

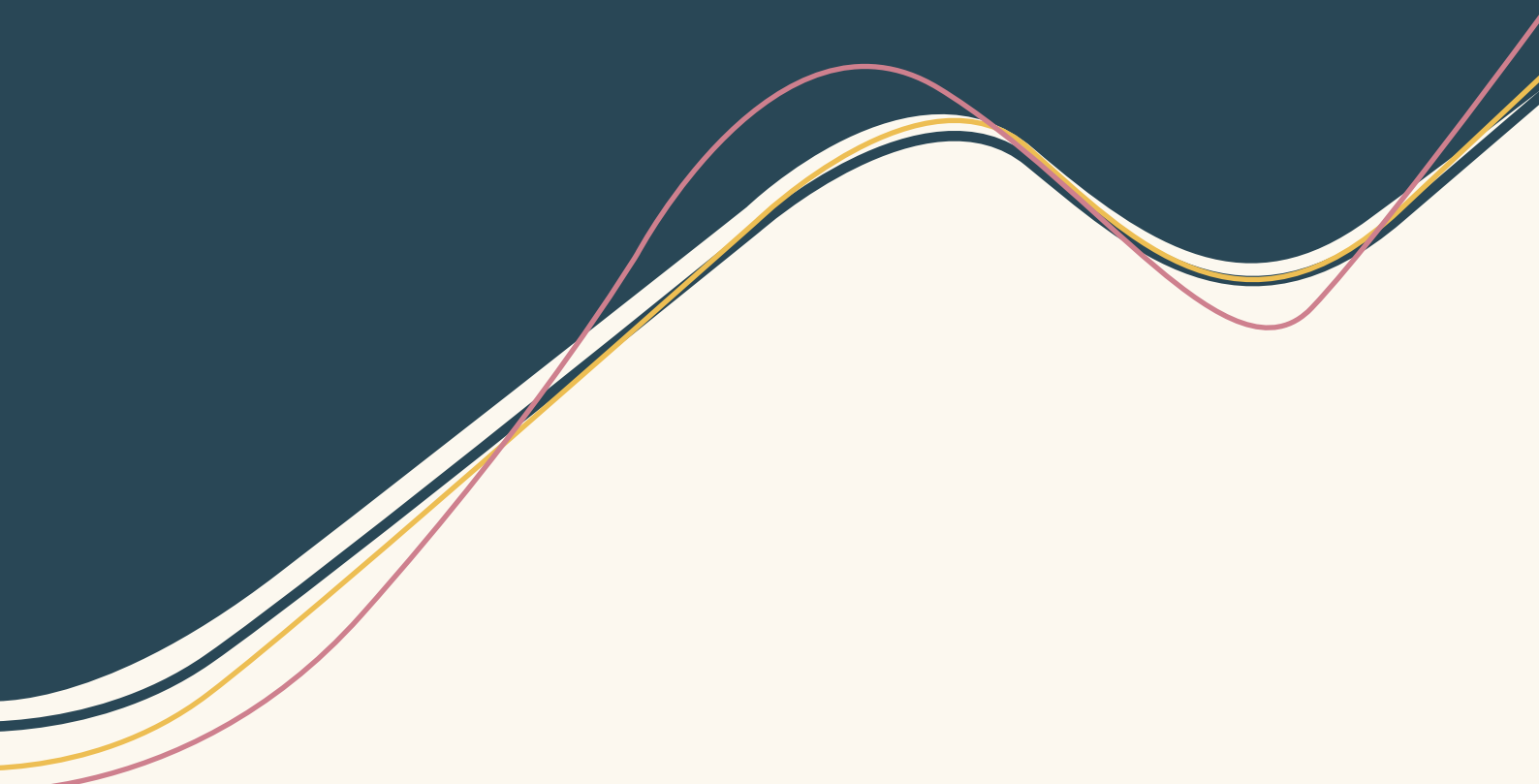


REEMI

CREATING ZERO-WASTE MENSTRUAL  
HYGIENE MANAGEMENT SOLUTIONS

RESEARCH ON INNOVATIONS AND SOCIAL STIGMA IN BANGLADESH





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# BACKGROUND

## MENSTRUATION IN BANGLADESH

Inadequate menstrual hygiene management (MHM) has been increasingly acknowledged as a global health concern that has been under-prioritised by public health practitioners and the humanitarian sector<sup>1</sup>.

In a recent gaps analysis published by Elrha, MHM has been recognised as one of the top 10 gaps in humanitarian settings concerning people affected by crisis<sup>2</sup>. In many low income countries girls and women<sup>3</sup> rely on poor quality materials such as old cloth, cotton wool, leaves and ash to manage their menstruation<sup>4</sup>.

In Bangladesh, around 65% of adult women use old cloth, repurposed from an old saree or similar materials<sup>5</sup>. The limited availability of private washing facilities means many women reuse material such as menstrual cloth without washing or drying it properly, but instead storing the damp cloth directly under their mattress or in a cupboard. This potentially leads to detrimental health and social consequences. Using unhygienic materials is associated with recurring urinary tract infections, missed days at school or work, infertility and disability as well as stress and anxiety. A study by the Water Supply Sanitation Collaborative Council in Bangladesh suggests that infections caused by using old cloth during menstruation lead to 73% of women missing work for an average of 6 days a month<sup>6</sup>.

In addition to the day to day challenges that menstruation presents to women and girls in Bangladesh, there are many social taboos and stigma attached to even discussing the topic, let alone women acknowledging when they are menstruating or even allowing any menstrual-related products being washed or dried, to be seen. Menstrual blood is seen as dirty, therefore in a culture that uses their hands for eating, even touching menstrual blood is stigmatised. This makes MHM even more difficult because it requires women to hide their management of it, and it exacerbates mis-information, anxiety and stress. Many girls have no knowledge or education regarding menstruation before experiencing their first period. In order to begin to change the stigma and taboos around menstruation, these cultural factors need to be taken into consideration.

In order to reduce the inherent shame that currently exists in Bangladesh culture, engaging men in the conversation around normalising menstruation as a healthy function of a woman's body is key. The intergenerational transfer of information from mother to daughter as well as improved education with both sexes to destigmatize menstruation will all need to occur in order to bring menstruation to a healthy topic of discussion.

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<sup>1</sup> Sommer, M., et al. "What is the scope for addressing menstrual hygiene management in complex humanitarian emergencies? A global review." *Waterlines*, vol. 35, no. 3, 2016.

<sup>2</sup> Lantagne, D., Yates, T., & Ngasala, T. (2021). *Gaps in WASH in Humanitarian Response: 2021 Update*. Elrha: London.

<sup>3</sup> Throughout this paper, we use the term 'girls and women' as a stand-in for all those who menstruate regardless of gender identity.

<sup>4</sup> Sumpter, C. and B. Torondel (2013): "A systematic review of the health and social effects of menstrual hygiene management," *PLoS ONE*, 8, e62004, 2013

<sup>5</sup> Bangladesh Bureau of Statistics. "National Hygiene Survey 2018." 2020.

<sup>6</sup> WSSCC. (2013). "Celebrating womanhood: How better menstrual hygiene management is the path to better health, dignity and business." London: Water Supply & Sanitation Collaborative Council (WSSCC).

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Elrha is a global charity that finds solutions to complex humanitarian problems through research and innovation. Visit [www.elrha.org](http://www.elrha.org) to find out more.

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We really value our cross-sector partnerships to create long-lasting and sustainable change.



Ministry of Foreign Affairs

## ABBREVIATIONS

BDT Bangladeshi Taka

DCE Discrete Choice Experiment

HIF Humanitarian Innovation Fund

iDE International Development Enterprises

Icddr,b International Centre for Diarrhoeal Disease Research, Bangladesh

LMU University of Munich

MHM Menstrual Hygiene Management

NGO Non-Governmental Organisation

USD US Dollar

WASH Water, Sanitation and Hygiene

WTP Willingness to Pay

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# I. EXECUTIVE SUMMARY

Reemi created several innovative solutions to reduce MHM waste and address social stigma and taboos in Bangladesh, which were distributed and evaluated amongst Bangladeshi garment workers in our research study. The research consisted of three pilot studies, with more than 1,700 phone interviews, 4,200 pairs of Reemi period underwear distributed, 260 washing and drying bags, and 100 pairs of reusable pads, across 724 participants.

Key obstacles blocking access to superior MHM products are largely explained by social stigma, and our findings demonstrate that interventions such as facilitated discussion groups helped overcome these social taboos. One major deterrent to accessing menstrual products is the shame felt when purchasing these products from men, as they are the dominant local shopkeepers in Bangladesh. This obstacle was able to be successfully addressed through peer discussion groups, where participants shared their personal experiences. Our research has shown that simple interventions such as facilitated peer discussions increased the uptake of modern hygienic MHM products. These groups, therefore, will be very important for product distribution on a wider scale, otherwise uptake will likely remain low and obstacles such as social stigma and cultural norms will not be addressed.

In addition to the interventions to address stigma around MHM, we also found the following results for our production innovations:

- **High desirability for each of the innovative MHM products.** The Washing and Drying Bags were observed through our research to have ratings as high

as 81 for the products on a Net Promoter Score (NPS). This is particularly notable for a stigmatised product.

- Our results show that the **treatment (education sessions) significantly increased the women's willingness to pay** for sanitary pads. The market price of disposable pads is around 40-60 BDT. The control group was willing to pay 90 BDT (~1 USD) for the MHM products. This increase corresponds to about 50% of the market price of pads (around 40-60 BDT).
- We found the **treatment increased the adoption of the anti-bacterial Reemi period underwear.** The uptake rates increased for the treatment group, they went from 71% (in the control group) to 81% (in the treatment group).
- After 6 months, only around 25% of women were still using cloth (down from 50%), pad use increased from around 60% to around 70% and around **70% reported using the Reemi period underwear.**

Our insights with the garment worker community have enabled us to understand the demand for, and barriers to, MHM in a population that has some purchasing power. Our hope is that these comprehensive learnings can be instrumental in breaking the silence around MHM and be a useful contribution to how health practitioners and humanitarians address the complex challenges of MHM globally.



## 2. INTRODUCTION

Reemi's research goal was to create holistic products for women in Bangladesh to manage their menstruation whilst reducing menstrual hygiene management (MHM) waste. Reemi developed several innovative, reusable products that replaced the need for disposable products, whilst also taking into consideration the cultural context and social stigmas in Bangladesh concerning menstruation. Appropriate education was provided to address these stigmas in parallel with the supply of MHM products.

A design thinking process was worked through to understand the needs of girls/women in Bangladesh. During the 'empathise' design thinking phase, it was discovered that many menstrual products, such as menstrual cups, disposable sanitary pads and conventional-looking reusable pads were unsuitable due to various cultural stigmas.


Local design partner, iDE Bangladesh alongside icddr,b, had previously spent time researching and interviewing women in rural communities to understand the washing and drying process of traditional cloth (nekra). Their findings exposed the washing (on the bathroom floor) and drying methods (in discreet areas due to the shame relating to needing to keep any menstrual-related products hidden, especially from men), were contributing factors to poor hygiene.

Three different pilot studies were undertaken to test for low-cost, sustainable, zero-waste menstrual hygiene

products; product A, a wash bag & dry bag, product B, reusable period underwear, product C, sustainably-based wash and dry bags, Product D, a redesigned discreet napkin-shaped reusable pad. The wash bag ensured the reusable cloth or other reusable products remained hygienic by being washed inside the bag rather than on the latrine floor. The dry bag ensured the products could be hung to dry outside in the sunshine whilst remaining discreet and private within the bag. All solutions were designed with discretion in mind, were low in cost, culturally appropriate and created zero waste.

To further support a positive environmental solution, products were designed to be made from materials as natural and sustainable as possible and also locally accessible. In the case of the Reemi period underwear, the gusset material was antimicrobial to reduce the risk of infections.

PhD candidates from the Department of Economics at the University of Munich used academic experimental research methods from the field of economics to further understand cultural barriers and stigma, including the use of facilitated group discussions, in order to address taboos. Strong partnerships across sectors were central to the research and a key component to the final learnings.



Reusable products are better for the environment; economically more sustainable, reducing the need to purchase products each month and allowing women to be more self-sufficient. Therefore, the hope was to create a product that was significantly cheaper than disposable alternatives in the long term.



## 2.1 GARMENT WORKERS

We chose to begin our work in the garment industry for the following reasons:

- 1) Positioning ourselves for scaling in the future, as this is a known barrier to humanitarian innovations.
- 2) Better understand demand and barriers to MHM from a population with access to a regular income.
- 3) Advice from leading humanitarian professionals regarding what is desirable in the general population will also be desirable in humanitarian settings.
- 4) Support a vulnerable population that provides economic opportunities for the greater population.

Although Reemi's work has not been in a typical humanitarian setting, working through a global pandemic has offered some challenges that may mimic or model similar challenges to a humanitarian crisis such as; unpredictable circumstances, the need for agile interventions, limited access to population, and safeguarding for vulnerable populations etc.



### 3. CONSTRAINTS ON MHM PRACTICES

Through interviews and feedback from local partners, the following issues became known constraints to current MHM practices in Bangladesh

*"One of the biggest and most neglected challenges presented by MHM programming is menstrual waste management."*

- ELHRA

#### WASTE DISPOSAL INFRASTRUCTURE

The disposal of menstrual waste is a serious issue in many low and middle income countries. For those that use a disposable menstrual product whilst menstruating there is the immediate question about what to do with the used material.

- A lack of infrastructure to dispose of the menstrual waste means many women drop used materials into pit latrines, or dispose of them by discarding them out windows; burning them, or burying them<sup>7</sup>.
- A lack of privacy also makes it difficult to dispose of used menstrual materials adequately. Many women dispose of their used absorbents in public spaces such as public toilets, rivers, or by burying them in the soil<sup>8</sup>.
- There are many public health concerns around these

inadequate disposal methods, for instance flushing menstrual products down the toilet can cause the blockage of sewage systems, throwing them into water bodies can contaminate water sources. Blood-soaked hygiene materials also pave the way for the breeding of pathogenic bacteria and viruses, including hepatitis and HIV, which may retain their infectious potential for up to 6 months even buried in the soil<sup>9</sup>.

- The waste problem is exacerbated by the fact that even if women can dispose of their used pads safely, they generate large amounts of waste that cannot be recycled. Given that pads contain large amounts of plastic and are non-biodegradable they do result in a large environmental footprint.

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<sup>7</sup> Sumpter, C. and B. Torondel (2013): "A systematic review of the health and social effects of menstrual hygiene management," PLoS ONE, 8, e62004

<sup>8</sup> Elledge, Myles F., et al. "Menstrual Hygiene Management and Waste Disposal in Low and Middle Income Countries—A Review of the Literature." International Journal of Environmental Research and Public Health, vol. 15, no. 11, 2018, 2562.

<sup>9</sup> Kaur, R., K. Kaur and R. Kaur (2018): "Menstrual hygiene, management, and waste disposal: Practices and challenges faced by girls/women of developing countries," 2018.

<sup>10</sup> WSSCC. (2013). "Celebrating womanhood: How better menstrual hygiene management is the path to better health, dignity and business." London: Water Supply & Sanitation Collaborative Council (WSSCC).

<sup>11</sup> Sumpter, C. and B. Torondel (2013): "A systematic review of the health and social effects of menstrual hygiene management," PLoS ONE, 8, e62004

## SOCIO-CULTURAL NORMS AND TABOOS

- Fear of others seeing menstrual waste, specifically menstrual blood.
- Strong stigma around touching menstrual blood.
- Not using one's dominant hand in the toilet due to eating protocols with the dominant hand.
- Fear of others seeing reusable menstrual products in the washing and/or drying process.
- Reusable pad shape clearly shows a menstrual product which deters the user from hanging pads out to dry.
- Drying lines are public and lack privacy.
- Difficulty accessing pads because they need to be bought regularly in a pharmacy, usually run by a man.

"Sometimes if I have access to a disposable pad, I wash it before throwing it away so no one sees the dirty blood."

- GARMENT WORKER

## HYGIENE

- Faecal contamination when reusable menstrual products are washed on shared bathroom floors with feet is a major problem. Touching menstrual blood with one's hands is taboo, hence the cleaning with feet.
- Bathrooms are shared with multiple families, and women and girls do not have safe and private places to wash products.
- Infections caused by using unhygienic cloth during menstruation leads to 73% of women missing work for an average of 6 days a month<sup>10</sup>.
- Reusable cloth/menstrual products often get stored in damp places such as under the bed exposing materials to mould. "Instead, they often store the damp cloth directly, usually hidden from sight such as under their mattress or in a cupboard"<sup>11</sup>.



## PRODUCTS THAT REQUIRE INSERTION

Through qualitative interviewing and empathy-driven experiences, menstrual products that required insertion were chosen not to be trialed due to the following learnings:

- Strong cultural stigmas exist around products that require insertion, with many believing such inserted products would break the hymen for unmarried women.
- Married women shared a fear of their vagina being widened if they used a product that required insertion. This fear was driven by cultural beliefs around sex.
- **A lack of basic health education resulted in concerns and confusion about the ability to urinate whilst using**

**a product that required insertion.**

- In many eastern cultures the dominant hand is used for eating and the non-dominant for hygiene and sanitation purposes. This therefore poses a difficult challenge when using an inserted product like a menstrual cup and inserting/changing this with the non-dominant hand. In addition, if these cultural norms did not exist, using the dominant hand to change the menstrual cup after eating food with chilli and spice, still poses an overlooked practical challenge.

## EDUCATION

**A lack of education is a significant constraint on MHM practices in Bangladesh, meaning menstruation never becomes normalised or discussed and therefore remains hidden and secretive, thereby becoming shrouded in shame:**

- **From our research, around two thirds of women in Bangladesh were not aware of menstruation before menarche and were not taught, neither in school nor by their mothers, about menstrual health management<sup>12</sup>.**

- Despite being part of the official school curriculum to teach children about menstruation, only 2% of women in Pilot Two reported having learnt about menstruation in school.
- When education is lacking on a subject matter such as MHM, a full picture of how to deal with menstruation in a hygienic manner and knowledge of basic anatomy causes myths and incorrect assumptions to abound.

## ROLE OF MEN

In Pilot One, it was found that women largely do not have full control over the household budget. Around half of all women report having to ask permission from their husbands to buy everyday items such as clothes or personal hygiene products. Around two-thirds of women were willing to forgo up to ৳300 BDT (US\$3.50) to receive money themselves, rather than the money going straight to their husbands. This is a hypothetical choice expressing the stated preference over receiving a certain amount of

money yourself vs. a larger amount going to the husband. The more money a woman is willing to forgo, the lower her intra-household bargaining power. This indicates that women have relatively little control over their household budget, and that preferences and beliefs of husbands could be affecting women's ability to buy menstrual hygiene products.

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<sup>12</sup>Bangladesh Bureau of Statistics, WaterAid Bangladesh and UNICEF Bangladesh (2020): "National Hygiene Survey 2018." ISBN: 978-984-34-9724-6.

# THE WOMEN LARGELY DO NOT HAVE FULL CONTROL OVER THE HOUSEHOLD BUDGET

## CONTROL OVER THE HOUSEHOLD BUDGET

Figure 1: Share of women asking for permission to make purchases

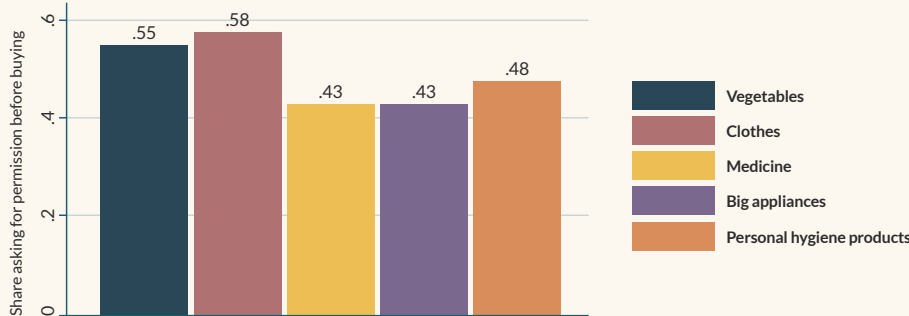
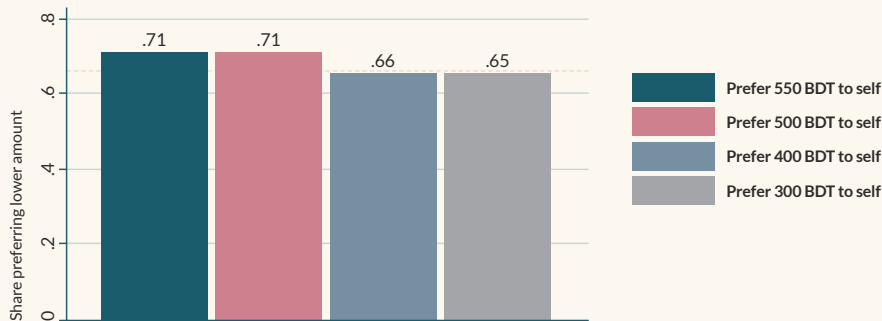


Figure 2: Preference over 600BDT to partner or lower amount to self



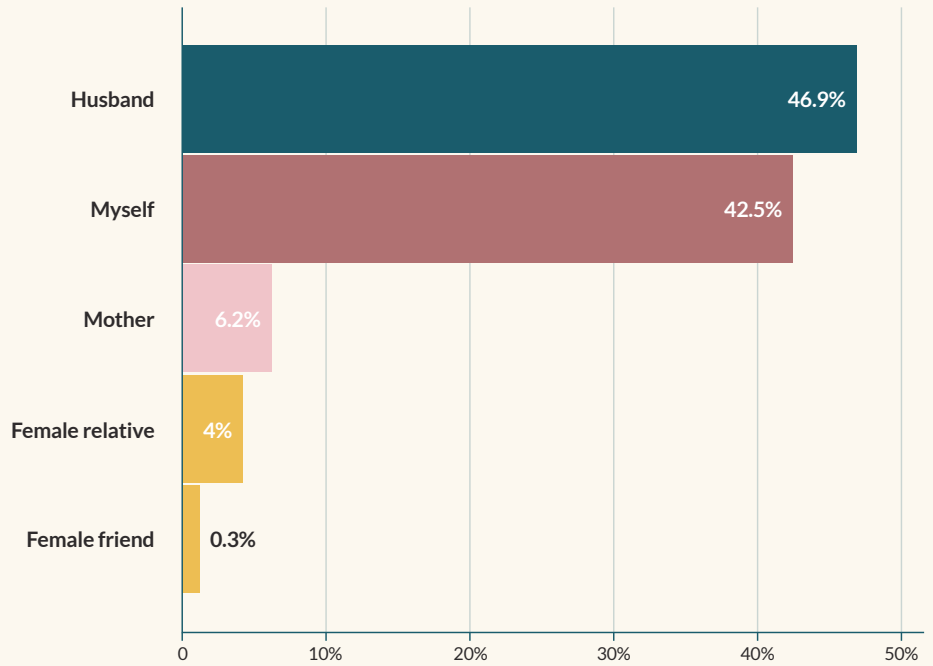
In **Pilot Two**, The existence of social stigma and restrictive social norms was shown to not only prevent women from adopting the use of pads in the first place, as shown in Figure 5, but also had negative consequences for those women already using pads. When buying pads in a small

store, other customers and the **male shopkeeper** are present and women may feel like they are being judged when purchasing the pads and may feel uncomfortable and embarrassed. We address the stigma the role of men have on women purchasing menstrual products in **Pilot Two**.



## SENDING THE HUSBAND TO BUY PADS

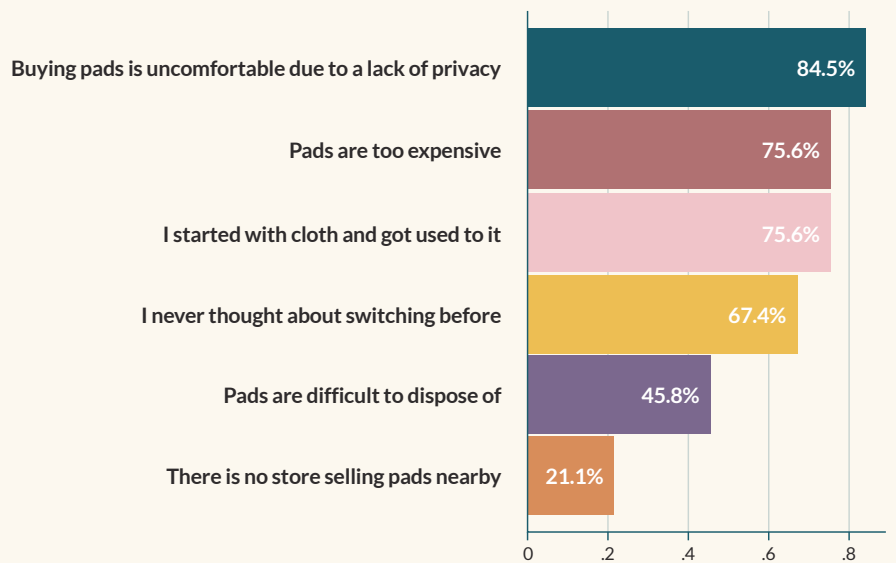
In **Pilot Two** we also found that of the women using pads, only around 40% actually buy the pads themselves. Many obtain them from a female relative, such as a mother or sister, and in fact around 45% send their husbands to collect them.



**Figure 3:** Share of women who use pads frequently reporting receiving pads from a given source

## SOCIAL NORMS AND STIGMA

In **Pilot Two** a subset of 128 women were asked four additional questions eliciting their level of agreement to different perceptions of stigma. Around half of the women agreed that they worry about what others think of them when purchasing menstrual products; feel dirty when they have their period or try to keep their period secretive, indicating a general discomfort with the topic. A much larger share, more than 85%, agreed that they feel ashamed when hanging their menstrual cloth outside to dry (even if it is clean). In addition to restricting the access to pads and preventing the adoption of modern hygienic menstrual products, the social stigma and norms also have repercussions on how reusable menstrual cloth can be washed and dried, because even washed menstrual cloth cannot be hung in the sunlight to dry. This is an important consideration for zero-waste MHM products.



**Figure 4:** Share of women naming a given obstacle as a reason for why they are not using pads frequently

In Pilot Two, 74.4% of women self-report that they feel uncomfortable purchasing sanitary pads if men are around and 52.2% self-report the need to cover their face when buying pads.

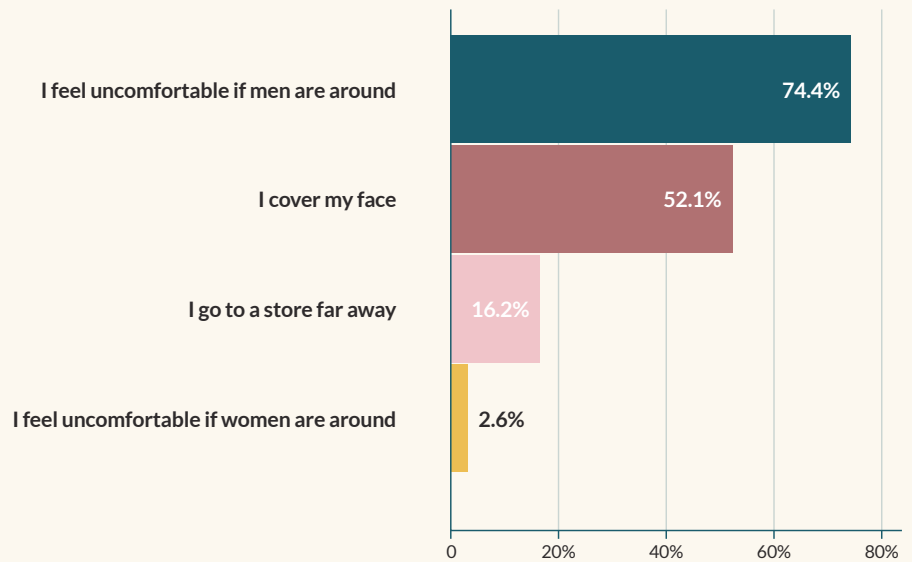


Figure 5: Share of women reporting a given behaviour when buying pads

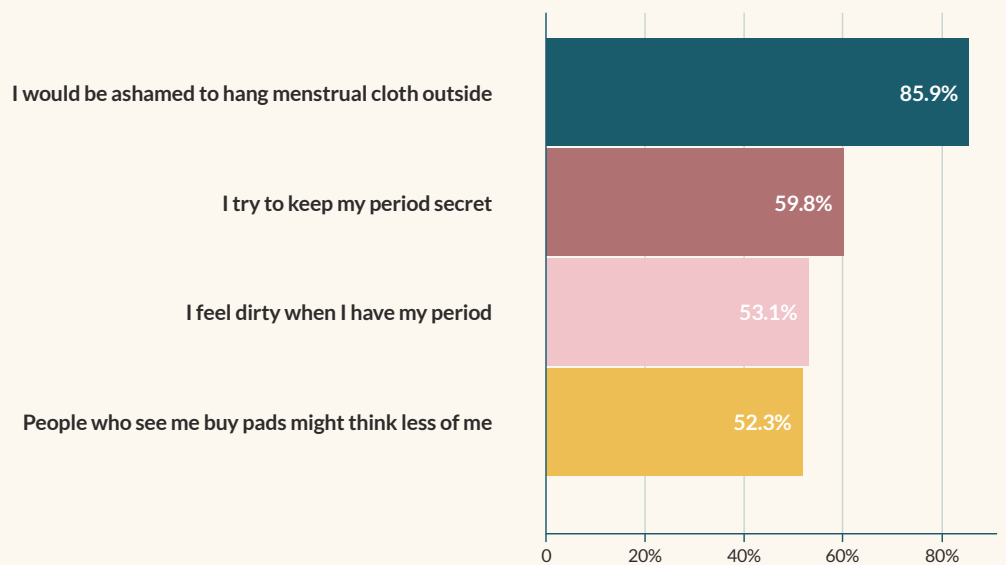
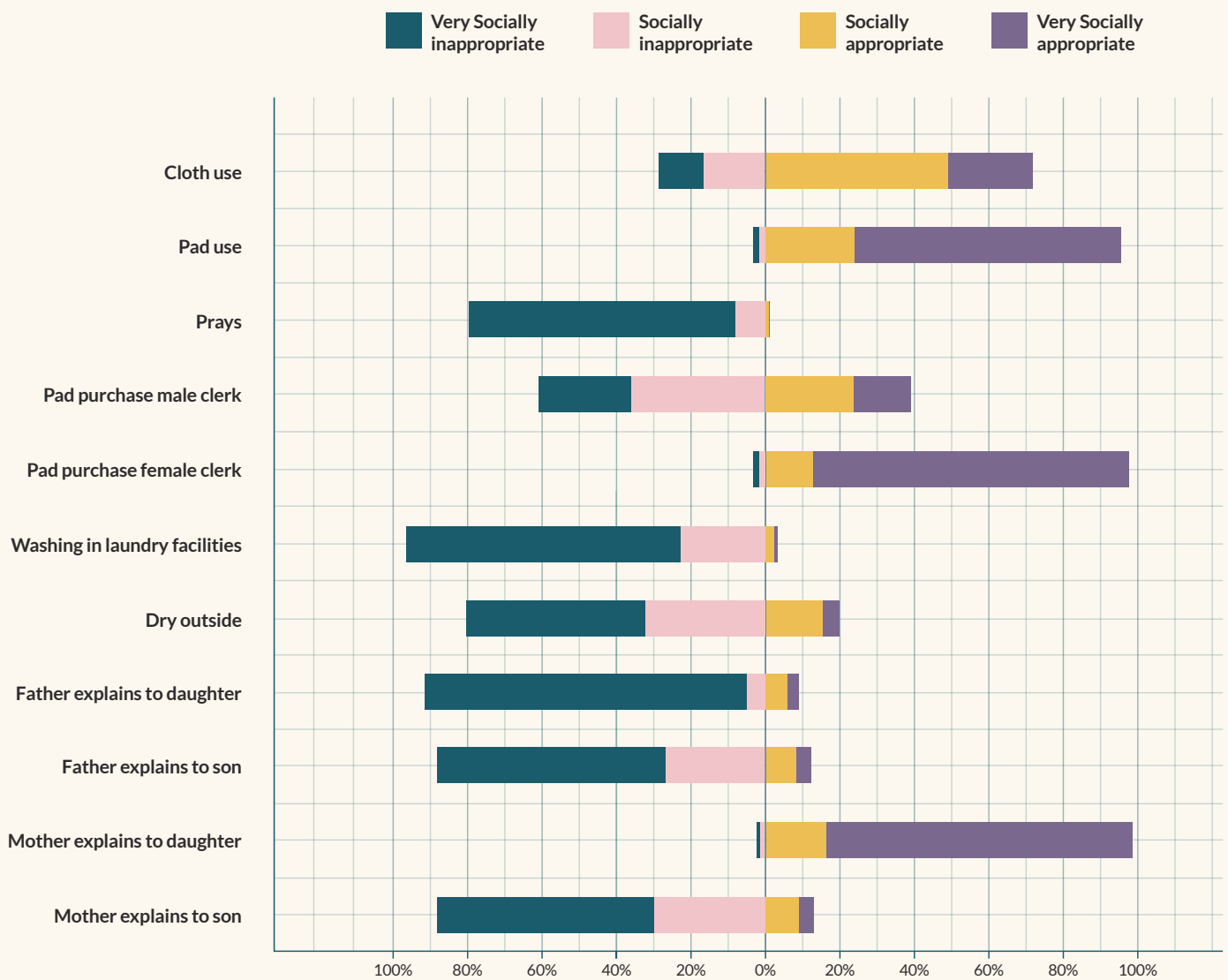


Figure 6: Share of women agreeing to a given statement about the stigmatization of female menstruation

In order to better understand social norms, the University of Munich used what's known as 'vignette studies' where women were presented with the description of a hypothetical scenario involving people other than themselves. In this case, they were asked to imagine a woman similar to themselves, who engages in certain behaviours. They were then asked to report their beliefs about what the woman's neighbours would think or say about this. The aim of this survey technique is to ensure that the women do not report their own opinions, but their beliefs about other peoples' opinions and reactions i.e. the perceived prevalent social norms. Figure 7 shows that the most restrictive social norms, i.e. behaviours the majority of women judged to be considered as (very) socially

inappropriate by the neighbours are: purchasing pads from a male shopkeeper; washing menstrual cloth with the rest of the laundry and drying it outside, and the discussion of menstruation between any parent and child other than between mother and daughter. While purchasing pads from a female clerk is not considered socially inappropriate, this is a purely hypothetical scenario, as almost **all shopkeepers in Bangladesh are male**. These findings pose an interesting question: if discussing menstruation with daughters is considered (very) socially appropriate, why does there still seem to be a significant gap in the transfer of knowledge about menstruation and available methods to manage, especially across generations? A question we further unpack in **Pilot Two**.



**Figure 7:** Share of women answering for a given activity if the neighbors would consider it very socially inappropriate, socially inappropriate, socially appropriate or very socially appropriate.

Through our research we found that social constraints such as the visibility of where the menstrual products are sold and the gender of the shopkeeper could act as obstacles preventing women from accessing MHM products. We cover this further in a discussion on discrete choice experiments in Section 5 Methodology under Study Design and Outcome Variables.





# 4. INTERVENTIONS AND INNOVATIONS

## PRODUCT INNOVATIONS

Reemi have created several menstrual hygiene product innovations in combination with local partners IDE and icddr,b to help women in Bangladesh manage their menstruation in a discreet, private and comfortable manner. There was a strong emphasis on zero waste whilst keeping in mind social stigmas and taboos within Bangladeshi cultural context.

### 4.1 DESIGN THINKING PROCESS

Reemi worked through the Humanitarian Innovation Guide which largely follows a design-thinking approach to innovation. This was used throughout this study to guide Reemi and partners in creating innovative zero-waste solutions to menstrual hygiene management.



Prior to this research, Reemi had spent two years working with local partners and being on the ground to understand some of the challenges faced by women in Bangladesh around menstrual hygiene management - known as the **recognition** stage. The **search** process then followed and Reemi came into partnership with iDE Bangladesh, Basha Boutique and Hop Lun factory to work on existing solutions and iterate the designs to be fit for purpose.

### THE INITIAL REEMI PERIOD UNDERWEAR ALREADY HAD FEATURES SUCH AS:

- An antimicrobial layer
- Absorbency level equivalent to two pads worth of blood
- Leak proof
- Regular underwear design

### THE CO-CREATION PROCESS LED TO THE FOLLOWING CHANGES:

- Use materials that wick away moisture, so the feeling of 'wetness' was less present
- Increase absorbency for the underwear to last 7-12 hours for garment workers who are sitting down all day
- Increase the length of the gusset
- Change the gusset colour to black, so that the blood is not visible
- Fast drying outer fabric for the hot, humid climate

### THE INITIAL DRYING BAG ALREADY HAD FEATURES SUCH AS:

- Not visible with bright coloured cloth inside
- Dark coloured fabric
- Fast drying features

### THE CO-CREATION PROCESS LED TO THE FOLLOWING CHANGES:

- Changed to a natural fibre that was locally sourced
- Increased the size of the bag to allow the user to use it for other discreet drying purposes, for example drying bras.

### THE INITIAL WASHING BAG ALREADY HAD FEATURES SUCH AS:

- Scrubbing pad
- Clear panel for visibility of water
- Drawstring closure
- Rectangular shape

### THE CO-CREATION PROCESS LED TO THE FOLLOWING CHANGES:

- Altered shape for better washing
- Amended position of the drawstring
- Increased length of the bag for better scrubbing action once drawstring is closed
- Each of these products were piloted at different iterations and with the analysed data this has contributed to minor design tweaks prior to scaling these products.

### THESE CHANGES INCLUDED:

- A full gusset style was trialled with extra absorptive and leak proof layers, however this proved too hot for the climate.
- Final product was a mid-rise, lightweight, black period underwear with additional layers of antimicrobial microfiber in the gusset and a fast drying outer fabric.



## 4.2 REEMI PERIOD UNDERWEAR

"The rest of the workers are waiting eagerly to get their own period underwear after they heard about how well it has worked for those in the pilot."

- GULSHAN ARA, HEAD OF HR AT HOP LUN

"I did not experience any leaks, rather I now feel confident that there is no chance of a leak."

- WORKER FROM PILOT TWO

Period Underwear was developed by Reemi as a safe, antibacterial alternative to cloth that could be worn for up to 7 hours without needing to change or add an additional pad to the underwear. This project was embarked upon in response to growing environmental concerns around the use of disposable pads, a lack of waste disposal facilities, culturally restrictive taboos and recurring infections in women using old cloth or other unhygienic menstrual materials. A zero waste MHM solution was designed and created to avoid further negative impacts on the environment and provide women with an innovative solution to managing their menstruation every month. The daily environment of women in garment factories was also taken into consideration to create a product that did not need to be changed as regularly as cloth or disposable pads.

"I find the period underwear better than a sanitary pad!"

- WORKER FROM PILOT ONE



## KEY COMPONENTS:

- **Absorption** - The Reemi period underwear features a gusset sewn with multiple layers of microfibre for absorption, allowing the user to wear the underwear for up to 7 hours depending on menstrual flow.
- **Leak-proof** - The Reemi period underwear features an outer leak-proof layer at the bottom of the gusset. This allows the user to have more confidence in their daily activities without worrying about leaks. This is one of the top concerns for women whilst menstruating.
- **Discreet and comfortable** - The Reemi period underwear is a discreet black colour and looks exactly like regular underwear. It is made from fast-drying recycled nylon fabric designed for use in Bangladesh's hot, humid conditions.
- **Antimicrobial** - The gusset area has an outer antimicrobial fabric to reduce the risk of infections. The self-sterilising fabric is made from a permanently bonded antimicrobial technology that helps in reducing vaginal infections caused by Candida Albicans as well as infections from other pathogens. The antimicrobial technology embeds a positively charged layer in the fabric that attracts and kills negatively charged microbes like bacteria and fungi. There are no harmful chemicals in this fabric treatment technology. Recent studies have shown a 99% reduction in bacterial growth for species such as: Klebsiella Pneumoniae, Escherichia Coli and Candida Albicans.<sup>13</sup>
- **Zero waste** - The Reemi period underwear are designed to be repeatedly reused each month. The antimicrobial technology in the fabric will not wash out or deteriorate and will remain just as effective after each wash. There is no waste to dispose of each month, and women then have the product on hand when needed.
- **Cost saving** - The reusable nature of Reemi period underwear means that monthly purchases of disposable pads or other products are no longer needed, saving money (40-60 BDT per month) in the long term. Women are also able to avoid the need to purchase products in often uncomfortable situations with male shop clerks.

<sup>13</sup> Provided by our fabric supplier, Real Relief, who have conducted tests for Antibacterial activity (quantitative assessment).

### 4.3 MHM WASHING BAGS

The key reason for improving the MHM Washing Bags in collaboration with iDE and icddr,b was to help reduce the stigma of touching menstrual blood in Bangladesh, in particular when washing used menstrual products. As in many Eastern cultures, the right hand is used for eating, therefore washing and having to touch menstrual blood from cloth or reusable pads is seen as very taboo. Current cleaning methods of reusable menstrual hygiene products include washing the product on the latrine floor with one's feet to avoid touching the blood with one's hands. Together with iDE and icddr,b, Reemi helped design the MHM Washing Bags to overcome this problem.

"The workers have been sharing with their welfare officer that they really like these MHM Washing and Drying bags and other workers are now asking when they can get some too."

- FACTORY MANAGER FROM PILOT THREE

"I don't need to touch the dirty menstrual cloth while washing and now I feel like it's easy to clean."

- WORKER FROM PILOT ONE

#### KEY COMPONENTS:

- **Hygienic/ability to wash used products without touching menstrual blood** - The washing bags are designed to be used without needing to touch the used menstrual products. The bags have a scrubber on the inside at the base and are designed to be filled with water and detergent/soap. The used cloth or Reemi period underwear is placed inside and tied shut with the drawstring at the top. The bag is designed to be filled with water, scrubbed, emptied and repeated until the cloth is clean. The cloth can then be left to dry, as can the washing bag.
- **Waterproof** - The washing bags are designed to hold the water inside the bag without leaking and without any need to touch the blood. The fabric is available locally and easily sourced.



- **Discreet** - The bags are a discreet design and shape to not draw much attention. They allow the women some privacy whilst washing intimate pieces of menstrual cloth or period underwear in often very public spaces shared with others.
- **Zero-waste** - The washing bags are a zero-waste solution when combined with a reusable menstrual product like reusable pads, cloth or period underwear. There is no need to buy additional menstrual products every month, reducing environmental waste.

## 4.4 MHM DRYING BAGS

"Before using this bag I would dry my menstrual cloth inside the home and hide it. But now I can dry it under the sun, in an open space with natural air."

- WORKER FROM PILOT ONE

Along with design partner IDE Bangladesh and icddr,b, Reemi also helped design the MHM Drying Bags to help women with the drying of their reusable menstrual hygiene products. With privacy a lacking aspect of living in most densely-populated parts of Bangladesh, this means that washing lines are often very public, even more so in slums and refugee camps. This factor combined with the social stigma of anything menstrual-related, often forces women to dry their menstrual cloth/products indoors in damp, humid and dark conditions, rather than on a washing line where ultraviolet light acts as a natural bacteria-reducing agent. The risk of infections and other health complications from damp cloth are increased when they are not dried properly outside. The drying bags were therefore invented to allow women to hang their cloth/period underwear/reusable pads outside on the washing line in discreet, breathable drying bags.

"I use the bag to dry my reusable pad, so no one can understand what product it is and I can dry my reusable pad in an open area."

- WORKER FROM PILOT THREE

### KEY COMPONENTS:

- **Easy to use** - The drying bags are designed to be easy to use. First the menstrual product is placed inside the bag on the cord on the inside, much like an internal washing line on the inside of the bag. This is then tied together at the centre. The bag is then fastened closed by a tie around two buttons at the front and tied onto the clothes line with four small ties at the top of the bag.
- **Breathable** - The fabric is fast drying and breathable which allows plenty of airflow through to the product/products enclosed in the bag.
- **Discreet** - The dark mesh fabric allows the bags to be very discreet when hung on a washing line. The fabric is lightweight but still discreet enough to not view the product inside the bag.
- **Sustainable** - The drying bags are made from a natural fabric that is available in the local market and easily sourced.
- **Fast-drying** - The drying bags were designed to be fast-drying in a hot, humid environment, the mesh allows plenty of airflow to circulate through the bag.
- **Zero waste** - Together, the reusable menstrual hygiene products and the washing and drying bag enables the user to have a completely zero-waste reusable solution to managing their menstruation.



## 4.5 ICCDR,B'S SULTANA REUSABLE PADS

"I can use it again and again, that's the most positive thing! There is now no need to spend money on buying a sanitary pad. It saves me both time and money."

- WORKER FROM PILOT THREE

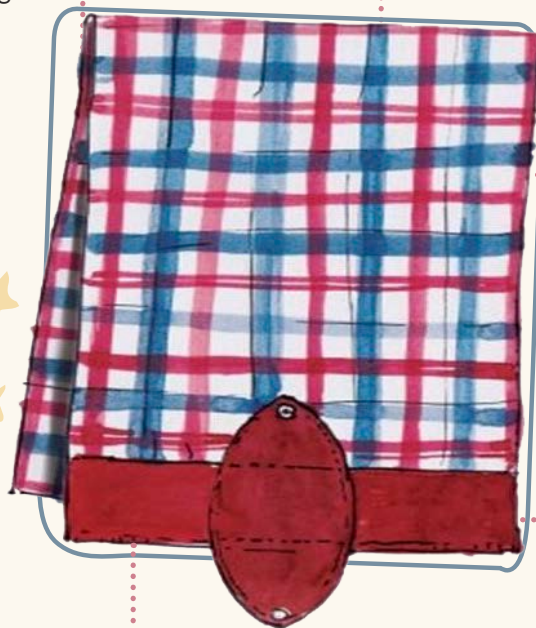
The discreet reusable pads were invented by iccdr,b as a zero waste solution that is leak proof, absorbent, discreet and saves money in the long term.

### KEY COMPONENTS:

- **Discreet design** - The design of the pads is much like a napkin that folds several times, very different to a traditional and obvious pad shape that it is used for managing menstruation. The napkin design allows for discretion when washing and drying. When hung on a washing line it is not noticeably a menstrual-related product.



- **Absorption** - The reusable pads are made of multiple layers of absorbent fabric sewn together to provide maximum absorption.



- **Leak-proof** - A leakproof layer ensures the reusable pad remains leak proof, enabling the user to be comfortable and confident wearing them without fear of leaks which is often a major barrier for women leaving the house whilst menstruating.

- **Zero waste** - The reusable pads can be repeatedly washed and worn without reducing fabric absorption characteristics, meaning they are a great zero waste solution to managing menstruation.

- **Cost saving** - Without needing to buy disposable pads each month, the reusable pads will save money in the long term as they can be used again and again.

These product innovations give women a variety of options when choosing how to manage their menstrual hygiene needs in an environment that lacks privacy, has cultural constraints and taboos as well as significant social stigma associated with menstrual cycles. Reemi have endeavoured to innovate products that are intentionally designed and discreet, giving women the respect and dignity they deserve.





# 5. METHODOLOGY

## 5.1 STUDY DESIGN AND OUTCOME VARIABLES

Reemi conducted **three pilot studies** to test the desirability of zero-waste menstrual products, to understand how the interventions impacted social stigma and to investigate improved health outcomes for menstrual health management. Each pilot was unique in product distribution but followed a largely similar methodology.



### PILOT ONE

This pilot was considered a pre-test to Pilot Two (a full scientific randomised control trial). In this Pilot we focused on three zero-waste MHM products to compare and understand user demand: MHM Washing Bags, MHM Drying Bags and Reemi Period Underwear.

### PILOT TWO

A full scientific randomised control trial. The aim of this study was to empower the participating women to make socially unconstrained optimal choices about their menstrual hygiene management.

In this field study, participants in the treatment group attended facilitated discussion sessions aimed at breaking the silence surrounding the topic of menstruation, giving women a voice, and creating a safe space to share their concerns and thoughts on the topic. We expected that the open facilitated discussion would reduce the perceived stigma and cultural taboos surrounding menstruation. We tested whether the group discussions changed the perceived value and uptake of new menstrual hygiene products.

First, a baseline survey was conducted via phone, collecting information on current menstrual practices and perceived restrictive social attitudes. Second, half of the participants were assigned to the treatment group. They participated in one interactive facilitated discussion group where they

were guided by experienced facilitators to share their personal experiences regarding menstruation. Third, in a second phone survey a new menstrual hygiene product, the Reemi antibacterial period underwear, was introduced and the value placed on this product was measured. Most participants were offered this underwear free of charge and collection of the free underwear, from a store in the factory, was recorded.

As mentioned above, the study participants were divided into two groups. In the treatment group, participants received the intervention (facilitated discussion session), while the control group, were only interacted with via a phone survey. The intervention consisted of one discussion session, lasting around 1 hour. Given the restrictions due to the ongoing pandemic, these sessions took place in a hybrid virtual and in-person format. Around 10 to 15 female workers from the garment factory came together in a room at their workplace for the facilitated discussion session.

The two primary outcome variables in the study were: a) the willingness to pay for sanitary pads and b) the pick-up rate of menstrual underwear to be obtained from a male shopkeeper in a small store on the factory premises.

The willingness to pay for the pads was elicited using a price list. The women were offered a choice between an amount of money or the menstrual product, which they could pick up from a male shopkeeper at the factory store. The amounts of money offered increased with each choice offered. The willingness to pay was taken to be the amount

of money at which the women switched from preferring the underwear to preferring the money.

To measure the pick-up rate of the underwear, the participants were told at the end of the survey that they could get the underwear at the factory store, which was run by a man. The worker ID and time of pick-up is recorded by the shopkeeper. This allows checking that only eligible women picked up the underwear and whether they came to pick it up by themselves or in groups. The proportion of women picking up the underwear in the treatment and control group as well as the individual probability that a woman picks up the underwear are the outcome measures.

The change in perceived restrictive social attitudes was measured by asking a set of questions on perceived social norms, stigma and taboo both before and after the treatment and comparing the average values for the treatment and control groups. In the baseline survey perceived social norms were elicited by asking the women 11 questions about their second-order beliefs (behaviour other women find socially acceptable), on a 4-point scale. Perceived stigma was elicited by showing the women four statements describing a feeling of being stigmatised during menstruation and asking them how many of the statements they agree to. This number, between 0 and 4, is used as an indicator for the perceived stigma, with the women agreeing to more statements indicating they have a stronger perception of stigma.

Perceived taboo is elicited in a similar way. Women were shown four statements describing the taboo surrounding menstruation and asked how many of the statements they agree to. This number between 0 and 4 is taken as the measure of the perceived strictness of taboo, with the more women agreeing to more statements indicating the more they perceive the taboo as strict. Both the taboo and stigma measures are based on and adjusted from Heard & Chrisler<sup>14</sup> and Marván et al<sup>15</sup>. In the outcome measurement survey, these questions and a subset of the social norm questions are repeated again to determine if the treatment changed the average responses.

## DCE

A discrete choice experiment (DCE) was also run in Pilot Two. A DCE is a research method used to measure user preferences for different attributes of a product. Participants are typically presented with a series of alternative hypothetical scenarios containing a number of variables or “attributes” and they are asked to state their preferred choice. In our case, we presented women with different scenarios of how and where to obtain a pack of sanitary pads. The pick-up location inside (vs outside) the factory, the shopkeeper gender (male or female), and the price were all varied. The results from the choices allowed us to measure how much women value each of the attributes individually, and also to see if the women that participated in the facilitated discussion valued any of the attributes differently from the control group.

## PILOT THREE

This pilot was considered a final test to compare revised zero-waste MHM products. In this Pilot we focused on three zero-waste MHM products to compare and understand user demand: revised MHM Washing Bags, revised MHM Drying Bags and icddr,b's Sultana Reusable Pad. We ran this pilot in the same way as Pilot One.

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<sup>14</sup> Heard, K. V., Chrisler, J. C., Kimes, L. A., & Siegel, H. N. (1999). Psychometric Evaluation of the Menstrual Joy Questionnaire. *Psychological Reports*, 84(1), 135–136. <https://doi.org/10.2466/pr0.1999.84.1.135>

<sup>15</sup> Marván, María & Cortés-Iniestra, Sandra & González, Regina. (2005). Beliefs About and Attitudes Toward Menstruation Among Young and Middle-Aged Mexicans. *Sex Roles*. 53. 273-279. 10.1007/s11199-005-5685-3.

## 5.2 INTERVENTION

"It was the first time for many of the workers to talk openly about periods and now they feel confident to speak up about it"

- GULSHAN ARA, HEAD OF HR AT HOP LUN

Facilitated discussion sessions were used as a method to help reduce feelings of shyness and secrecy around discussing menstruation. It was decided that informal discussion groups would be better than formal education sessions on menstruation. In these discussion sessions 15-20 women came together for one hour to exchange personal experiences around menstruation and talk openly about the topic amongst themselves with a trained facilitator from local Bangladesh organisation, Change Associates. The trainers guided the conversation and helped correct any misconceptions or incorrect information. The aim of 'breaking the silence' on the topic of menstruation was to allow for social learning and to support the women to update their perceptions of the norms around menstruation. The format was designed to encourage sharing of personal experiences by workers that know each other and to encourage and normalise behaviour that was currently stigmatised, such as purchasing pads from a male shopkeeper.

"At the beginning they were very uncomfortable about periods but after the discussion sessions, the workers were so comfortable that they shared about their positive experience to their neighbours and friends"

- FACTORY MANAGER FROM PILOT THREE

### THE SESSIONS WERE DESIGNED TO:

1. Encourage women to discuss menstruation openly and share personal experiences.
2. Empower women to view menstruation as something natural and healthy instead of something shameful, uncomfortable and embarrassing.
3. Enable women to confidently spread information to others, including their daughters, about the availability and quality of different methods to manage menstruation.



### 5.3 TIMELINES

FIGURE 8: TABLE OF BASIC DEMOGRAPHICS ACROSS ALL THREE PILOTS

	PILOT 1	PILOT 2	PILOT 3	OVERALL
NUMBER OF PARTICIPANTS	160	476	88	724
AVERAGE AGE (years)	26.30	26.48	31.2	27.99
PARITY (number of children)	1.37	1.01	1.7	1.25
RELIGION (% Muslim)	100%	98%	88%	88.67%
MARRIED	80%	85%	81%	81.67%
AVERAGE YEARS MARRIED	13	N/A	N/A	N/A
YEARS OF EDUCATION	5.53	7.11	5.5	6.04



# PILOT ONE

Pilot 1 involved 160 female workers. This pilot was considered a pre-test to Pilot Two in order to implement a full scientific randomised control trial.

## PARTNERS INVOLVED

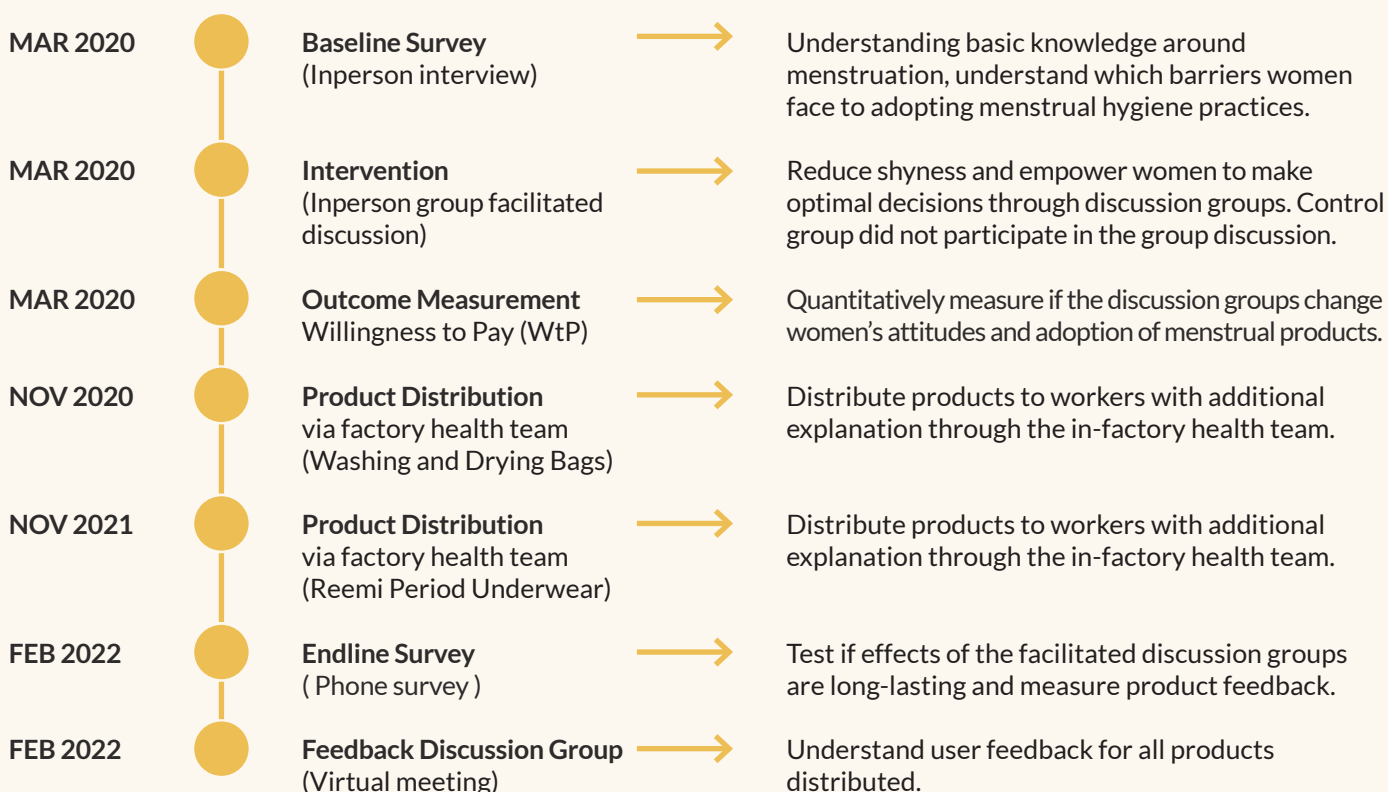
**Implementation Partners:** Change Associates, iDE Bangladesh and Basha Boutique

**Research Partner:** University of Munich (LMU)

**Corporate Partner:** AS Colour

## PRODUCTS DISTRIBUTED:

1. MHM Washing Bags
2. MHM Drying Bags
3. Reemi Period Underwear



## PILOT TWO

A rigorous randomised control trial was followed for this pilot with 476 female workers, led by Ph.D candidates from the University of Munich. The aim of this research was to evaluate the zero-waste MHM solutions as well as understand barriers to adopting such new MHM technologies. This study was designed and data analysed and interpreted by doctoral candidates Silvia Castro and Clarissa Mang from the Department of Economics The University of Munich, Munich, Germany. For more information on methodology, data and results please see the [published Working Paper](#).

### PARTNERS INVOLVED

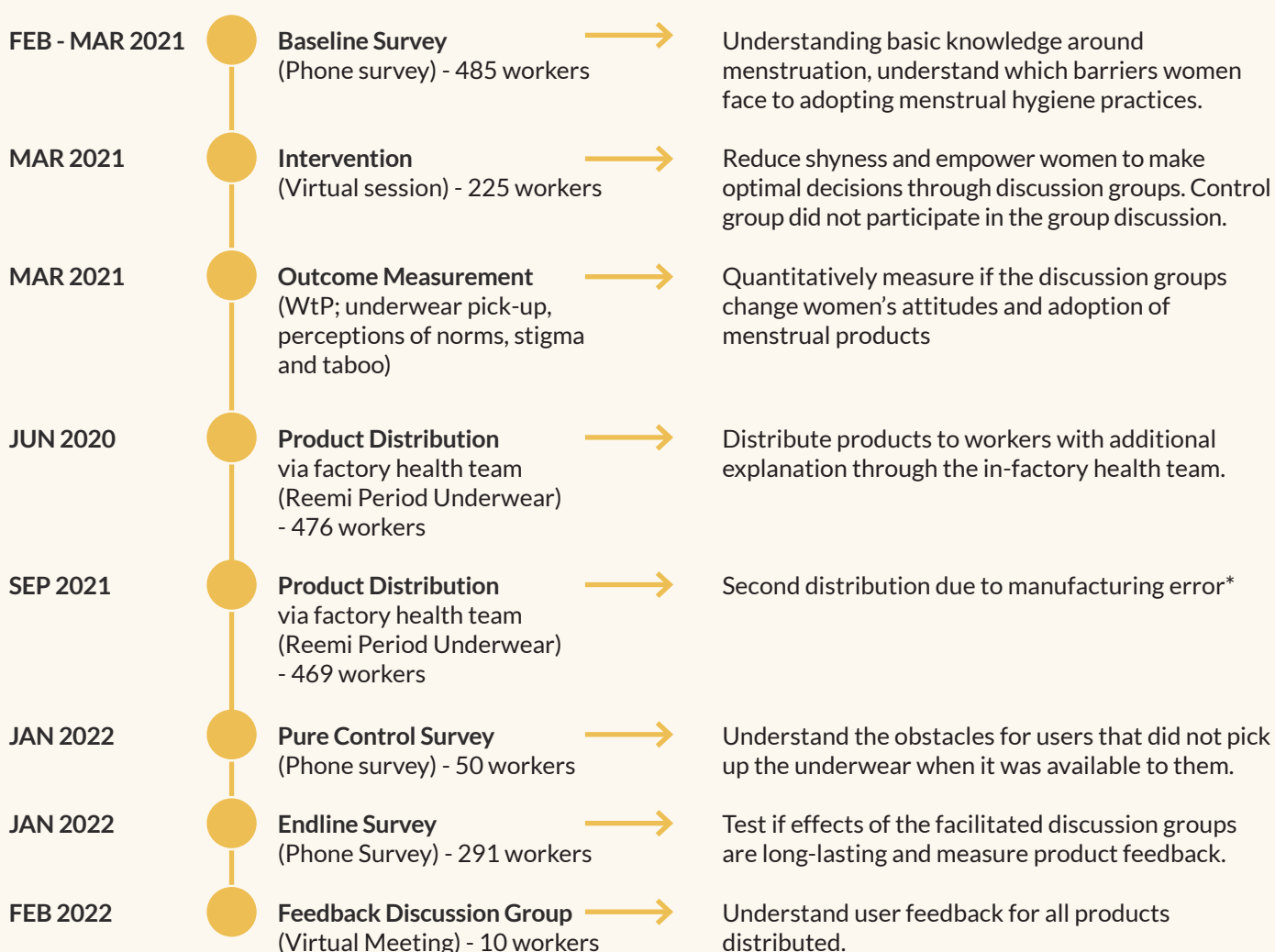
**Implementation Partners:** Change Associates, iDE Bangladesh and Basha Boutique

**Research Partner:** University of Munich (LMU)

**Corporate Partner:** Hop Lun

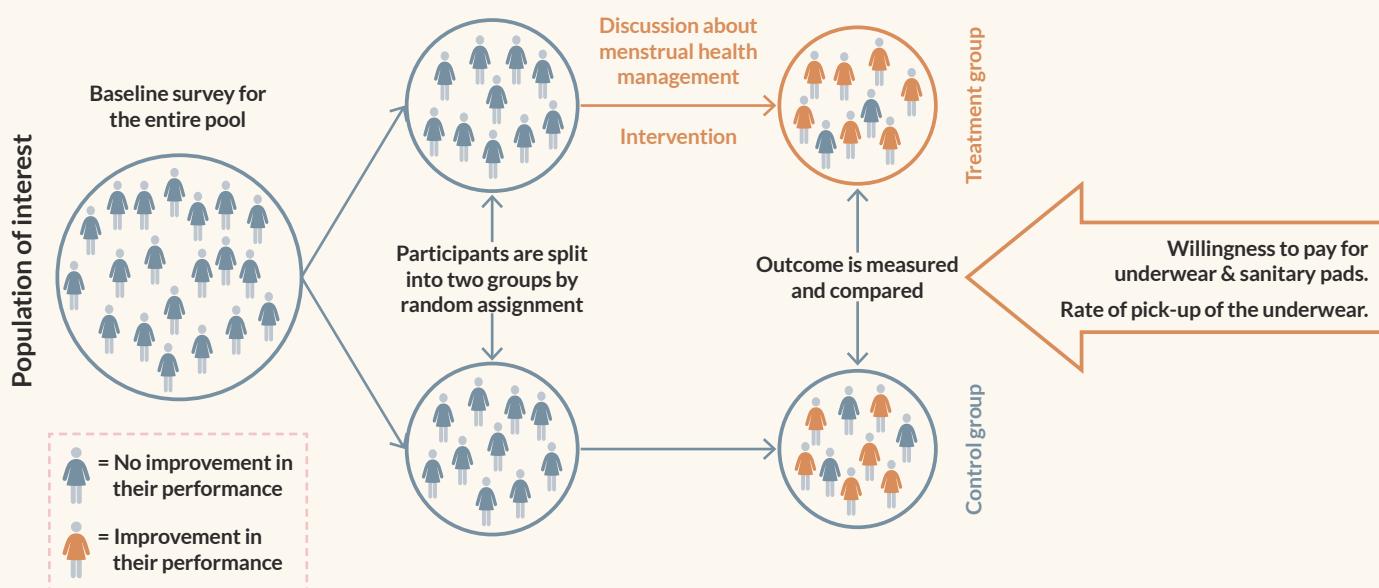
### PRODUCTS DISTRIBUTED:

1. Reemi Period Underwear



\* A manufacturing error occurred in the original production of the Reemi period underwear, which normally would have been mitigated in a non-covid environment. Due to supply chain and logistics issues, the final sample was not able to be approved in person and was signed off via Zoom. The factory partner quickly remade the period underwear to the correct specifications and the endline survey was conducted on the second distribution of underwear only. The pick-up rate for the second distribution was found to be much faster than the first distribution, illustrating high demand for the product.

## RANDOMIZED CONTROLLED TRIAL - THE GOLD STANDARD



## PILOT THREE

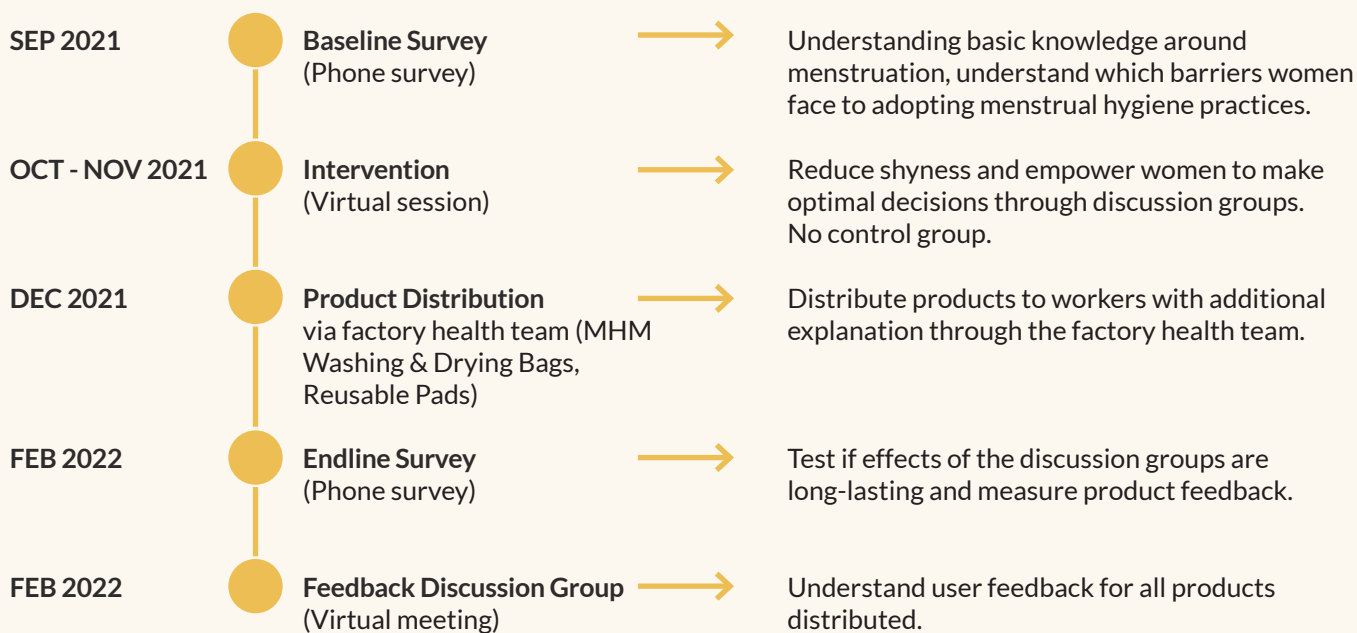
Pilot 3 involved 88 female workers. This final pilot was to assess the revised version of MHM Washing and Drying bags, as well as understanding user feedback to icddr,b's Reusable Sultana Pads.

### PARTNERS INVOLVED

**Implementation Partners:** Change Associates, iDE Bangladesh and Basha Boutique.  
**Research Partner:** icddr,b  
**Corporate Partner:** AS Colour

### PRODUCTS DISTRIBUTED:

1. Improved MHM Washing Bags
2. Improved MHM Drying Bags
3. Icddr,b's Sultana Reusable Pads





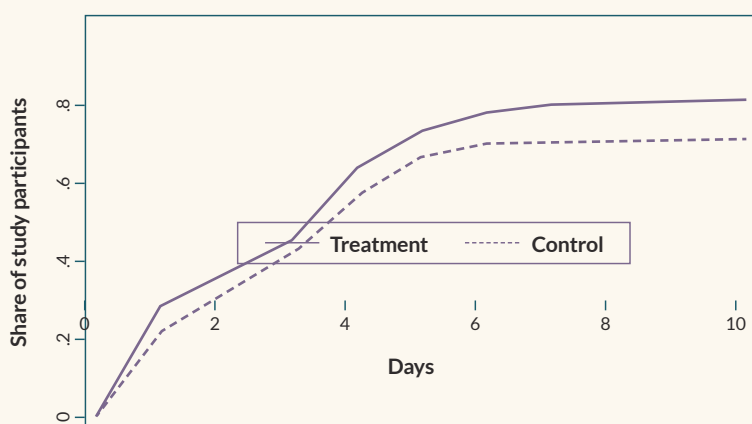


## 6. RESULTS

The following results presented are from Pilot Two as it followed our most comprehensive and in-depth research design:

- The control group's WtP  $\approx$  91 BDT, while the treatment group's WtP increased by more than 25%. The Change in WtP after the treatment was higher in the younger women.
- Figure 9 shows the effect of the treatment on the rate of pick-up of an anti-bacterial menstrual underwear previously not available to the women. The research shows that the facilitated discussion sessions led to an increase in the pick-up rates of around 14% at the sample mean. Whilst around 71% of women from the control group picked up the underwear, this rose to around 81% for women in the treatment group. The results are significant at the 5% level.
- There was a positive change in the social norms associated with purchasing MHM products. The norm of purchasing pads from a male went from being viewed as very socially inappropriate by the majority (61%) of the women to being viewed as very socially appropriate by the majority in the treatment group after the discussion (89%). This shows that the perceived stigma associated with purchasing MHM products from a male could be overcome through facilitated discussion sessions and education.
- The changes in the treatment group were still observable after 6 months. After 6 months, only around 25% of women were still using cloth (down from 50%), pad use increased from around 60% to around 70% and around **70% reported using the Reemi period underwear**.
- Our DCE results showed that, overall, there was a preference for picking up the underwear from a female shopkeeper and in a location outside the factory (which provided a higher degree of anonymity). Women that participated in the facilitated discussion were less concerned with anonymity and with the gender of the shopkeeper. We interpret this as evidence that the facilitated discussions empowered women to access the products, who were now less concerned by the social constraints, thereby reducing social pressure, obstacles and concerns.

FIGURE 9: PICK UP OF UNDERWEAR



**Note:** Cumulative distribution function of the share of participants that picked up the menstrual underwear at the factory store for a male shop clerk. The product was made available on the 10th of June of 2021 and was available for pick up until the 19th of June.

## 6.1 HETEROGENEITY

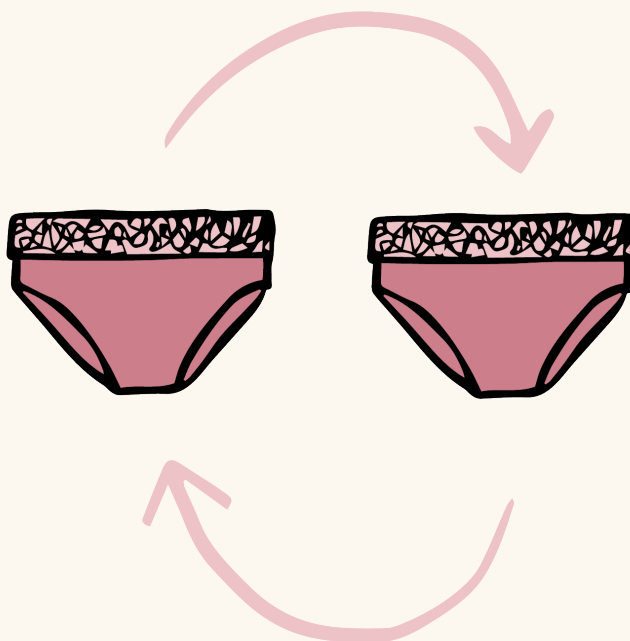
The data from Pilot Two demonstrated that the characteristics of the participants were very important in determining the effectiveness of the treatment and how different subgroups were affected. Age, education and stigma levels were all major factors, as we have seen that women 25 years and older were more likely to be using cloth and those 25 years and below were more likely to use pads at baseline. The treatment (facilitated discussion sessions) had a much stronger impact on the WtP and probability of collecting the underwear for the women 25 years and below. Likewise it was mostly the more educated women (those with six or more years of education) that responded more positively to the treatment intervention.

Stigma levels were also evaluated to determine if those women already more open and engaged with the topic responded more positively, or alternatively, if the treatment affected those women with a more restrictive view. The treatment effect on the willingness to pay was around twice as high for women who previously agreed to more statements about feeling uncomfortable when buying pads, or feeling like they are being stigmatised or judged if someone notices they are menstruating. Likewise, the women who were sending their husbands to buy pads responded better to the treatment, due to perceiving the social stigma as a very large obstacle to purchasing menstrual products themselves.

Overall, the heterogeneity analysis paints a clear and consistent picture of the target group most likely to benefit from the facilitated discussion group intervention: younger

and more educated women who are already willing to use pads to begin with, but were constrained in doing so because of a high level of perceived stigma (and therefore often do not buy the pads themselves). These women benefited the most from the treatment because these were also the women most constrained by the restrictive social attitudes. Older women who were happy with the traditional method of using cloth or who did not use pads for reasons other than restrictive social attitudes (e.g. budget constraints) may be less likely to switch. Women already comfortable enough to go to a store to buy pads themselves may feel less constrained by restrictive social constraints. But those women who would like to use pads but feel it is inappropriate to purchase them, or who feel that others will judge them if they go to a store to purchase pads, responded most to our treatment.

When it comes to trying out and adopting the new technology of menstrual underwear, there are fewer differences between the different subgroups of women. If anything, cloth users and again younger women are more willing to test this new method, but overall we found that all women were keen on this new technology.



## 6.2 SOCIAL STIGMA NORMS

When looking at norms related to the take-up of menstrual products, we see that purchasing pads from a male shopkeeper is seen as socially inappropriate by the majority (61%) at the baseline survey. As almost all convenience stores and pharmacies are run by men in Bangladesh, this indicates that there is a behavioural rule restricting the uptake of menstrual products. When looking at the results after the intervention, we observe that purchasing sanitary pads from a male clerk updates from being viewed as socially inappropriate to socially appropriate by the majority (89%). It seems that the facilitated discussion allows participants to update their belief about the current social perceptions around the topic. The results, therefore, show that the intervention reduces the perceived stigma and taboos associated with menstruation to such an extent as to lead to an observed change in the behaviour of women with respect to buying pads from a male shopkeeper.

We evaluated whether the intervention had a lasting effect on the perceived social constraints of stigma, taboo and social norms on purchasing pads from a male

shopkeeper. We found that the effects persisted for over six months, and average levels of stigma and taboo were significantly lower at the six-month follow-up than they were at baseline. Similarly, the action of purchasing pads from a male shopkeeper is seen as substantially more socially appropriate at the six-month follow-up compared to the baseline. There is a significant reduction in stigma and taboo and a significant increase in the perceived appropriateness of buying pads from a male shopkeeper in the follow-up survey compared to the baseline survey.

## 6.3 SPILLOVER EFFECT

Spillover effects arose when women in the treatment group discussed the topic of menstruation and shared what they discussed in the treatment sessions with women from the control group (who did not receive any facilitated discussion).

To measure the extent of spillovers, we re-surveyed 339 of the women in our study six months after the intervention (182 from the control and 157 from the treatment group), and asked them directly about their (self-reported) behaviour in terms of discussing the underwear with their co-workers. 82% of women in the control group and 87% of women in the treatment group reported having discussed the menstrual underwear with others, mostly their co-workers (97-98%).

More than half of the women, including those not originally part of the study, reported having discussed the topic of

menstruation with at least one co-worker in the past 6 months. Moreover, over 72% of the women not part of the study knew about it and 63% knew someone who had picked up the underwear. These high rates of discussion between women in the treatment and control groups as well as women not part of the study, indicate that many of the women shared their experiences of the study and the menstrual products they received with each other. This makes it very plausible that spillover effects from the treatment to the control group occurred. It indicates that the women felt more confident to discuss menstruation after the treatment (facilitated discussion sessions) and that providing opportunities to freely talk about menstruation and making new and advanced menstrual products available can have significant knock-on effects for women who are not directly involved in the study.

## 6.4 PRODUCT FEEDBACK

Below is the product feedback summarised from across all three pilots.

	PILOT	OVERALL PRODUCT RATING	NPS CO-WORKER	NUMBER OF PARTICIPANTS
Period Underwear	Pilot One & Two	7.8/10	58	360
iccdr,b's Sultana Reusable Pad	Pilot Three	7.2/10	27	70
MHM Washing Bag	Pilot One & Three	9.15/10	81	129
MHM Drying Bag	Pilot One & Three	9.5/10	81	120

The Net Promoter Score (NPS) is a metric used to determine how likely customers are to recommend the product to their co-workers. Respondents give a rating between 0 and 10 and therefore fall into one of three categories: Promoters are those with a 9 or 10, Passives are those with a 7 or 8 and then Detractors are considered to be anything 6 and below. The NPS is calculated by subtracting the percentage of Detractors from the percentage of Promoters. A score above 50 is considered excellent.

We chose to use NPS as an impact measure because it captures the desirability of a product much more effectively than simply an overall product rating. The NPS not only shows how desirable a product is but also how much customers are willing to discuss and promote this product to others thus creating word of mouth recommendations, which is of particular interest for the nature of MHM products. The table above shows that the MHM Drying Bag was considered the most desired product out of the four products, showing just how strong that taboo is around hanging menstrual products (albeit clean MHM products) to dry and this being seen by others.

### AVERAGE NUMBER OF PRODUCTS IDEALLY OWNED

Reemi Period Underwear	2.9 pairs
iccdr,b's Sultana Reusable Pads	2.3 pairs
MHM Washing Bags	2.9 bags
MHM Drying Bags	2.5 bags

## 7. LIMITATIONS

Throughout our research we have identified the following limitations:

- **Lack of involvement of men** - Reasons for not including men in the discussion groups were due to this being deemed culturally inappropriate by our implementation partner. However, since men are often in charge of the household budget (and are often already being sent by their wives to purchase the pads for them), addressing the men's perception of restrictive social constraints provides a promising avenue for future research.
- **Limited transfer of knowledge** - We see that distributing the product in combination with the facilitated discussion led to an increased sharing of knowledge and conversation around the topic among the garment workers. We were not able to address in this study if this was continued at home with mothers' discussing menstruation with their children.
- **Role Model Effect** - The role model effect refers to other women in the discussion group that use pads and/or have a higher baseline level of knowledge and are therefore seen as natural influencers. It could be the case that women feel particularly encouraged to take up new products due to the effects of such role models. In this study we did not identify such role models and finding out who to target would be central to future research.
- **Product Range** - No participant used the entire suite of MHM products we innovated to compare and give feedback.
- **Regular Income** - Workers have regular incomes which may change the impact on humanitarian settings.
- **Trial Period** - Some participants only had two menstrual cycles to test the products which may not have been long enough.
- **Access to Water** - We assumed all participants had access to water for washing purposes.



## 8. RECOMMENDATIONS

### RECOMMENDED PRODUCT MATRIX

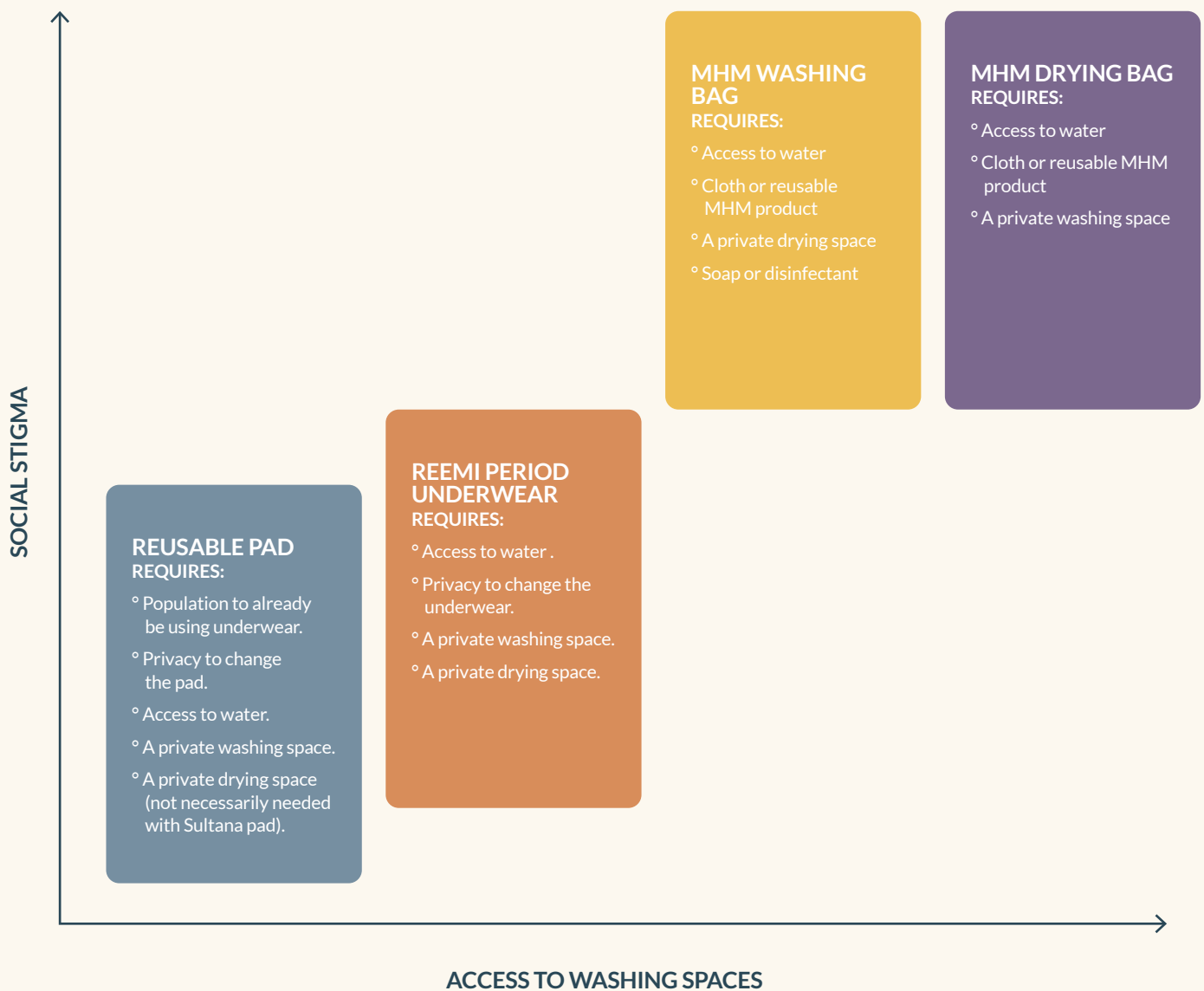
**In all contexts, we believe that choice gives dignity and is therefore empowering.** Most users will use a mix of methods to manage their menstruation as there is very rarely one solution that will address every WASH need. One limitation is that we haven't included the tension between cost versus choice.

We have outlined the requirements below for each option and hope that these can be helpful in the decision-making process when deciding upon the most appropriate menstrual products for various settings within Bangladesh. For instance the reusable pad requires the population to already be used to wearing underwear which in some rural places in Bangladesh is not the case and therefore these would not be appropriate. In extreme cases where there is very limited access to water, a zero waste solution will probably not be appropriate, and disposable products may be the most successful, although the question of waste management would still need to be addressed.





## SOCIAL STIGMA VERSUS MHM WASHING FACILITIES



## INTERGENERATIONAL KNOWLEDGE TRANSFER

Our research has shown that intergenerational knowledge transfer around menstruation from mothers to daughters is low due to menstruation being such a taboo topic. From our baseline surveys only one third of mothers have discussed menstruation with their daughters older than seven years old. Some mothers shy away from discussing menstruation with their daughters which could support breaking the silence and the generational cycles of stigma. We recommend attempting to capture this data in future pilots/research to truly understand how significant that gap is and how interventions such as discussion groups help to overcome the stigma.

## EDUCATION THROUGH FACILITATED DISCUSSION SESSIONS

Based on our research we highly recommend that education through facilitated discussion sessions be included with product distribution. These address some of the key stigmas and taboos that affect product adoption and without this a good uptake may not be guaranteed. Our results show that the one hour facilitated discussion on menstruation led to an increase in the women's valuation of the menstrual products, and increased their uptake of the menstrual underwear, a new hygienic menstrual absorbent.

Participating in discussions that break the silence surrounding menstruation increased the willingness to pay for sanitary pads (that had to be collected from a male shopkeeper on factory premises) by more than 25% and uptake rates of the novel Reemi period underwear increased by around 14%. After the discussion women were less concerned about obtaining the menstrual material from a male shopkeeper and of being seen accessing the new products in the factory. We see that open discussion reduces the perceived restrictiveness of social norms directly related to the collection of products in the store, as well as affecting personal attitudes towards the stigma and taboos around menstruation in general. These effects were still visible after six months.

The discussion sessions are a very light touch intervention which relies on an endogenous process of updating second-order beliefs regarding the prevalent social norms and a reduction in perceived stigma and taboo. It builds on the women's own knowledge and own exchange of ideas and experiences without the need for external skill

or knowledge provision. We encountered great interest and eagerness from the women to actively engage in these facilitated discussions and to share their personal experiences with each other, resulting in persistent changes in the perceptions of norms, stigma and taboo and continued discussions among the women.

We are encouraged by this observation, and see the potential of a large-scale implementation of such an intervention. Nudges to discuss this topic openly and the provision of a safe space to do so may have large and positive effects on the adoption of health- and productivity-enhancing technologies.

This study has shown that a crucial step toward providing all women with hygienic menstrual health technologies lies in supporting women to openly engage with the topic and thus overcome the social pressure and stigma otherwise limiting their access to affordable and available health technologies.



## ROLE OF MEN

While half of our society may not experience menstruation directly, men should not be left out of the efforts to improve women's menstrual health practices. Men can play a vital role in spreading information and providing women with access to safe, hygienic and modern sanitary products in several ways:

- Within a family the husband often has the final word over the allocation of the household budget, such that the purchase of personal items, including menstrual products, often requires the husband's permission. An awareness of the husband around the importance of regularly purchasing sanitary products can thus be an important key to a woman's access to such products.
- Social norms, stigma and taboos are usually not only upheld by women. Quite the opposite: **the stigma and taboo regarding the purchase of menstrual products or the washing and drying of menstrual products outdoors mainly serves to hide menstruation from men.** Menstrual pads need to be bought in small pharmacies or corner stores, which in the case of Bangladesh in particular, are largely run by men and male customers may be present at any time. Their attitude toward menstruation may affect a woman's willingness to enter a store and buy menstrual products. It is therefore desirable to not only empower women to feel more confident and openly discuss menstruation among each other, but to raise awareness for men of the importance of proper

hygienic menstrual management.

- Of the women who were already using pads, more than half did not actually buy the pads themselves. The majority of women instead send their husbands to do so, as he is less affected by the stigmatization and is not judged by other men as harshly. This suggests that a supportive husband willing to take on the task of purchasing pads can have a large impact on a woman's access to sanitary pads.
- Men can themselves also function as multipliers in spreading information about hygienic menstrual practices and, if they are educated on the topic, can help their wives and daughters to make optimal health decisions. Of the women using pads in our pilots, most started using pads due to the recommendation of another woman, such as a female relative, a female friend, or mother. However, in fact almost 5% of women started using pads because their husband suggested it and another 4% because their doctor recommended it to their husband. For almost one in 10 women, it was therefore a man playing the key role in starting her use of pads.



From this research, only 8% of the sons knew about menstruation. Of the very few boys who knew about menstruation, most had learned about it from friends, school or on TV. Many also only learned about it once they were married, from their wives. Most women thought boys should learn about menstruation in school or even only when they are married from their own wives. 17% of all respondents thought that boys should not be taught about menstruation at all.

## 9. CONCLUSION

In this report we present results from three pilot studies conducted in Bangladeshi garment factories, including one randomised controlled trial, to understand the obstacles and desirability of several zero-waste menstrual hygiene management solutions.

The interventions included facilitated discussions about the stigmatised topic of menstruation and saw how it increased the valuation and pick-up rate of both known menstrual products, sanitary pads and our innovative product, reusable Reemi period underwear.

Participating in facilitated discussions that break the silence surrounding menstruation increased the willingness to pay for sanitary pads that had to be collected from a male shopkeeper on factory premises by more than 25% (from around 91 BDT (1.05 USD) to around 113 BDT (1.30 USD)), and take-up rates of the novel Reemi period underwear by around 14%.

As a result of successful design-thinking and collaborative product design, we found that the MHM Washing and Drying bags to be the most desirable products scoring 81 on the NPS. The NPS not only shows how desirable a product is but also how much customers are willing to discuss and promote this product to others thus creating word of mouth recommendations, which is of particular interest for the nature of MHM products that typically carry a lot of taboo. It is an insightful tool as the product ratings between each product are not too dissimilar but it helps determine the willingness of participants to share about the products to each other.

The product feedback sessions and additional feedback from the factory management, as well as the analysis of the spillover effects, showed a knowledge of the products from other workers that did not participate in the pilots. As shown by the high NPS ratings, there was high demand for the Reemi Period Underwear and the MHM Washing and Drying Bags.

We shed some light on how social norms and stigmas are perceived and limit women in their MHM and how our intervention addresses these barriers. Our discrete choice experiment showed that the intervention removed barriers related to shopkeeper gender and social image concerns. After the facilitated discussion, women were less concerned about obtaining the menstrual material from a male shopkeeper and of being seen accessing the new products in the factory. We see that open facilitated discussion reduces the perceived restrictiveness of social norms directly related to the purchase of products in the store with the majority of women changing from seeing purchasing pads from a male as very socially inappropriate to viewing it as very socially appropriate. Lastly, they affect personal attitudes towards the stigma and taboos around menstruation in general. These effects are still visible after six months.

Several important questions to address the remaining obstacles to the achievement of wide-spread optimal menstrual hygiene management need to be left to future research. One unexplored avenue is the role of men. Since men are often in charge of the household budget and are often sent by their wives to purchase the pads, addressing the men's perception of restrictive social constraints provides a promising avenue for future research, as mentioned by Bursztyn et al.<sup>16</sup>. Moreover, given our findings about the existence of spillovers, future research could identify whether there are any particular change makers or opinion leaders that should be targeted to achieve an optimal spread of information through the women's network. Yet, our study has shown that a crucial step toward providing all women with hygienic menstrual health technologies lies in supporting women to openly engage with the topic and thus overcome the social pressure and stigma otherwise limiting their access to affordable and available health technologies.

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<sup>16</sup>Bursztyn, L., A. L. Gonzalez, and D. Yanagizawa-Drott (2020): "Misperceived social norms: Women working outside the home in Saudi Arabia," *American Economic Review*, 110, 2997–3029.

## INDUSTRY LEARNINGS

**Supply chain inefficiencies of disposable products could be dramatically reduced by choosing reusable, sustainable menstrual products that do not require regular distribution.** The products Reemi have created remove such inefficiencies by providing a complete menstrual hygiene management solution for a significantly longer amount of time than disposable products.

### Learnings on supply chain:

- Reusable products to replace supply chain inefficiencies in humanitarian distribution of irregular and inconsistent provisions of disposable products.
- The fewer products the better for managing distribution.

### Material sourcing considerations

- Global supply chains have been enormously impacted by the COVID-19 pandemic and it will take many years to resolve these issues. Therefore it is recommended to plan for longer lead times in material sourcing and manufacturing. This highlights the need to build strong relationships within the manufacturing sector (factories and fabric mills), to ensure timely delivery.
- The geography of manufacturing and fabric mills are important considerations as supply chains only become more complex.
- Research custom and duties for fabric importing prior to deciding on fabric selection and/or prioritised locally sourced fabrics where possible.

### Sample approvals

- We recommend always approving final samples in

physical form and planning for the time taken to deliver the samples, as we found digital approval via methods such as Zoom and/or email inadequate and faced challenges in manufacturing.

### Production efficiencies

- Crucial to work closely with the factory partner to reduce the amount of labour needed per product and the trims required through efficient pattern-design, to create a more efficient and low-cost product.

### Sizing of Reemi period underwear

- In Pilot One, users reported that the sizing was either too big or too small for the period underwear. This was due to the limited size range they had access to, unlike Pilot Two, where the factory made the underwear specifically for the workers selected. This highlights to us a challenge to resolve when it comes to efficient distribution and therefore, efficient supply chains.
- We are working with consultants and experts to find the most cost-efficient and time-efficient solution for addressing size issues in a large scale distribution as this will be a fundamental issue to solve for humanitarian responses.







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