basic right to managing their menstrual health with dignity. It translates with women and girls having to stay at home, being unable to work or play, or eat certain types of food during their periods.

The project leads inclusive consultations to challenge harmful social norms on menstruation and pushes for the normalization of the discussion about periods as a natural process for women and girls. Many communities believe that menstruation is a sign that girls are ready to get married. A one-day training is also provided to each woman or girl recipient. The training provides education on menstrual health and hygiene and addresses misconceptions. Beyond the discussion about menstrual product options and their use, the project informs girls and their families about the consequences of early and forced child marriage. Given the unique hierarchy that exists in these neighborhoods, UNFPA is conducting many community meetings not only with the adolescent girls but also with community leaders to share what UNFPA is doing through the project and to get their feedback. In addition, together with their purchases at shop level, women and girls recipients receive a different information leaflet each month in Bengal language with self-explanatory images for those who cannot read.

Way forward

Based on the feedback from women and girls, as well as partners, UNFPA continues to make real-time adjustments to the pilot project. UNFPA is exploring options for the scale up and sustainability of this approach. Menstrual health and hygiene have become even more urgent in Bangladesh because of the increasing impacts of climate change. More intense storms and heavier rainfall are making pollution and sanitation in urban slums even more challenging. UNFPA is committed to continue supporting women and girls to manage their menstrual health and hygiene so they can better cope with the inevitable consequences and disruptions of climate disasters.

GENDER

IN HUMANITARIAN ACTION

Asia and the Pacific