

Louvain School of Management

To what extent can social enterprises commercializing environmentally friendly menstrual products improve Menstrual Health and Hygiene in India?

Author: Alexandra Cogels
Supervisor(s): Tanguy de Jaegere
Academic year 2020.-2021.

Abstract

In recent years, Menstrual Health and Hygiene (MHH) has received growing recognition as a key, under-addressed issue in low-income countries. In India, MHH barriers (e.g. taboos, lack of access to hygienic menstrual protections, lack of appropriate infrastructures etc.) lead to poor menstrual hygiene practices which can be the cause of health-related problems or girls school absenteeism. As a reaction, a plethora of MHH interventions have focused on increasing the access to plastic-based sanitary pads. In a country as populous as India, which lacks robust waste management systems, the increasing adoption of disposable pads generates huge amounts of waste leading to considerable negative outcomes for the environment. The purpose of this thesis is thus to explore a solution to the problems related to MHH in India which combine both a social and an environmental component. Social enterprises commercializing environmentally friendly menstrual products such as Aakar Innovations, Eco-Femme or Saathi, among other, seem to be combining both successfully. However, the scale of the MHH issue raises the question of the extent to which social enterprises can actually have an impact, which leads to this work's research question: *"To what extent can social enterprises commercializing environmentally friendly menstrual products improve the state of Menstrual Health and Hygiene in India"*. The qualitative research and the analysis carried out after the literature review, allowed to formulate the conclusion that social enterprises are an important player in the MHH field. In spite this, the extent to which social enterprises can improve MHH is limited.

Acknowledgments

The realization of this thesis would not have been feasible without the help and support of several people who contributed to this research with insights, suggestions and support.

To begin with, I would like to thank my supervisor, Tanguy De Jaegere, for the commitment, time and support he provided throughout this work. I am very grateful for the prompt responses, numerous suggestions and precious advice he provided to help me improve the present work. I was very lucky to be supported and guided by a very attentive, patient and flexible supervisor.

Then, my gratitude goes to the twelve interviewees who have been generous with their time and in-depth insights. Their knowledge and expertise were immensely valuable for the redaction of this thesis. I am looking forward to maintaining contact with them and exchange further on the developments of this crucial topic.

Additionally, my gratitude goes to Antoine Roba for proofreading my master thesis and providing me with his outside views and suggestions for improvements.

Finally, I would like to thank my family and friends who helped me go the extra mile. Their presence during this passionate journey has kept me motivated along the way.

Terminology

Before introducing the topic, it has been decided to provide the definitions of several key terms used throughout this thesis. This is to ensure a proper understanding and the risk of misinterpretation.

- “Menstrual product” is defined as pads, tampons, menstrual cups, or any product designed specifically for absorption or containment of menses.
- “Eco-friendly” or “environmental-friendly” products have been designed to do the least possible damage to the environment
- “Sanitary pads”, “sanitary napkins” and “pads”, all refer to the same product.
- “Disposable pads”, “commercial pads”, both refer to the same product.
- “Reusable pads”, “cloth pads” and “reusable cloth pads” all refer to the same product
- The term “girls and women” has been used for the major part of this thesis. However, it is important to highlight that menstruation is not an experience which is exclusive to women. Indeed, not all women menstruate (e.g. pregnant women), transgender/intersex individuals may also be prone to menstruation. Because all the academic and grey literature were using the terms “girls” and “women” it has been chosen to do the same to remain coherent.
- Currencies have for clarity’s sake not been converted to a single benchmark. In mid-August 2021, at completion of this thesis, informative exchange rates were the following (Bloomberg, 2021):
 - 0.011 INR/EUR
 - 0.013 INR/USD
 - 1.174 EUR/USD

Abbreviations

ca.:	circa
cf.:	confer
e.g.:	exempli gratia
i.e.:	id est

A-WEAI:	Abbreviated Women's Empowerment
AGYW:	Adolescent Girls and Young Women
BOP:	Bottom of the pyramid
BV:	Bacterial Vaginosis
CAGR:	Compound annual growth rate
CEO:	Chief Executive Officer
CSR:	Corporate Social Responsibility
GST:	Goods and Services Tax
HIV:	Human Immunodeficiency Virus
HPV:	Human Papillomavirus
INR:	Indian Rupee
J&J:	Johnson & Johnson
JMP:	Joint Monitoring Programme
LCA:	Life Cycle Analysis/Assessment
MHH:	Menstrual Health and Hygiene
MHH:	Menstrual Health & Hygiene
MHM:	Menstrual Hygiene Management
MNC:	Multinational Corporation
NFHS-4:	India's National Family Health Survey 4 (2015-2016)
NFHS-5:	India's National Family Health Survey 5 (2019-2020)
NFHS:	National Family Health Survey
NGO:	Non-Governmental Organization
P&G:	Procter & Gamble
PLFS:	Periodic Labour Force Survey
PSI:	Population Services International's
RTI:	Reproductive tract infections
SAP:	Super Absorbent Polymers
SHG:	Self-Help Groups
UN:	United Nations
UNESCO:	The United Nations Educational, Scientific and Cultural Organization
UNICEF:	United Nations Children's Emergency Fund
USA:	United States of America
VVC:	Vulvovaginal Candidiasis

WASH:	Water, Sanitation, and Hygiene
WEAI:	Women's Empowerment Index in Agriculture Index
WHO:	World Health Organization
WSSCP:	Water Supply and Sanitation Collaborative Council

Table of Contents

Abstract.....	I
Acknowledgments	II
Terminology.....	III
Abbreviations	IV
Table of Tables	VIII
Table of Figures.....	VIII
0 Introduction	0
0.1 Context and problematic	0
0.2 Research questions	2
0.3 Motivations	2
0.4 Research Methodology.....	3
0.5 Research Structure.....	3
1 PART I: Problem.....	4
1.1 The Indian context	4
1.1.1 People.....	4
1.1.2 Economy	5
1.1.3 Development indicators	6
1.1.4 Environment.....	7
1.1.5 Water and sanitation	8
1.2 Menstrual Health and Hygiene in India.....	8
1.2.1 Definition	8
1.2.2 Key issues	9
1.2.3 Aggravating issues.....	14
1.2.4 Consequences.....	15
1.2.5 General observations - see table 1	17
1.3 Environmental problem.....	18
1.3.1 Production.....	18
1.3.2 Disposal.....	19
1.4 Field's response	21
1.4.1 Government.....	22
1.4.2 Non-governmental organizations and international development agencies	24
1.4.3 Corporates	25
1.4.4 Self-Help Groups	25
1.4.5 Social Enterprises.....	26
1.4.6 Research Organizations	26
1.4.7 Media & Arts	27
1.5 Conclusion - see Table 4 & 5.....	28
2 Part II: Existing and developing responses.....	29
2.1 Environmentally friendly menstrual products	29
2.1.1 The current menstrual product market	29
2.1.2 4P (Product, Price, Place, Promotion) & MHH	29
2.2 Social entrepreneurship.....	36
2.2.1 Definition	37
2.2.2 Social Enterprises and Menstrual Health and Hygiene.....	38

2.2.3	The Indian landscape	39
2.2.4	Social Enterprises and Menstrual Health and Hygiene.....	41
2.2.5	Outlook	42
3	PART III: Qualitative research.....	45
3.1	Interviews with Social Enterprises, NGOs and experts.....	45
3.1.1	Methodology	45
3.1.2	Presentation of the interviewees	46
3.2	Presentation of the Social Enterprises interviewed.....	47
3.2.1	Compostable pads actors.....	47
3.2.2	Reusable pads.....	51
3.3	Discussion.....	55
3.3.1	Comparison of the different environmental friendly menstrual products.....	55
3.3.2	Barriers to the adoption of eco-friendly menstrual products and existing solutions to tackle them	61
3.3.3	Comparison of the different candidates	67
4	PART 4: Conclusion and recommendations	69
4.1	Conclusion.....	69
4.2	Recommendations	71
4.2.1	Social enterprises	71
4.2.2	Other stakeholders	72
4.3	Limitations	73
4.4	Further Research.....	74
5	Bibliography.....	75

Table of Tables

Table 1 Overview Indian Menstruation Journey - Own work	17
Table 2 Menstrual Waste Disposal Practices Among Adolescent Girls in India (van Eijk et al., 2016, retrieved from Path 2017a)	20
Table 3 Overview of the MHH Policies and Programs in India (Geertz et al., 2016)	22
Table 4 General overview of issues & stakeholders' response to MHH - Own work	28
Table 5 Environmental specific issues related to MHH - Own work	28
Table 6 Overview of 4P analysis, MHH products - own work with source : (Path, 2017b)	36
Table 7 Overview of the five social enterprises interviewed - own work	47
Table 8 Synthesis of led discussions - own work	66

Table of Figures

Figure 1 Saathi's business model (Solar Impulse, n.d.)	48
Figure 2 Aakar Innovations' business model (Aakar Innovations, 2021b)	50
Figure 3 Environmental assessment of hygienic product for India (Leroy et al., 2016).	58

0 Introduction

0.1 Context and problematic

Menstruation, or period, which is normal vaginal bleeding that occurs as part of a woman's monthly cycle (Medline Plus, n.d.), impacts women from a median age of thirteen to fifty (Sumpter & Torondel, 2013), this for an average duration of three to five days (Women's Health, 2018). This end to end represents on average three and a half to six years in a women's life - a considerable amount of time (Schoep et al. 2019). This routine part of female life is not only burdensome on various dimensions (e.g., hygiene, sex life, clothing etc.), but it is also common for a large part of the targeted population to experience physical symptoms such as pain, heavy menstrual bleeding, tiredness, and premenstrual mood disorders. Menstruating women account for half of the female population and 26% of the global population (UNICEF, 2019). Menstruation and all adjacent considerations are thus topics which have an impact on a very large proportion of the population.

Although these symptoms and the burden of managing monthly bleeding might impact every woman, not all women are deemed able to meet their menstrual needs especially in low- and middle-income countries. These needs include access to hygienic and affordable sanitary products, availability of safe, clean and private spaces with water and waste disposal, access to accurate information about menstruation and socio-cultural norms that stigmatize menstruation (Sommer et al., 2020). Over the last few years, menstruation has received global attention as a critical, under-addressed public health issue. This involves a growing acknowledgement that menstruating girls and women face numerous challenges to meet these needs. Poor menstrual health and hygiene deepens social and economic inequalities and negatively impacts their education, health, safety and human development (UNICEF, 2019) Improving Menstrual Health and Hygiene (MHH) could thus improve development outcomes of women around the world.

Although MHH is a global issue, the present research is focused on India. Reason for this is that there are 355 million menstruating girls and women in India and millions of them are facing considerable obstacles to good menstrual hygiene practices (Geertz et al., 2016). What makes this problem even more complex in India is that these barriers are exacerbated by strong cultural and religious practices as well as social taboos (Anand & Garg, 2015)

In recent years, a growing number of initiatives aimed at improving menstrual health in India have been launched by national government (e.g., National Rural Livelihood Mission), for profit enterprises (e.g., Menstrupedia) and Non-Governmental Organisations (NGO) (e.g., Goonj) (Geertz et al., 2016). Many of these efforts focus on improving the access to commercial menstrual products, especially sanitary pads (Lopez, 2020). According to the results of the 2019-2020 National Family Health Survey (NFHS-5), the percentage of women aged 15-24 using safe menstrual products has grown steadily since 2015-2016 in most Indian states. States such as Bihar, bordering Nepal, experienced a growth from 31.0% to 58.8% and Maharashtra, the region encompassing populous Mumbai and Pune, witnessed a growth from 66.1% to 84.8% in four years' time (Nanda, 2021).

According to Mahajan (2019, p.60), “(...) *menstrual hygiene in India has become synonymous with sanitary pads*”. Indeed, free or subsidised distribution of sanitary pads has become an essential part of menstrual health and hygiene initiatives. Moreover, strong product marketing by multinationals (e.g. Procter & Gamble (P&G)), rising disposable incomes and progressive popular media have contributed to the gradual replacement of traditional methods to manage menstruation by disposable sanitary pads (Lopez, 2020).

Even though increasing the access to menstrual products is key to improving menstrual health and hygiene, the mass distribution to low-income communities and the increasing adoption of plastic-based sanitary pads carry a consequent environmental burden. Research from Mariana Lopez, a PhD researcher from the Global Development Institute at the University of Manchester, predicts an environmental catastrophe in India due to the disposal of menstrual products. India comprises 20% of all menstruating girls and women in the world. The 2019-2020 National Family Health Survey (NFHS-5) states that only 58% of women aged 15-24 were using a hygienic method of protection in 2020. In spite of this adoption rate, already twelve billion sanitary napkins are thrown away each year in India. Most of it ends up in waterways, landfills, or are handled by garbage collectors, exposing the industry's employees to potential diseases. Per Lopez's research, the number of sanitary napkins thrown away in India is expected to reach 30 billion by 2030, which amounts to 800,000 tons of waste a year (Lopez, 2020). The end-of-life aspects surrounding this staple product are taking gigantic proportions in India. They have direct and indirect consequences on various dimensions of the population, its habitat and the wider subcontinent.

0.2 Research questions

Although numerous academic researchers in the fields of Public Health and Gender Studies have analysed the prevalence of social, educational and health problems faced by women with poor menstruation practices (van Eijk et al, 2016), little research has been conducted on the impact disposable menstrual products have on the environment.

Even though providing access to clean menstrual product is essential, this should not come at an unbearable price for the environment. But disposable plastic-based sanitary pads are not the only option available for girls and women to manage their menstrual cycles. Fortunately, environmentally friendly options exist, and these include products such as compostable pads, menstrual cups, reusable pads and period panties. Although these products have been around for many years, it is only recently that they have gained attention from the public. These products however are not commercialized by multinationals but rather small-scaled enterprises. In recent years, several small scaled social enterprises which commercialize eco-friendly menstrual product manufacturers have emerged in India (Nanda, 2021). As many of these small-scaled enterprises have strong social missions, several are considered as social enterprises (e.g., Jayashree Industries, Aakar Innovations, Ecofemme, etc.) Their emergence suggests that another equilibrium can be achieved, and that the industry's future can be envisioned more optimistically both for its users and the environment.

In order to assess these eco-friendly alternatives and understand the viability of social enterprises, research is needed. The purpose of this work is thus to analyse *to what extent social enterprises commercializing eco-friendly menstrual products can improve Menstrual Health and Hygiene in India*. By asking this question, the aim is to critically determine first if environmentally friendly menstrual products could be part of the solution to poor MHH issues, then if social enterprises, by commercializing them, could improve MHH.

0.3 Motivations

Several factors have given rise to this choice of master's thesis subject. Firstly, it was decided to investigate the topic of menstruation because of the impact it has on the quality of life of women. Also, although it impacts a quarter of the population monthly, it is still a relatively taboo subject and hence raising awareness and researching the topic is important to address this silence. Secondly, becoming increasingly conscious about the impact of plastic on the environment resulted in a search to find plastic-free alternatives to everyday products. This

search brought about the awareness of the considerable impact disposable menstrual product has on the environment. Thirdly, the desire to address an issue which had not only an environmental but also a social component led to the choice of menstrual health management in a low- to middle income country. Given this rationale, it was decided to investigate the social and environmental issues linked to menstrual health in India. This choice was motivated by a forecasted exchange semester to Calcutta in 2020 (which was later cancelled due to COVID-19) as well as the inspiring discovery of “Saathi”, a company producing biodegradable sanitary pads made of agro-waste. Despite the cancellation of this exchange, India was kept as focus point due to the complexity of the problematic and the amount of existing MHH initiatives and literature on the topic.

0.4 Research Methodology

Given the context of the study and the stated research questions, it was necessary to determine how the research would be conducted to provide a most coherent and exhaustive answer. It was decided to base the literature review on various sources, such as academic and scientific journals, NGO or private sector reports but also newspaper articles. Subsequently, interviews with five social enterprises as well as seven experts operating in the field of Menstrual Health and Hygiene in India were conducted to gather information on the research questions and answer them based on field experiences.

0.5 Research Structure

The first section of this research aims to review and present the existing literature about the problematic of the thesis. This part thus starts with a brief presentation of the Indian context. Then, the literature about Menstrual Health and Hygiene (cf. barriers, obstacles and the field’s responses) is thoroughly described. Next, the environmental problem associated with managing menstruation in India are presented. After, the menstrual product landscape in India will be developed and finally, the topic of Social Enterprises in the Indian context will be approached. The empirical part of this thesis will present qualitative research and analysis performed with people working in the field of MHH in India and especially with social enterprises and NGOs. This part will answer the following sub research questions:

- *“Is there one eco-friendly product offered by social enterprises which would fit the Indian context best?”*
- *“How can social enterprises commercializing eco-friendly menstrual products improve MHH and what barrier do they face?”.*

- *“Are social enterprises the most suitable players to both improve MHH and commercialize environmentally friendly menstrual products?”*,

After answering these questions based on the interviews, the final part of this thesis will draw upon the overall conclusions of the literature review and qualitative research. Then, recommendations will be provided to several actors. Firstly, to social enterprises who are already active in this industry and those who aspire to be, on how they can further improve MHH. Secondly, with the objective to inform policies and initiatives takers, recommendations will be provided to governmental institutions and NGO's on how they could support social enterprises. To conclude, the limitations of this work will be presented, as well as suggestions for future research.

1 PART I: Problem

1.1 The Indian context

India is a country full of contrast with extreme wealth, poverty, and gender inequalities. These worrisome elements cause huge disparities in health and social outcomes among girls and women (van Eijk, 2016). It is thus of great importance to provide an overview of the Indian context. Since it is impossible to cover all aspects shaping the Indian context, only those which are directly or indirectly relevant to this research will be mentioned.

1.1.1 People

1.1.1.1 Culture

India is a vast and diverse multilingual country with a rhythm of life that varies from region to region and community to community (Encyclopedia Britannica, n.d.). Although India's official languages are English and Hindi, it is also home to about 22 major languages, written in around 13 different scripts. There are also hundreds of minor languages and several hundreds of recognized dialects. Hindi is the most widely spoken language with over 528 million native speakers, followed by Bengali with 97 million speakers per the 2011 census data. Due to the British colonialism legacy (cf. Company Raj from 1757 to 1858 & British Raj from 1858 to 1947), English is also a widespread language. Hindi is the most popular language, especially online, while English is becoming increasingly popular in urban areas (Statista, 2020). For most Indians, religion is an important facet of their identity. Among the many religions that have emerged in India, Hinduism - which is a collection of different doctrines, sects, and lifestyles,

is followed by most the population. The caste system¹ continues to play a role in upholding norms and values, despite decades of government legislation aimed at mitigating caste bias (Encyclopedia Britannica, n.d.).

1.1.1.2 Population

India is the 7th largest country in terms of surface and is home to 17.5% of the world's population making India the second-largest population in the world, second only to China (British Council, 2016). Nevertheless, its population is expected to surpass China's over the next decade. Based on projection of the latest United Nations data, India's population currently stands at 1.39 billion and it will keep increasing until approximately 2060 when it will reach a peak at 1.65 billion inhabitants. This estimation is justified by the fact that the number of children per household reached a cap a decade ago. It is now declining and hence, the population will also start decreasing in a few decades (World Population Review, 2021).

Most of the population lives in rural areas. The rural population of India has been declining since 1960 from 82% to 65% in 2019. Since 2009, the urbanization rate has increased by approximately 4%, reaching a 34.47% share of urban population in 2019. This is because people move from rural to urban areas in search of jobs and a better livelihood (O'Neill, 2021).

The youngest population in the world can be found in India, with about two-thirds of the population under the age of 35 (British Council, 2016). India entered its demographic dividend phase in 1980 and it is expected to last until 2040. A demographic dividend corresponds to an increase in the share of the working-age population compared to the dependent population (i.e children which are fourteen years old or below and people older than 65). With a lower dependency ratio, it is expected that the working-age population will produce more outputs and contribute towards investments and savings in the economy, leading to economic growth (Joe et al., 2018).

1.1.2 Economy

India is one of the world's largest and most diverse economies. It is nevertheless one of the poorest countries in the world in terms of income and GDP per capita (Britannica, n.d.). In spite of this, India has made great strides in reducing poverty in recent decades. If the extreme poverty line is set at US\$1.90 per day, India is currently home to 84 million people living in

¹ Definition by BBC (2019): «The system which divides Hindus into rigid hierarchical groups based on their karma (work) and dharma (the Hindi word for religion, but here it means duty) is generally accepted to be more than 3,000 years old.»

extreme poverty, compared to a staggering 139 million in 2016 (World Data Lab, 2021). As per the latest estimations of World Data Lab, approximately 600 million Indians are expected to enter “middle-class” over the next decade. This group will experience an income rise of about 144% and see its purchasing power tripling to \$10.46 trillion. This is one of the largest relative increases in the middle class in Asia. India's middle class is expected to exceed one billion by 2030, accounting for 68.4 percent of the population and 83.6 percent of the country's purchasing power. The implication of the Indian middle-class expansion is that small, middle-class purchases will boom in the next decade (Matters, 2019).

India is also one of the countries with the most economic inequalities. Over the past three decades, the gap between rich and poor has significantly widened. The rich are getting richer, while the poor are struggling more than ever. The widening gap in the economic structure hits women and children the hardest (Statista, 2019). India's Gini index² has risen from 33.4 in 2005 to 33.9 in 2009 and 35.1 in 2011, indicating a steadfast increase in inequality (BTI, 2020).

1.1.3 Development indicators

1.1.3.1 Gender inequality

Although women's rights and gender equality are officially recognized, in practice, women continue to face strong discrimination (BTI, 2020). Looking at the Global Gender Gap Index from the World Economic Forum (2020), India ranked 112th out of 153 countries in 2020. This gap has widened significantly since 2006, when the index was created. India is among the lowest ranking countries for several indicators. Regarding labour force participation rate, only a quarter of women are working or looking for work, compared to 82% for men. Earned income is also highly unequal in India as women earn only one-fifth of what men do. Women hold only 14% of managerial positions and 30% of professional and technical positions (World Economic Forum, 2020). There are however two encouraging indicators which drive women's economic participation. Both bank account ownership and mobile phone ownership have increased by 28% and 10% respectively from 2015 to 2020 (Tandon & Kansal, 2020).

Gender inequality in India goes way beyond mere discrepancies in terms of economic opportunities. For instance, India ranks 150 out of 153 when it comes to the Health and Survival

² Definition by Investopedia (2021): « *The Gini index, or Gini coefficient, is a measure of the distribution of income across a population developed by the Italian statistician Corrado Gini in 1912. [...] The coefficient ranges from 0 (or 0%) to 1 (or 100%), with 0 representing perfect equality and 1 representing perfect inequality.* »

subindex³. Furthermore, discrimination in terms of violence, forced marriage and access to health services is still widespread. As for the gender gap in education, the situation is on a more positive trend. From elementary school to university, female enrolment rates are consistently higher than male enrolment rates. Regarding politics, women are currently underrepresented with only 14.4% of member of parliament (Rajya Sabha and the Lok Sabha) being women (ranked 122nd) and 23% in the national government (ranked 69th) (World Economic Forum, 2020).

1.1.3.2 Literacy level

India's literacy level has gone from approximately 61% in 2001 to 74% in 2018 (UNESCO Institute for Statistics, 2020). Per Chandra (2019), India has managed to escape the "low literacy trap", where illiteracy of parents leads to low literacy levels of the next generation. As per the 2017-2018 Periodic Labour Force Survey (PLFS), the literacy rate of children and youth in India is 93% and 94% respectively. Chandra (2019) estimates that if India manages to maintain this momentum, it could reach universal literacy among children and youth by 2030.

A great disparity between the male and female levels of literacy remains. In 2017-18, the female literacy rate stood at 64.6% and the male literacy rate was 81.5%. However, the gap has been steadily narrowing. Thirty years ago, men's literacy levels were almost twice higher than for women and now the gap is 16.9% (Chandra, 2019).

1.1.4 Environment

India is confronted with tremendous environmental challenges, including air pollution, water contamination and scarcity, waste disposal problems, soil degradation, and biodiversity loss. India also emits the most amounts of greenhouse gases globally. To address these issues several measures have been taken such as eliminating subsidies for polluting cooking gas or pledging to eliminate single-use plastic by 2022. Nevertheless, the government's rhetoric is not accompanied by concrete results and its approach to environmental issues is ambiguous. Critics emphasize that the government is more focused on growth and investment and continues to loosen laws on wildlife, forests, air, and waste (BTI, 2020).

³ Definition by The World Bank (n.d.): «This subindex provides an overview of the differences between women 's and men 's health through the use of two indicators. The first is the sex ratio at birth, which aims specifically to capture the phenomenon of missing women , prevalent in many countries with a strong son preference. Second, we use the gap between women 's and men 's healthy life expectancy. This measure provides an estimate of the number of years that women and men can expect to live in good health by taking into account the years lost to violence, disease, malnutrition or other relevant factors.»

1.1.5 Water and sanitation

Access to sanitation facilities and controlled safe drinking water significantly impact the global health of a country.

In India, the lack of sanitation facilities induces a large practice of open defecation. However, UNICEF (n.d.) reports that progress has been made on this issue. Indeed, five years ago, close to half of then India's population - ca. 550 million people - was bound to defecate in public places (e.g., fields, forests, rivers etc.) due to lack of sanitary equipment in their direct vicinity. The betterment of such indicators, reduced to 450 million individuals in 2019, is set to improve the figures surrounding diarrhoea spreads in urban and rural settings. The youth, and girls especially, seems to be the most impacted by this lack of proper sanitary with approximately 20% of educational establishments not furnished with basic latrines for girls, 58% of kindergarten showcasing a total absence of such infrastructure.

Also, regarding access to water, most of the 22 states surveyed by the NFHS-5 (2019-20) are on the path of achieving universal access to drinking water. States such as Bihar, on the border with Nepal, have already reached a 99% rate of access to safe drinking water, whereas Manipur has jumped from 63.9% in 2015-2016 to 77.1% in 2019-2020 (Banerjee, 2020).

1.2 Menstrual Health and Hygiene in India

1.2.1 Definition

The issues surrounding menstruation have been referred to by different terms such as “Menstrual health”, “Period Poverty”, “Menstrual Equity” et cetera. However, two terms are vastly used in academic papers: “Menstrual Hygiene Management” and more recently “Menstrual Health and Hygiene” (Sommer et al., 2020).

Menstrual Hygiene Management (MHM) corresponds to what is required for menstruators to handle menstruation hygienically and with dignity. The World Health Organization (WHO) and UNICEF Joint Monitoring Programme (JMP) for drinking water, sanitation, and hygiene define “good” MHM when: *“Women and adolescent girls are using a clean menstrual management material to absorb or collect menstrual blood, that can be changed in privacy as often as necessary for the duration of a menstrual period, using soap and water for washing the body as required, and having access to safe and convenient facilities to dispose of used menstrual management materials. They understand the basic facts linked to the menstrual cycle and how to manage it with dignity and without discomfort or fear.”* (WHO/UNICEF, 2012 - p16)

However, the newest term used in public health academic research is “Menstrual Health and Hygiene” (MHH) which comprehends both Menstrual Hygiene Management (MHM) and the wider systemic factors that link menstruation with health, well-being, gender equality, education, equity, empowerment, and rights. These systematic factors have been summed up by UNESCO as *“accurate and timely knowledge; available, safe, and affordable materials; sanitation and washing facilities including safe and hygienic disposal; positive social norms, safe and hygienic disposal and advocacy and policy”* (UNICEF, 2019).

Organizations such as the Water Supply and Sanitation Collaborative Council (WSSCP) have decided to switch in 2019 from using the term MHM to MHH. The aim was to reflect its broadened understanding of menstruation related issues as well as aligning with their partners (WSSCC, 2019). Menstrual Health and Hygiene can thus be considered as an expanded or updated definition of Menstrual Hygiene Management. For more clarity, the term Menstrual Health and Hygiene (MHH) will be used for the present research.

1.2.2 Key issues

1.2.2.1 Lack of infrastructure

Managing menstruation is made more difficult in India by the lack of adequate sanitation in homes, educational facilities, workplaces, and public places. Because of the absence of water supply and adequate infrastructure in their homes, women and girls may be forced to wash soiled clothes in a close by pond or bury or burn them in fields. Also, to avoid being seen by others, women often dry their menstrual cloths in a dark, secluded area rather than sterilizing them in the sun. These practices worsen menstrual hygiene and increase the risk of reproductive system infections (Koonan, 2019).

The lack of clean, functional toilet facilities in workplaces and public places has gender-related consequences as women due to their needs for menstruation management rely more on their presence than men. For example, according to a study from Rajaraman et al. (2013): in a sector such as construction where many women are employed, the absence of sanitation facilities puts them at a disadvantage for their hygienic needs. Women either have to wait until they get home or improvise solutions with neighbours and infrastructure in the vicinity. This issue is aggravated for women on their period as they are unable to change their menstrual protection and therefore either do not change it or have to head home during their working hours. Women skipping work on days of heavy menstruation is also usual (Koonan, 2019).

Out of the findings from 30 studies, Sharma et al., (2020) identified that the infrastructural problems that girls face in school settings during menstruation are numerous. To begin with, there is a lack of disposal systems for used sanitary protection, the proportion of schools that have bins with lids for the disposal of sanitary materials is only 62%. This leads to girls either throwing their sanitary pads in the toilet, causing clogging, or leaving them in the corner of the toilet, resulting in a breeding place for flies and mosquitoes. Subsequently becoming a dirty and unhygienic environment for other users and cleaners. Other problems that were reported were inadequate water supply for washing and flushing, poor cleanliness of the toilets, lack of soap and lavatories and lack of separate toilets for girls. Privacy and security are also an area of concern for girls in schools due to broken locks and doors to toilets (Sharma et al., 2020). This can lead girls to avoid changing used menstrual protection at school because of the absence of appropriate infrastructures (Koonan, 2019). Some girls even skip school due to the lack of infrastructure, this with dire consequences on their overall education (see 1.2.4.2 education).

1.2.2.2 Lack of awareness

Menstruating women and girls in India lack information and social support. Many girls are not well informed on the topic of menstruation. Consequently, girls experimenting with menstruation for the first time feel abnormal, sick, embarrassed or frightened and they are more inclined to develop negative attitudes towards menstruation (Kaur et al., 2018). Education about puberty and menstrual health is not systematically provided to girls in India. Indeed, 71% of girls report that they had no knowledge about menstruation before their first period (Dasra, 2015). Girls are thus often unprepared, uninformed, misinformed and do not receive support for understanding and coping with menarche, which is the first occurrence of menstruation. This limited access to information leads to fear, insecurity and possibly harmful behaviours such as risky sex, limited showering and diminished food and water consumption (MacRae, 2019).

According to Dasra (2015), there are two main issues regarding the provision of MHH information to girls:

The first one is the fact that there is a lack of formal education on menstruation in schools. Per the systematic review of Sharma et al., 2020 regarding the existing evidence on menstrual hygiene management (MHM) across schools in India, schoolteachers were reported as the less common source of MHM information among adolescent girls in 74 studies and only 7% of girls reported teachers as a source of information for MHM. Teachers are usually embarrassed to

discuss the topic of menstruation with their students and often do not know the scientific facts of menstruation. Consequently, girls continue to adopt the same poor menstrual hygiene habits as their families and communities (Dasra, 2015). A study carried by Mason et al. (2017) found that boys also had difficulties understanding menstruation due to the lack of information provided in schools as well as the secrecy associated with it. This study also reported that boys were frequently advised against talking about it. This ignorance and secrecy perpetuate the stigma around menstruation. As a result, men and fathers do not grasp the impact menstruation has on their wives and daughters, as well as their communities and society as a whole. It is therefore unlikely that they will become advocates for women on these issues and consequently, girls continue to suffer from these cultural and societal norms (Mason et al., 2017).

The second issue is that girls often turn to their mothers for information and support. Unfortunately, mothers often either do not possess sufficient or adequate knowledge about menstruation or consider it “dirty” and hence no extensive discussions on the topic are being held. This silence about menstruation is widespread and creates a vicious circle where menstrual stigma leads to a lack of conversation which further reinforces the existing taboos (Dasra, 2015).

A consequence is that women have very low levels of awareness of which menstrual product exist. For instance, in a study by Arora (2017) of 1063 underprivileged women in Punjab and New Delhi, 76% of the women reported using cloth during menstruation, 18% sanitary pads and 6% used both. None of these women were aware of the other options (e.g., a menstrual cup) available to manage menstruation.

1.2.2.3 Limited access to hygienic materials

Building up on such research, a more wide-scoped report from WaterAid India and Menstrual Health Alliance India in 2018 revealed that only 36% of menstruators in India use disposable sanitary napkins, the remaining 64% use other materials (Muralidharan, 2018). Despite the growing adoption of sanitary pads in India, many Indian women must settle with what is available to them and this can sometimes be cotton wool, toilet paper, underwear only, sponges, leaves and mud, or nothing at all (Sumpter & Torondel, 2013). Cloths which are either made from cotton strips or use fabrics from old or frayed clothes are widely used in India. Although the general discourse considers cloths unhygienic, their use represents a good alternative to disposable pads, provided they are sanitized properly. Unfortunately, cloths are often washed with unclean water, no soap and dried indoors instead of in the sunlight, this because of a lack

of knowledge on the best practices, a lack of infrastructure and the presence of social restrictions and taboos (Sumpter & Torondel, 2013). A study carried out in an urban school in Kolkata demonstrated that 69.5% of the cloth users were struggling to sanitize their cloth owing this mostly to the absence of privacy (Yasmin et al., 2013). The main reason why these women use old cloths or other alternatives is the higher cost and the scarce availability of menstrual products in low-income often rural or peri-urban communities. Cloth usage is thus more widespread among these disadvantaged groups (Vishwakarma et al., 2021). This lack of access and affordability also leads to unhygienic practices among girls using disposable pads as they are likely to use the same pad the whole day or even for two or more consecutive days (Garikipati, 2020).

Affordability

One of the reasons why many women in India do not access their preferred option and high-quality menstrual product is the unaffordability of it. According to a study from A.C. Nielsen and Plan India dated 2010, 70% of women in India cannot afford sanitary pads (Dasra, 2015). The barrier of affordability is also reported by Population Services International's (PSI) qualitative research conducted in rural Tamil Nadu, rural Uttar Pradesh and urban Uttar Pradesh with Adolescent Girls and Young Women (AGYW) aged 15 to 24. Among the respondents of this qualitative study, 40% were unable to buy the sanitary pads available on the market due to its price. They were willing to spend 3.67 INR (0.042 €) on average for a commercial disposable pad while the market price for such a product is usually around 4-5 INR (0.046 – 0.057€). Only 10% of the girls were willing to pay a price higher than 6 INR (0.069 €) for a pad, which is often the starting price for the products which offers the features the respondents from this study were looking for. This study also reported that disposable pads were six times more common among the richest households, further demonstrating that the financial cost is a key barrier. Some low-income households will either not use or restrict the use of sanitary pads because of budgetary issues. Hence essential household purchases are favoured over commercial hygiene products (Aylward et al., 2018).

Availability

One of the reasons why women face a lack of access to menstrual products is due to the limited availability of these products in rural areas. For example, Dasra, (2015) reports that in a study conducted in Pali block, a district subdivision of the state of Chhattisgarh, not a single store in 65 villages sold sanitary pads or any other menstrual products. One of the reasons thereby is

that the lack of affordability leads to an insufficient demand from women and thus shopkeepers in rural and semi-urban areas do not supply these products (Dasra, 2015).

However, the production, distribution and marketing capacity of large multinationals and Indian manufacturers is such that sanitary pads could be made more accessible to a large proportion of the Indian female population. But producers have little incentive to target rural areas because of the generally high costs of catering to these areas. Firstly, shipping to remote areas is very pricey as the packaging consists mostly of air since sanitary pads are low-density products. Raw materials, in contrast, are less expensive to ship as these are sent in the form of high-density cardboard which are then transformed into low-density fluff. Unfortunately, most production facilities are located close to large cities with a view to be close to a place with a higher adoption rate of disposable pads and greater purchasing power. Secondly, the marketing budget, would need to be much higher to serve rural areas. This because the adoption rate, the access to mass media and school attendance is much lower than in urban areas (Aylward et al., 2018).

1.2.2.4 Taboo

Despite menstruation being a natural occurrence of the female body, it is in many parts of the world shrouded in secrecy and myth. This is the case in India where menstruation is regarded as dirty and shameful, and it is thus a taboo which women hardly talk about with friends, family and especially men. The mere mention of the subject has historically been taboo, and even today cultural and social influences seem to hinder the development of knowledge on the subject (Anand & Garg, 2015). Indeed, the belief that women and girls must hide their periods leads to behaviours that negatively impact the way girls and women manage their period (Geertz et al., 2016). Also, the taboo associated with menstruation excludes women and girls from various aspects of social and cultural life. Measures such as exclusion from social and religious celebrations, bathing and sexual relations are common. Other taboos-related restriction in India during a woman's period include not being allowed to enter a temple, to touch sacred objects and people, to communicate with other family members, being forced to sleep on the floor, to live in a separate room, to eat in isolation, etc. Although the constraints vary across the country, they are more common in rural areas than in urban areas. (Ram et al., 2020). In a study carried out in an underprivileged setting in Pujab, 92.5% of the 1063 respondents disclosed that they were following menstrual taboos and 80% said they did so for religious reasons and most of them could not provide material explanations as to why they were doing it (Arora, 2017). It has been observed that these restrictions can lead to feelings of depression, isolation and seclusion (Ram et al., 2020).

1.2.3 Aggravating issues

On top of these key structural issues on MHH, there are factors worsening the situation.

1.2.3.1 Gender inequalities in public/private sphere impacting MHH

The political, social, educational, economic and health implications linked to gender inequality, also have direct implications for MHH. To begin with, as women are underrepresented politically (see 1.1.3 development indicators), specific public agencies concerned with their demands are lacking and subsequently their issues do not get enough attention. Menstrual Health and Hygiene thus gets little policy and programmatic support from male politicians and administrator, further reinforcing patriarchal biases and women's vulnerabilities (Babbar et al., 2020).

Next, due to the unequal power balance, which prevails between men and women in India, women often do not have a voice in the decision-making process in families, communities and development initiatives. In most cases, men oversee the decision-making in the households for aspects such as the construction of facilities, the availability of sanitary napkins, the allocation of the family's budget and women and girls' involvements in community meetings. (Mahon et al., 2015). Excluding women from the decision-making process that concerns them results in outcomes that do not meet their specific needs and concerns. This can be illustrated by the way toilets are being constructed (Koonan, 2019). These are built with the assumption that it will be used by everyone, which ignores inter alia women's need for privacy and disposition of soiled protection. Furthermore, men also tend to forget the need for accessible and clean water supply inside the toilets for women to manage their menstruation hygienically and in privacy.

1.2.3.2 COVID-19 Pandemic

According to Amaya (2020), The COVID-19 pandemic has aggravated existing challenges linked to menstrual health and hygiene and will likely further exacerbate inequalities between women and girls worldwide. Indeed, the COVID-19 pandemic has impacts on the ability of girls and women to manage their menstruation and health properly.

Firstly, COVID-19 has made access to menstrual products especially difficult. With the increasing occurrence of job losses, economically struggling families tend to prioritize essential food over menstrual supplies. Also, as reported by Garikipati (2020), in some parts of India, schools are a key component of the supply chain as they provide girls with a monthly packet of

sanitary pads. These are often furnished by the government or NGO's. However, during the lockdown, due to school closures, many girls did not have access to sanitary pads.

In March 2020, when India went into a complete lockdown, menstrual products suffered a week-long supply chain halt which was caused by the categorization of menstrual products as non-essential items. This led to a shortage of stocks in many locations. Another cause of a weakened access to menstrual products is the diversion of resources away from menstrual hygiene supplies towards other supplies (Yamakoshi, 2020).

Secondly, in the face of lockdown living conditions, some menstruators lacked a safe, hygienic and private place to change their menstrual protections. The living conditions in peri-urban areas (cf. Delhi's suburbs) that experienced strong lockdowns have worsened, households were set to live for an extended period of time indoors in small accommodations.

Finally, the pandemic has also led to a restricted access to essential information related to menstruation due to the disruption of routine health services (Garikipati, 2020).

1.2.4 Consequences

1.2.4.1 Physical and Psychological health

In addition to the common menstrual health concerns women face during menstruation (e.g. amenia, menorrhagia, etc.) women in India face enhanced physical health problems due to poor menstrual practices (Dasra, 2015). Examples of poor menstrual hygiene practices are inter alia: using old reusable cloths, changing a menstrual protection outside the toilet cabinet, changing it only once a day, washing your genital part only once a day, drying reusable cloths inside, etc. Poor menstrual hygiene practices can lead to vaginal infections such as bacterial vaginosis (BV) and vulvovaginal candidiasis (VVC), both endogenous non-sexually transmitted infections. The risk for sexually transmitted diseases such as HIV (human immunodeficiency virus) or human papillomavirus (HPV) is also increased with poor menstrual hygiene practices (Sumpter & Torondel, 2013). Reproductive tract infections (RTI), which include sexually transmitted, endogenous and iatrogenic infections (Patel et al., 2003), are a significant public health problem worldwide and especially in low-income countries. Several studies link the causes of RTIs to poor menstrual hygiene (Sumpter & Torondel, 2013). For example, a study from Das et al. 2015 in rural Odisha has shown that women who use reusable menstrual protection have a higher incidence of RTI's than women that use disposable products. This can have long term effects

on women as untreated RTI's can lead to complications such as cervical cancer, pelvic inflammatory diseases, or even maternal mortality (Ram et al., 2020). It has been observed that 27% of the world's cervical cancer deaths occur in India, an incidence rate almost twice the global average. Doctors studying the disease say poor menstrual hygiene is partly to blame (Dasra, 2015). Women using unclean menstrual protection also have higher infertility rates. In countries such as India where infertility is highly stigmatized, it can thus lead to inferior social status and low psychological well-being (Ram et al., 2020).

Menstruation also leads to psychological problems. The restrictions and discrimination menstruating women face can lead to feelings of depression, shame, embarrassment, frustration et cetera. Additionally, permanent strain of having to search for a safe space to manage their needs as well as having to hide their conditions affects their psychological state (Dasra, 2015).

1.2.4.2 School absenteeism

Poor MHH can also impact girls' education. Both qualitative and quantitative data show that it can cause absenteeism, difficulties in participating in class and a general disengagement for girls at school (Hennegan & Montgomery, 2016). This is due to several reasons. Firstly, schools' infrastructures are not always appropriate for girls to handle their menstruation properly. Indeed, there may be a lack of adapted facilities, such as lockable, gender-differentiated, individual toilets with soap and water for washing the clothes. Private outdoor spaces to dry reusable rags or closed trash cans or incinerators to discard used pads are not always provided. Secondly, girls have reported concerns about menstrual-related accidents such as leakage and staining of clothes, odour or dropping of hygiene items. These incidents can lead to bullying or teasing from male students and teachers, creating a feeling of fear, embarrassment, and shame in the classroom (Sumpter & Torondel, 2013). An example which illustrates the extent of the shame problem is the suicide which a twelve-year-old girl committed in 2017 in Tamil Nadu, Southern India, after her teacher humiliated her for having stained her clothes with menstrual blood (BBC News, 2017).

Nevertheless, menstruation is not the only reason for school dropouts. More entrenched cultural practices and social taboos that place constraints on girls once they hit puberty are also determining factors. For example, a study performed in rural Gujarat recognized several contributing factors to school absenteeism: the duty to look after siblings and to contribute to the household chores, the distance to go to school, access difficulties, child marriage etc. (Koonan, 2019).

1.2.5 General observations - see table 1

Table 1 Overview Indian Menstruation Journey - Own work

INDIAN MENSTRUATOR JOURNEY					
PHASES	KNOWLEDGE	ACCESS	USAGE	MAINTENANCE	
				Cloth	Sanitary pad
GOAL	Learn about menstruation	Buy a menstrual product	Have a leak-free period	Sanitize cloth	Dispose pad
SCENARIO	Shivani wakes up and finds blood in her underwear. She is in a state of distress and feels abnormal; she has no clue what is happening to her. When she asks her mom about it, she hands her an old piece of sari and tells her to use it to absorb the blood. Her mom does not want to answer any further questions.	Shivani would like to use those "Whisper" pads everyone talks about at school but the only pads she can find in her village are unbranded sanitary pads and nothing else. Even so, these pads are too expensive for her family, so she uses a cloth most of the time, and sometimes she uses pads when she receives them at school.	Shivani does not like to go to school when she is on her period because she is afraid that her cloth or her pad will stain her sari. The toilets at her school have no lock, no access to water and are often dirty so she waits to be home to wash or change her cloth.	Shivani wants to wash her cloth, but she must wait until the night has set so that she can do it in privacy. She does not feel comfortable drying her cloth in plain sight and therefore she leaves it to dry in a corner.	Shivani wants to dispose her pad but there is no waste management system in her village and therefore she usually buries it in the ground or throws it in the river.
PROBLEM	LACK OF AWARENESS - Women lack knowledge about menstruation TABOO - Menstrual stigma leads to a lack of conversation which further reinforces the existing taboos	LACK OF ACCESS - A large portion of the Indian population lives in rural areas and access to menstrual products there can be difficult AFFORDABILITY - Many women cannot afford commercial sanitary products - Taboo	INFRASTRUCTURE Schools, workplaces and homes often lack sanitation facilities with access to water and soap	TABOO Women often avoid washing and drying their menstrual products in plain sight due to cultural taboos	INFRASTRUCTURE Lack of waste management system
FACTS	71% of girls report that they had no knowledge about menstruation before their first period (Dasra, 2015) 70% of mothers consider menstruation 'dirty', perpetuating a culture of shame and ignorance	70% of women in India cannot afford sanitary pads (Dasra, 2015) - According to a study conducted in the state of Chhatisgarh, not a single store in 65 villages sold sanitary pads or any other menstrual products (Dasra, 2015)	63 million adolescent girls live in homes without toilet facilities (Dasra, 2015) 25% of schools in India have no toilets (Dasra, 2015)	In a study carried out in in Punjab, 92.47% of the respondents were following menstrual taboos and 80% did so for religious reasons (Arota, 2017)	45% of the population throws menstrual absorbents in the routine waste, 23% throw them in the open, 17% burn them and 9% flush them in the toilet (Van Eljk et al., 2016)

1.3 Environmental problem

As has been highlighted in the previous chapter, a strong focus has been laid on improving access to sanitary pads to improve MHH. Even though this is an important step towards improving menstrual health practices among girls and women, sanitary pads pose a threat to the environment. As sanitary pads are single-use products, they have a very negative impact on the environment. Hait & Power's (2020) Life Cycle Assessment (LCA) demonstrates that single-use menstrual products have a considerable impact on the environment throughout their entire lifecycle: raw materials production and packaging, product manufacturing, transportation, use and disposal.

1.3.1 Production

1.3.1.1 Raw materials

Although the impact of sanitary pads depends on the producer and model line, according to the Hait & Power's (2020) LCA, the raw material production stage, is the one which has the highest negative environmental impact. Indeed, the raw material used to produce sanitary pads are damaging to the environment. The main component of sanitary pads is the absorbent material which is usually wood pulp. While wood pulp is compostable, it is enveloped between two fabric sheets which are not. The top layer, which must be permeable, flexible, soft, strong and sterile, consists of a non-woven material, usually a composite material based on polymer-based fibres. The base layer, which must be impermeable, is usually made with polyethylene. Nowadays, to enhance the absorbency levels and improve the spatial distribution, the absorbent core is often composed of a non-woven blend of wood pulp and Super Absorbent Polymers (SAP) (Mahajan, 2019). This specialized petrochemical ingredient is also used in other hygiene products such as diapers for their ability to absorb many times their own weight in liquid (Ajmeri & Ajmeri, 2016). Although this blend can soak up much more menstrual blood than wood pulp alone, it increases the non-compostable proportion of raw materials found in disposable pads. (Mahajan, 2019). It is estimated that the average sanitary napkin comprises 48% of wood pulp, 36% of polyethylene, polypropylene and polyethylene terephthalate, 7% of adhesives, 6% of superabsorbent and 3% of release paper (Ajmeri & Ajmeri, 2016). A large part of the components of a sanitary pad are thus made from plastic.

1.3.1.2 Sourcing

Another issue is that most of the raw materials needed to produce disposable sanitary napkins are imported. The bulk of the wood pulp used to produce sanitary napkins in India comes from

two or three main suppliers (Mahajan, 2019). According to Aylward et al. (2018) the main manufacturers of raw materials are in the United States and Scandinavian countries. This has both an environmental and an economic cost. Sourcing raw materials from countries with high labour costs, added to the custom duties, leaves limited room for the manufacturers to lower the cost of product inputs. Using local materials could potentially reduce this cost but unfortunately, the problem with local products is that they often contain more water than wood pulp, which reduces yield and makes it difficult to achieve high performance (Aylward et al., 2018). For instance, Sirona, an Indian biodegradable sanitary napkin producer, relies on China for its raw materials because of superior quality and better pricing (ETV Bharat, 2020). Although Aakar Innovations is currently trying to replace the wood pulp absorbent core with indigenous materials such as bamboo or hyacinth, grand investments are still needed before it can be commercialized. Aakar thus currently imports wood pulp from Canada and the U.S.A (J.Mandal)

1.3.2 Disposal

The environmental impact from menstrual products also comes from its disposable nature. It has been estimated that 12.3 billion sanitary napkins are used every year in India, resulting in a huge amount of waste (Path, 2017b).

1.3.2.1 Waste management rules

The rules on how sanitary pads or tampons should be disposed of in India are quite ambiguous. On the one hand, according to the Indian Solid Waste Management (SWM) Rules 2016, disposable pads fall under the “solid waste” category. This implies that the sanitary waste should be disposed of in a bin destined for dry waste and should be separated into biodegradable and non-biodegradable waste. On the other hand, the Bio-Medical Waste Management (BWM) rules indicates that items which are contaminated with blood are considered as biomedical waste and must thus be incinerated, autoclaved or microwaved to eliminate the pathogens. Manufacturers or brand owners of disposable products, sanitary pads and diapers have several responsibilities when it comes to the disposal of their products. One of these rules is that manufacturers, brand owners, and distributors of sanitary napkins and diapers should use as much recyclable materials as they can. If not, they should provide customers with a pouch with each sanitary napkin so that waste pickers are not exposed to sanitary waste. This pouch should be easily identified by a symbol so that workers can immediately recognize them. Finally, they have the duty to educate their consumers about the packaging and disposal of their products (Central Pollution Control Board, 2018). As a consequence of this rule and of the taboo

surrounding menstrual blood, most women wrap their sanitary pads in plastic and some even wash the blood off them beforehand. It has been estimated by Lopez, (2020) that these practices could lead by 2030 to another 1,800 million tons of plastic and water

1.3.2.2 Disposal practices

Despite the existence of waste management rules, most of the sanitary pads do not end up in landfills. Disposal of sanitary waste is problematic because of the threat it poses on the health and the environment. The impact is more prominent in India due to ill-organised solid waste management in municipalities. Weak collection, disposal and transport networks in towns and villages are omnipresent in the subcontinent (Central Pollution Control Board, 2018). According to a systematic review and meta-analysis from van Eijk et al (2016) involving 138 studies: 45% of the population throws menstrual absorbents in the routine waste, 23% throw them in the open (i.e., open spaces, rivers, lakes, wells, roadsides, etc.), 17% burn them and 9% flush them in the toilet.

Table 2 Menstrual Waste Disposal Practices Among Adolescent Girls in India (van Eijk et al., 2016, retrieved from Path 2017a)

Disposal of menstrual absorbent	Total pooled proportion*	Rural pooled proportion*	Urban pooled proportion*	Slum pooled proportion*	Concerns with disposal method
Throw with routine waste/dustbin	45	28	70	51	Menstrual waste enters the solid waste stream and is subject to the same treatment as other solid waste – placed in landfills to disintegrate over hundreds of years
Thrown away in the open (open spaces, rivers, lakes, wells, roadside etc.)	23	28	15	30	Menstrual waste can contaminate water sources, clog drains
Burning (open)	17	15	23	-	Burning of commercially available pads at low temperatures can create odours and expose nearby population
Burying	25	33	12	-	Burial is not done effectively, and without appropriate composting, waste will take hundreds of years to degrade
In toilets (flushing down the toilet, throwing in pit latrine)	9	10	7	-	Used pads mixed with faecal sludge, complicates disposal of that sludge (in the case of septic tanks) or interferes with the production of usable manure (in the case of leach pits)

As can be seen on the table here above, disposal habits change between rural, urban and slum areas. In urban areas, where commercial menstrual products are the most widely used, they are mostly thrown away in dustbins (70%). In rural areas, more women use non-commercial, reusable products, which results in less waste than in urban areas where commercial products

are widespread. Also, different disposal methods are more common due to the lack of collection services. It can be observed that approximately 28% of women throws menstrual products with routine waste, 28% discards them in the open, 33% buries them, 15% burns them and 10% throws them in the toilets or in the latrines. In slum areas, women have less options. It has been observed that women either throw their menstrual waste in the routine waste (van Eijk et al., 2016) or in the pit latrines as incineration and burial are difficult due to insufficient privacy (Kaur et al., 2018).

Unfortunately, all these different disposal methods have environmental implications. One of the main reasons for this is that menstrual products are mainly made of plastic (see 1.3.1 production) and contain chemicals, making it difficult to decompose. An issue which is specific with throwing menstrual waste with routine waste is that, although it ends up in landfills, sanitary pads take 500 to 800 years to biodegrade. The polyethylene used in sanitary pads is not recognized by microorganisms as foods and hence they do not break it down. Polyethylene can also be disintegrated through photo degradation but once buried in the landfill, there is often not enough light for this to happen (Peberdy, 2019). But menstrual products often don't end up in landfills as they are often burned, buried, thrown in the open or flushed down the toilet. The issue with flushing menstrual products in the toilet is twofold. First, because drainage systems were designed for urine and faeces, they cannot handle menstrual absorbents. When menstrual products are flushed down the toilet, they expand because of all the liquid absorbed, and hence, they cannot pass through the sewer pipe (Kaur et al., 2018). Improper disposal also leads to the transport of these products through the sewage system and their accumulation on beaches and other public areas (Peberdy, 2019). Burning the used tampons and napkins produces harmful gases that can affect health and the environment. Indeed, when inorganic materials are incinerated at low temperatures, toxic and carcinogenic dioxins are produced (Kaur et al., 2018). Also, sanitary products often contain chemicals used for bleaching, such as organochlorine compounds, which when buried in the soil disrupt the soil's microbiota and take a long time to decompose (Kaur et al., 2018).

1.4 Field's response

In reaction to the problems related to menstruation, several stakeholders have taken initiatives to address the problems faced by women. These initiatives focus either on hardware or software. Hardware interventions corresponds to the provision of menstrual products or improving the infrastructure and software interventions focus on education and awareness (Muralidharan et al., 2015). An overview of the different stakeholders and their initiatives is presented below.

1.4.1 Government

1.4.1.1 Ministries

Policies and programs to improve MHH are introduced by several federal Ministries in India, each tackling this cross-cutting issue with its own approach. While MHH is not the main priority of these Ministries, it is often a sub-objective, such as improving the health and education of women and adolescent girls. Five different ministries have implemented policies or programs: the Ministry of Health and Family Welfare, the Ministry of Human Resource Development and the Ministry of Women and Child Development, the Ministry of Drinking Water and Sanitation, the Ministry of Urban Development (Geertz et al., 2016). The different measures have been summarised by Geertz et al.'s (2016) report and are shortly described in the table 3 below:

Table 3 Overview of the MHH Policies and Programs in India (Geertz et al., 2016)

Ministry	Policy or Program	Area of focus
Ministry of Human Resource Development	Launched two programs since 2000. First the “Sarva Siksha Abhiyan” and then the “Rashtriya Sarva Shiksha Abhiyan” in 2009, both with the objective to enhance the access to secondary education and improving sanitation infrastructure in schools to diminish school absenteeism and dropouts (Geertz et al., 2016).	Infrastructure
The Ministry of Women and Child Development	Developed the “SABLA” program in 2011 which is a service whose aim is to improve health, nutrition and empowerment of girls and the program strives to achieve this by, among other things, raising awareness about MHH to adolescent girls through “Anganwadi” Centers (Geertz et al., 2016). These centres were launched in 1975 as part of the Integrated Child Development Services program to address child hunger and malnutrition. Health and early learning initiatives are also implemented in these centres (Government of Maharashtra, 2021).	Awareness
Ministry of Health and Family Welfare	Set up a scheme, in 2011, to increase awareness among adolescent girls on Menstrual Hygiene, to expand the access to and use of high-quality sanitary napkins to adolescent girls in rural areas and to ensure an environmentally friendly disposal of sanitary pads (Muralidharan et al., 2015). Another scheme was launched in 2014, the “Rashtriya Kishor Swasthya Karyakram”, which focused on providing access to MHH information, support and MHH products through “Adolescent Friendly Health Clinics” and counsellors (Geertz et al., 2016).	Awareness Access Infrastructure
Ministry of Drinking Water and Sanitation	In 2014, a national sanitation program called “Swachh Bharat Mission” or “Clean India Mission” was launched. This program is run in rural areas by the Ministry of Drinking Water and Sanitation and by the Ministry of Urban Development in urban areas. The programme focuses on developing sanitation infrastructures such as personal and community toilets, solid waste management, etc. Another area of focus is the change of behaviours through awareness programs (Geertz et al., 2016).	Awareness Access Infrastructure
Ministry of Urban Development		Infrastructure

Ministry of Rural Development	Through the National Rural Livelihood Mission, self-help groups and small manufacturers are supported to sell or produce sanitary pads (Rastogi, 2018).	Awareness Access
Ministry of Environment and Forests	Solid Waste Management Guidelines 2016 (see 1.3.2.1 waste management rules)	Infrastructure
Ministry of Chemicals and Fertilizers	Launched in 2018 an oxodegradable sanitary pad called Suvidha. Through the “Suvidha Initiative”, the government these pads at 1 INR each through “Jan Aushadhi” centers across India (Chandna, 2020). These centres are part of a scheme launched by the Department of Pharmaceuticals to provide quality medicines at affordable prices (Bureau of Pharma PSUs of India, 2021)	Access

As can be seen from these different schemes, no Ministry owns the MHH agenda, leading to a siloed approach. This has been highlighted by the National Guidelines for Menstrual Hygiene Management which were developed in 2015 by the Ministry of Drinking Water and Sanitation, with the support of UNICEF India. These guidelines urge the Ministries to have a coordinated approach to improve MHH (Geertz et al., 2016).

1.4.1.2 State governments

The federal nature of the Republic of India, comprising 29 states and 7 union territories, allows regional and local powers a range of initiatives. Some regional entities have taken local actions in MHH. The state governments of Uttar Pradesh, Rajasthan, Maharashtra, Odisha, Chhattisgarh, Andhra Pradesh and Kerala also distribute sanitary napkins in schools (Kumar, 2020). For instance, the state of Andhra Pradesh has decided to supply girls with ten free sanitary napkins to menstruating girls in schools. In states that do not distribute sanitary pads in schools, there are alternatives, such as in Bihar, where young girls are given 300 INR to buy sanitary towels under the “Kishori Swasthya Yojana” programme (New Indian Express, 2021). These programs can help reduce school absenteeism. Unfortunately, girls who do not attend schools are de facto excluded from such enterprises (Kumar, 2020).

Although the overwhelming majority of these schemes distributes sanitary pads, a municipality in Kerala called Alappuzha noteworthy planned to distribute 5,000 menstrual cups⁴ for free. This municipality launched this project with the aim to raise awareness about this menstrual product and to tackle its waste management problems (Sajimon, 2019)

⁴ Definition by the The American Heritage Medical Dictionary (n.d.) : « *A reusable cup-shaped device made of latex, silicone or thermoplastic elastome, which is placed inside the vagina, held in place by suction and used to collect menstrual flow in lieu of absorbent pads. Menstrual cups are more cost-efficient and environmentally friendly than tampons, as most are reusable, and they are the method of choice for heavy menstrual bleeding.* »

1.4.1.3 Bureau of Indian Standards

Currently, there are no regulations on the safety of menstrual products or standards for their composition and production in India. The current sanitary napkins standards from the Bureau of Indian Standards (BIS) which date back to 1980, are limited to the physical properties of the product and do not indicate acceptable levels of chemicals or dioxins. These standards were reviewed in 2019 by BIS who added requirements for the compostability of sanitary napkins, but no requirements for chemical composition analysis or tolerance limits. However, the Indian government is currently trying to improve the quality standards for menstrual products to make them safe to use (Das, 2020).

1.4.1.4 Exemption of the Goods and Services Tax

In 2017, the Indian government launched the Goods and Services Tax (GST) which imposed a 12% tax on sanitary pads. This sparked protests, petitions and court cases which led to the exemption of the tax in 2018. In a country where few women can afford to pay for menstrual products, campaigners argued that the tax would make them even more unaffordable and hence further limit the access to safe menstrual protection. This tax exemption was hence deemed a success as many people saw it as an essential step towards tackling period poverty. Nevertheless, this tax exemption did not lead to the expected outcomes (Banerji, 2018). Firstly, the face value price for the customers experienced a smaller drop than had been expected. Indeed, before the tax exemption, manufacturers had to pay an input tax credit which they got back afterwards. Now, because of the tax exemption, the tax input credit is not refunded, and hence to earn the same margins as they did before, manufacturers must charge the distributors more, leading to no significant cut in prices. Secondly, another issue is that foreign manufacturers can import sanitary napkins more easily as, now, only the custom duty must be paid and not the GST. Although the quality of the products imported is lower, the price advantage allows them to easily penetrate the market (Mohan, 2019)

1.4.2 Non-governmental organizations and international development agencies

International development agencies and NGOs working in the field of water, sanitation and hygiene (WASH) have been the strong proponents of MHH in India. They are active both at the policy level and at the implementation level and have effectively engaged all stakeholders from the government to the community (Dasra, 2015). For instance, UNICEF works in collaboration with the government on improving education for girls through MHH interventions

in schools and communities. Other international development organizations are the Water Supply and Sanitation Collaborative Council (WSSCC), WaterAid, Wash United, USAid etc. India also hosts numerous local NGOs working towards improving MHH in India through a variety of interventions. Several global NGOs are also active in the Indian MHH field such as MHhub which is a German non-profit and social business focusing on knowledge sharing, ecosystem building and advocacy promotion at a global level (MHhub, 2021). Another collective whose aim is to support and attract investments in MHH is the Global Menstruation Collective which includes representatives from United Nations (UN) agencies, academia, governments, donors, the private sector, existing coalitions, advocacy organizations, independent consultants and international NGOs (Global Menstrual Collective, n.d.).

1.4.3 Corporates

Several companies are working to improve the MHH of young girls in rural and peri-urban India. These companies work with state governments and non-profit organisations to raise awareness of hygiene practices, provide sanitary napkins and infrastructure such as clean latrines and incinerators. Companies operating in this field, such as Johnson & Johnson (J&J) and Procter & Gamble (P&G), undertake corporate social responsibility (CSR) projects in partnership with NGOs and government agencies. Nevertheless, as these companies are operating in the field of menstrual health, these are also value-added activities as they attract new customers. Other companies, (e.g., TVS-Electronics, Bharat Heavy Electricals) do it as part of their CSR programmes (Dasra, 2015). The amendment to the Companies Act in 2013 has significantly boosted the amount of funds available to Indian NGOs. This law requires companies which have a net worth of INR 500 million (5.7 million €) or more, or a turnover of INR 1,000 million (11.5 million €) or more, or a net profit of INR 5 million (57,338 €) or more, to establish a CSR committee. This act necessitates that companies allocate at least 2% of the average net profits of the three preceding financial years for the implementation of its CSR plan. (British Council, 2016)

1.4.4 Self-Help Groups

Women's groups have developed rapidly as rural socio-economic institutions over the last three decades, particularly in South Asia. Over the last three decades, In India, many rural socio-economic programs have been implemented through Self-Help Groups (SHG). These groups were initially established as savings and credit groups, but their role has evolved into raising health and nutrition awareness, advocating for the implementation of various government projects, and addressing social issues related to gender and caste discrimination. These groups

are typically made up of ten to twenty women from the same neighbourhood and with similar ethnical and economic backgrounds. Government agencies and NGOs provide a range of support to facilitate their establishment, such as access to bank accounts and credit, integration into higher-level groups, information on agricultural practices and practical tools, training on livelihood activities, etc (Kumar et al., 2021). The Government of India has promoted these decentralized models across India, namely through its National Rural Livelihood Mission program, to foster livelihoods in rural communities (Geertz et al., 2016). These groups carry out the sale and distribution of sanitary pads.

1.4.5 Social Enterprises

Social enterprises⁵ are testing aspects of product design, environmentally friendly materials, and low-cost production processes to meet the needs of rural and low-income populations (Dasra, 2015). These social enterprises are thus providing solutions which are also reducing the impact on the environment, but not always.

First, an example of a social enterprises focusing on the social aspect is Jayashree Industries which has developed one of the first low-cost disposable sanitary pad manufacturing machine. Also, Aakar Innovations has adopted a similar business model but is producing compostable sanitary pads instead of disposable ones, thus providing both a social and an environmental solution. Both these companies sell their machines to SHGs, entrepreneurs and NGOs across India, thus encouraging local production and the empowerment of women (Geertz et al., 2016). Finally, several social enterprises commercialising environmentally friendly products, such as Saathi, Eco-Femme, FabPad and Avni have emerged in recent years. These enterprises have also launched strong social initiatives in parallel to their business (see 3.2 presentation of the social enterprises interviewed).

1.4.6 Research Organizations

Except for a research carried out by A.C. Nielsen in collaboration with Plan India in 2010, previous studies have mostly been private and have focused on presenting the prevalence of the problem, cultural influences and recommendations. With the support of large organisations and donors, the focus has started to switch to evidence-based research (Dasra, 2015).

⁵ Definition according to the Cambridge dictionary (n.d.): « *an organization that aims to make money in order to serve a useful social purpose: By selling goods and services in the open market, social enterprises create employment and reinvest their profits back into their business or the local community.* »

1.4.7 Media & Arts

The Indian media has evolved greatly since the ban on commercial sanitary pads advertising in 1990. Now, sanitary pads are heavily marketed in the print media and on television. Nevertheless, it has mainly advertised for sanitary napkins as aspirational products and has not addressed the lack of awareness (Dasra, 2015). The movie entertainment industry also plays an important role in shaping the opinions of communities and, to some extent, address the social problems of a country. In India, films and documentaries such as "Padman" (2018) and "The Period" (2020) have brought the debate about menstruation to the forefront and dispelled the stigma surrounding it (Babbar & Saluja, 2020).

1.5 Conclusion - see Table 4 & 5

Table 4 General overview of issues & stakeholders' response to MHH - Own work

POOR MENSTRUAL HEALTH AND HYGIENE				
Problems	Materials		Infrastructure	Awareness
	Accessibility	Affordability	Lack of waste management system, sanitation facilities and water	Lack of awareness about menstruation and the existing menstrual products
Stakeholders	- Governments - NGOs - Social Enterprises - MCNs - Self-Help groups - Corporates		- Governments - NGOs - Corporates	- Governments - NGOs - Social Enterprises - MCNs - Self-Help groups - Researchers - Media
Barriers	- Insufficient demand for menstrual products leading to no stocks in shops - Increased cost for manufacturers of commercializing products in rural areas - COVID-19	- Raw materials sourced from abroad - Household prioritization challenges	- Mostly men overseeing decision-making for the construction of facilities - COVID-19	- Taboo/Silence/Menstrual Stigma - Lack of formal education on menstruation in schools - Harmful narrative about cloth - Not involving men in the conversation
Enablers	- Decentralized small-scale units - Growth of e-commerce - Distribution of free or subsidized menstrual products	- Low-cost sanitary pads - Tax exemption - Distribution of free or subsidized menstrual products - Reusable menstrual products - Growth of middle class leading to more disposable income - Mixed use of menstrual products	- Installation of incinerators - Government and NGO interventions - Reduction of open defecation	- Rising levels of literacy - Digitalization of India - Rising exposure to mass media - Movies tackling taboos (e.g. Padman, Period)

Table 5 Environmental specific issues related to MHH - Own work

ENVIRONMENTAL	
Barriers	- Distribution of free or subsidized sanitary pads - No advertisements about reusable products - Low-cost sanitary pads produced by MCNs or imported from cheaper countries - Law forcing manufacturers to provide a wrapper with each sanitary pad - Harmful narrative about cloth - Sanitary pads which have become an aspirational product
Enablers	- Increasing number of manufacturer and distributor of reusable menstrual products - Growing environmental awareness

2 Part II: Existing and developing responses

2.1 Environmentally friendly menstrual products

2.1.1 The current menstrual product market

Based on the NFHS IV data, there are around 93 million Adolescent AGYW aged 15-24 who are menstruating. Within this group, approximately 41% (37.7 million) use only homemade cloth absorbents, 38% (35.4 million) use only commercial pads, and 21% (19.2 million) use both commercial and homemade absorbents. Among these AGYW, not even 1% (500,000) stated that they were using other or no protection at all. There are clear differences in product use between rural and urban areas. There are only 21% of AGYW which employ solely homemade cloth protection compared to 50% in rural areas. Moreover, the bulk of AGYW who are solely using homemade cloth absorbents (37,7 million) can be found in rural areas, namely 83% (Aylward et al., 2018).

As per the Netscribes' (2021) market research, the feminine hygiene products market was worth INR 32.66 billion in 2020 and is predicted to reach INR 70.20 billion by 2025, growing at a compound annual growth rate (CAGR) of 16.87% between 2021 and 2025.

2.1.2 4P (Product, Price, Place, Promotion) & MHH

The present section builds up on the acclaimed theoretical framework of the 4P as defined by E. Jerome McCarthy (1960). It is aimed at better understanding the MHH elements and presenting alternatives in a comparable fashion.

2.1.2.1 Products

Several products can be used as menstrual protection. Although the sanitary pad is the commercial product which has the biggest penetration rate in India, it is not the only solution. This part will thus present three eco-friendly alternatives to the sanitary pads which are available for menstruators to handle their period. As sanitary pads have already been introduced (see 1.3.1 production), they will not be presented in this part. It has also been chosen not to mention period panties which are underwear worn as menstrual absorbents. The reason therefore is that these are in essence quite similar to reusable pads and hence it would have been redundant to address both products. Additionally, period panties are more expensive than reusable pads, which makes them straightforwardly less attractive.

Compostable pads

Compostable pads are similar to disposable sanitary pads in their shape and usage but are different when it comes to the raw material used. The plastic constituents of conventional pads are replaced with compostable alternatives. Hence, the materials which must be substituted are situated in the top layer, which is the permeable sheet, the bottom layer and the petrochemically derived super absorbent polymer (SAP). The only part which is not compostable but usually not replaced due to its nominal amount is the adhesive. As a result of research and innovative technologies, local and natural products such as hyacinth pulp, corn starch bamboo fiber, banana fiber and jute are increasingly being used as raw materials for compostable sanitary pads. According to Kristin Kagetsu, co-founder of “Saathi”, a compostable pad manufacturer, banana and bamboo fiber require one-sixth of the water and one-tenth of the fertilizer used in cotton production. Furthermore, the bamboo and banana fiber used originate from agro-waste or by-products of the crop, and hence no extra land is required to produce these fibers. Unfortunately, the cost of producing such compostable pads is higher than for regular disposable sanitary pads and hence investments are required for research and development and to support this sector in its aim to provide affordable solutions to the wider population (Chakravorty, 2020).

An increasing number of sanitary pads advertise themselves as environmentally friendly by claiming that they are biodegradable, oxo-degradable or compostable (Mahajan, 2019). These claims do not guarantee that the product is made from non-fossil fuel raw materials or that it will turn into organic matter in a short amount of time. This can be misleading for the consumer and it is thus important to clarify the difference between these terms. Oxo-degradable products contain additives which help decomposition into microplastics through oxidation. Biodegradable materials decompose into carbon dioxide, water and inorganic compounds under certain conditions, but it can take varying periods of time (European Environment Agency, 2020). Compostable materials are expected to decompose into carbon dioxide, water and other inorganic compounds within six to twelve months if they go through the composting process (Mahajan, 2019). Hence, the pads which have the least negative impact on the environment are the compostable ones. Nevertheless, since no regulatory authority has set requirements on compostability, many brands falsely claim to be compostable.

Menstrual cup

Although the menstrual cup has been around for decades, it is not the most mainstream option. Yet, according to van Eijk et al. (2019), menstrual cups have the potential to replace sanitary

napkins in high, low and middle-income countries. It is a reusable menstrual product made of either medical grade silicon, latex, rubber or elastomer which is inserted into the vagina to collect menstrual fluid. It is a small and flexible device which is shaped like a bell. Most menstrual cup brand offer a small and a larger size. Depending on its size, this changeable receptacle can contain 10-38 ml of blood (van Eijk et al., 2019) which is beyond sufficient considering a woman usually loses 30 to 60 ml during her entire period (Mahajan, 2019). The cup thus provides good protection and should be changed every 4 to 12 hours, depending on the menstruator's flow (van Eijk et al., 2019). The cup can be emptied and reused throughout the cycle and must be sanitized at the end by boiling it in water for several minutes. The cup can last between five to ten years and thus represents both an affordable and an eco-friendly option as it drastically reduces the amount of waste generated (Mahajan, 2019).

Many menstrual cups in India are currently imported from abroad with prices ranging from 400 to 3,000 INR (Path, 2017b). These prices depend on the quality of the product and the country they are imported from - with expensive cups usually imported from the U.S.A, the European Union and Japan. In India, although the BSI has started revising the standards for feminine hygiene products, menstrual cups are not regulated yet (Sugathan, 2018). Consequently, cheap cups are imported from China and sold online to Indian customers, raising quality concerns. Menstrual cups are also being produced locally in India, which brings down its cost for the consumers (Mahajan, 2019).

Reusable cloth pads

Reusable pads, which are also called “cloth pads”, are sanitary pads which can be washed and reused. To begin with, the raw material used for the absorbent core and the top and leak-proof bottom layer vary from one pad to the other. Some pads are made from pure cotton and others are made of synthetic fabrics such as variations of polyester, which is the most common type. Many reusable pads have the bottom layer of the pads coated with polyurethane for it to be leak-proof. Some reusable pads, such as the “Avni Safepads”, are treated with an antimicrobial treatment which reduces microbial growth. This can help prevent RTI for women incapable of changing pads frequently. These pads can be washed and reused for approximately one or two years, depending on the brand and on the level of maintenance. The impact they have on the environment is thus way less than that of single-use disposable pads.

Currently, the demand and market share for these reusable pads is quite low in India and there are very few players on the domestic market (Geertz et al., 2016).

Regarding the quality standards of these pads, after a 2-year process, the Government of India, in collaboration with NGOs and the private sector, has developed standards for reusable cloth pads and period panties (A.Muralidharan).

2.1.2.2 Price

The price ranges of the different menstrual products vary greatly. For instance, Geertz et al., (2016) has estimated that large commercial manufacturers price a single disposable sanitary pad between 5.3 and 8.7 INR (0.06-0.1€). The price of a low-cost sanitary pad from a small manufacturer range from 1 – 3.5 INR (0.01-0.04€). These price range varies depending on the features of the pad such as wings (cf. extra surface) or thickness. The detail of these numbers can be found in Appendix 1. After desktop research on Indian retailers (i.e. Amazon India and Flipkart), it has been estimated that the price of a single compostable pad goes from 5 to 30 INR (0.06 - 0.35€) with an Aakar Innovations pad priced at 5 INR compared to 30 INR for Saathi. The prices of reusable pads range from 85 to 400 INR (0.97-4.58€) per pad. Regarding the menstrual cups, the price can vary from 105 to 3,000 INR (1.25-34.33€) (Path, 2017b)

As menstrual cups and reusable pads are used during several years, it is interesting to compare the price per cycle between the four options. Firstly, if it is considered that on average, a woman uses ten sanitary pads every month, she must thus pay between 53- 87 INR (0.61-1.00€) for her disposable pads or between 10 and 35 INR (0.11-0.40€) for her compostable pads every month/cycle. Although the reusable options represent a much higher upfront investment, their use is cheaper in the long run. Indeed, menstrual cups can be used for five to ten years and reusable pads for up to two years (Path, 2017b). Secondly, if it is assumed that the menstrual cup will be used for ten years, its cost per cycle will range between 8.75 and 25 INR (0.10-0.29€). Thirdly, since reusable pads must be washed and dried, several reusable pads must be purchased. Although the number of reusable pads needed to manage a cycle will depend on a woman's cycle and context, for this research it will be assumed that six pads are needed to manage a cycle. Consequently, if a cloth pad is reused for two years, its cost per cycle will be between 17.7 and 83.3 INR (0,20-0,95€). As can be seen from the results above, the cost per cycle of reusable options is much lower, in some cases up to 5 times than disposable options. Nevertheless, these products require an upfront investment, a deterrent for many, much higher than disposable pads.

2.1.2.3 Place

There are several different ways menstrual products manufacturers reach women.

Retail:

The most used distribution channel for the feminine hygiene industry in 2019 were supermarkets and hypermarkets, followed by pharmacies (Maximize Market Research, 2019). These channels commercialize mostly disposable sanitary pads from large manufacturers or multinationals. However, this does not mean that commercial sanitary pads can be found everywhere. With 12 million retail outlets, the Indian retail sector is one of the densest in the world. The unorganized sector - which refers to traditional forms of low-cost retailing, such as local corner stores, self-operated general stores, convenience stores, pushcarts, and street vendors - accounts for almost 95% of the total retail trade (Bhabesh, 2015). As illustration, P&Gs Hygiene and Healthcare department, prime purveyor of disposable pads (e.g., Always brand), reaches 3.5 million retail outlets (Sambamoorthy & Dhruv, 2020).

The availability of reusable products in the retail sector is very limited. They are usually not commercialized in the organized sector given the hard competition for shelf-space resulting from their low turnover rate compared to single-use products (D,Dhelia). Furthermore, they are not very present in the unorganized sector either because reusable products currently reach a privileged section of society due to lack of awareness and affordability in other segments of the population. Hence, they are merely present in a few brick and mortar shops (Path, 2017a).

Online

Next, the online segment is increasingly becoming an important distribution channel for the feminine hygiene industry (Maximize Market Research, 2019). Although every type of menstrual product can be found online but this channel does not reach rural and low-income community. Currently, e-commerce is well established in tier-1 cities and is growing steadily in tier 2 and 3 cities⁶. The rise in e-commerce use helps democratize the market for female hygiene products in India. According to Nishit Garg from Flipkart, owing to the privacy and anonymity of private shopping, more women dare to try alternative products such as tampons and menstrual cups. Indeed, buying menstrual products at a local pharmacy or store, which are usually staffed by men, creates concerns about social image. Although 80% of the MHH purchases made on the Indian e-commerce are sanitary pads, the rest comprises more innovative products such as urination devices and menstrual cups. Flipkart declared that from April to June of 2019 its feminine hygiene products sales grew five folds, this driven mainly by demand from

⁶ Classification system proposed by the Reserve Bank of India (2001). Tier-1 cities have populations above 100,000, Tier-2 cities between 50,000 to 99,999 and Tier-3 between 20,000 to 49,999

tier-2 and tier-3 cities. As stated by Garg, this is because these cities often lack brick-and-mortar stores where women can purchase these products (Tanwar, 2019).

Distribution of free or subsidised menstrual products

As already mentioned in (see 1.4 Field's response), women in low-income communities and rural areas access sanitary pads through the distribution of free or subsidised menstrual products. Common channels of distribution are schools, and "Anganwadi" centers (National Health Mission, 2016)

2.1.2.4 Promotion

Promotion includes decisions about advertising, sales opportunities, direct marketing, public relations, advertising budgets etc. The main objective of promotion is to increase awareness about the products offered by a company. It helps convince consumers to select a certain product over another on the market (Corporate Finance Institute, 2020). Large manufacturers and multinationals have been very successful in raising awareness about their sanitary pads. For instance, out of the 5.12 billion sanitary pads sold in 2016, P&G and J&J accounted for 75% of them (Aylward et al., 2018). This is i.a. due to their large marketing budget, which usually accounts for 5-10% of their sales revenue. With such resources and scale, they can launch large awareness campaigns both offline and online.

Mass scale offline advertisement campaigns, costly on various dimensions (e.g., infrastructure rental) are mostly restricted to large players. An example of such a campaign is P&G's Parivartan Program which provides sanitary pads and education to two and a half million girls in over 15,000 schools (Aylward et al., 2018). By doing this, P&G is focusing on "point of market-entry", which is the point where a potential customer becomes receptive to the offering (Sambamoorthy & Punmiya, 2016). This strategy is adopted because it has been observed that many girls stay loyal to the first sanitary pad brand they were in touch with, which is usually the first one their mother gave them (Krithika & Berith, 2019). Next, multinationals have also created large mass media marketing campaigns focusing on comfort and convenience. These campaigns often portray disposable pads as a saviour which will liberate women from oppression and make them modern and efficient (Garikipati, 2021). This is also reflected in the brand names such as "Whisper" or "Stayfree" which emphasize the need to hide the blood and to give the impression that they are not menstruating (Arora, 2017). This has several implications. To begin with, these campaigns further reinforce the stigmatization process and

silence surrounding menstruation, which is already widespread in the country (Arora, 2017). Also, these campaigns have created a large aspirational demand for pads.

Another issue is that marketing campaigns often do not display the blood thus further accentuating the idea that blood is dirty, unclean or impure (Garikipati, 2021). Nevertheless, this seems to be moving in the right direction. In 2021, Whisper India, a well distributed brand on the subcontinent, has started using red instead of blue liquid, which is a step towards normalizing period blood.

With the rise of digitalization in India (see 2.2.5.2 Technology advances), many menstrual product manufacturers, both large and small, raise awareness and advertise their products online. Several media campaigns aiming to break the taboo are launched on social media platforms. Menstrual product producers also educate their customers on menstruation and related topics. Advertising online also has the advantage of starting up more 1:1 targeted conversation with the audience, which is a step towards breaking the silence. Unfortunately, these online campaigns are mainly restricted to people which have access to social media or internet, thus leaving out low-income communities. It is henceforth a challenge for players with small budgets to raise awareness in rural areas.

2.1.2.5 Summary - See table 4

Table 6 Overview of 4P analysis, MHH products - own work with source : (Path, 2017b)

PRODUCT	PRICE		PLACE	PROMOTION
	Per product	Per cycle*		
 6-12 months to decompose	Large commercial manufacturers: 5.3 – 8.7 INR/pad (0.06-0.1€) Low-cost, small manufacturers 1 – 3,5 INR/pad (0.01-0.04€) (Geertz et al., 2016)	Large commercial manufacturers: 53- 87 INR (0.61-1.00€) Low-cost, small manufacturers 10 – 35 INR (0.11-0.40€)	High Rural and low income: limited to medical shops, schools and Anganwandi centres	Awareness: Very high across India
 +/- 500-800 years to decompose	5-30 INR/pad* (0.06 - 0.35€) *5 INR/pad = Aakar Innovations 30 INR/pad = Saathi	50– 300 INR (0.57-3.43€)	Limited: very few manufacturers	Awareness: Low
 Reusable for 5 to 10 years	105-3,000 INR* (1.25-34.33€) *based on desktop research of Indian retailers	8.7-25 INR (0.10-0.29€)	Limited: Low income clusters and online	Awareness: Low
 Reusable for 1 to 2 years	85-400INR/pad (0.97€-4.58€) *based on desktop research of Indian retailers	17.7 – 83.3 INR (0.20-0.95€)	Limited: Low income clusters and online	Awareness: Low
*assumption: 10 pads/cycle, 5 reusable pads/cycle for 2 years, 1 menstrual cup for 10 years				

2.2 Social entrepreneurship

Social entrepreneurship is being touted as part of the answer to the world's social and sustainability challenges. Investors, governments, NGOs, and other stakeholders expect them to provide not only economic, but also social and environmental solutions for the people at the “bottom of the pyramid” (BOP) and society as a whole (Miles & Datta, 2012). It has been

estimated that there are approximately two million social enterprises in India - making it one of the biggest and most dynamic hubs for social enterprises worldwide. These social enterprises improve the lives of millions of Indians by providing access to basic services and products at an affordable price to markets which are underserved by the conventional companies (Ganesh et al., 2018). This chapter will thus set the context by giving the definition of social entrepreneurship and then will provide an overview of the social enterprise landscape in India.

2.2.1 Definition

Research on social entrepreneurship has been underway for the past two decades, and there is now a vast peer-reviewed literature on the subject. This has led to a growing acceptance and understanding of the phenomenon worldwide. The proliferation of grey, empirical and conceptual literature has uncovered different dimensions of the social enterprise. Although, the term is increasingly common in India and abroad, practitioners and researchers still disagree on the exact definition of a social enterprise (Sengupta & Sahay, 2018). For the clarity of this research, it is thus important to lay the foundations of what is meant by “social enterprise” in this thesis and what characterizes it in India.

According to Khare and Joshi (2018): “[social entrepreneurs] *solve wide-ranging issues such as environmental degradation, waste management, health care, education, racial, gender and other forms of discrimination, issues related to satisfying basic human needs that the prevalent political, social or economic institutions are unable to solve*”. Social enterprises should thus have a core mission which is closely related to community or social engagement or environmental protection (Khare and Joshi, 2018). Hence, in the case of menstrual product manufacturers, the mere fact that they are producing environmentally friendly menstrual products is not enough to qualify them as social enterprise. For instance, on Amazon India, many resellers of cheap, imported menstrual cups can be found. They showcase prices as low as 105 INR per cup, with no strong social or environmental mission advertised (see Appendix 2). Additionally, an important component is the commercial one. The major differing aspect between a social enterprise and a traditional enterprise or an NGO is the fact that it fulfils a social mission, while at the same time pursuing economic independence by earning their own income. These are also different to corporations’ CSR activities because the social enterprises’ social mission is an integral part of their business plan (Kruse, 2021). Social enterprises can thus be described as “*an enterprise whose business model is to address unmet socioeconomic needs in communities in an innovative and financially sustainable way by creating social value*”.

and generating revenue for the enterprise and its stakeholders” (Kruse, 2021, p.2). In this work, social enterprises having both an environmental mission and a social mission will be analysed

2.2.2 Social Enterprises and Menstrual Health and Hygiene

Currently, the global menstrual product industry is dominated by four multinationals, namely P&G, J&J, Kimberly Clark and SCA, which holds together 80% of the market shares (Punzi & Werner, 2020). These sanitary pads are often too expensive for rural areas and low-income communities and hence several social enterprises have emerged in recent years to address this issue. Social enterprises have been established with social missions such as changing the discourse surrounding menstruation, fighting for gender equality, providing products, education, jobs etc. (Punzi & Werner, 2020). As mentioned before (1.4.5 Social Enterprises), to reach low-income communities, social enterprises such as Jayashree Industries have developed low-cost manufacturing machines to provide women with inexpensive pads and livelihood opportunities. However, disposable pads have not been the only products commercialized by these actors.

Although concerns around environmentally friendly menstrual product gained traction around 2015, companies commercializing these products have been around since much longer. Before the turn of the 21st century, brands commercializing reusable products were not associated with terms such as “social enterprises” and instead highlighted the environmental benefits of their products. These environmentally friendly companies also did not raise awareness about menstruation. A reason for this is that Western countries did not perceive menstrual equity as a topic of prime importance. Another reason is that these companies did not position their products as substitutes or alternatives to the sanitary pads sold by multinationals (Punzi & Werner, 2020).

In recent years, however, new companies commercialising the same environmentally friendly products but with a social mission have surfaced. These social enterprises in low-income communities do not only focus on distribution of environmentally friendly products but also carry out other activities such as educational sessions and workshops. Another characteristic is the fact that they commonly hire underprivileged local women in the manufacturing process to provide them with livelihood opportunities. In contrast, social enterprises in the West commercializing environmental friendly menstrual product have a different aim. Their goal is mostly to create lifestyle brands which provide pleasant experience for women through good

customer support, ways to become part of communities, opportunities to ask questions online et cetera. Next, they are starting to approach menstrual equity issues which are also present in the West, especially among underprivileged and homeless people (Punzi & Werner, 2020).

2.2.3 The Indian landscape

Although social enterprises are a global phenomenon, it is interpreted differently across countries and regions due to varying historical and contextual factors. The meaning of the social entrepreneurship concept is thus dependant on the region or country (Kruse, 2021) Hence, it is interesting to look at the specificities of the Indian Social Enterprise Landscape rather than the global one.

2.2.3.1 Background

Even before a term was found to describe “social enterprise”, many initiatives in India which could be described as social enterprises existed. From a sociocultural perspective, the need to 'contribute' and fulfil obligations for the welfare of society is deeply embedded in Indian social values and identity. Leaders like Mahatma Gandhi have reinforced these values during the first half of the 20th century before creation of the Republic of India in 1947. The concept of freedom advocated by the country's forefathers included not only political independence, but also the development of a strong society at the grassroots level and an emphasis on developing social leaders which promote economic and social equality. This was an important guiding principle of many important social projects in India in the early stages of India's independence from the United Kingdom. Until the end of the last century, however, the concept and scope of social entrepreneurship was limited to practitioners such as the Ashoka Fellowship⁷. In the first decade of the 21st century, social entrepreneurship progressively evolved into a broader phenomenon. The supporting ecosystem for social enterprises started emerging between 2001 and 2005. An increasing number of social entrepreneurship incubators, social venture capital funds, social entrepreneurship training courses etc. were established. Towards the end of the last decade, social enterprises and its ecosystem started to boom (Shukla, 2020).

2.2.3.2 Current Landscape

⁷ Definition by Moutain Association (n.d.): « *Ashoka – an international organization based outside of Washington, D.C. – supports social entrepreneurs around the world who are making positive impacts in their communities. Ashoka has a variety of programs, including some that work with children and youth.* »

As mentioned above, the number of social enterprises has considerably increased in recent years. A survey from the British Council (2016) estimates that approximately 57% of the Indian social enterprises were created after 2010 and the sector appears to be doubling every 10 years.

Objectives

Regarding the objectives of Indian social enterprises, a survey from the Bertelsmann Stiftung (Ganesh et al., 2018) observed that out of its sample of 600 social enterprises, 60% had the goal to improve the access to rudimentary services and products for low-income populations in a cost effective and efficient way. The rest of the companies aim to help low-income communities by either teaching them skills to increase their employability or to instil behaviour change by raising awareness and sharing information. Another survey from the British Council (2016) which had a sample of 258 social enterprises is noteworthy. In the survey, the most frequently cited objectives for social entrepreneurship were "job creation" (62%), followed by "improving health" (41%), "protecting the environment" (40%), "combating social exclusion" (40%), "supporting agriculture and related activities" (36%), "empowering women" (33%) (33%), "supporting education" (32%), "addressing financial inclusion" (31%) and "supporting other social organisations" (20%).

Ecosystem

The growing number of innovative ideas and business plans can be ascribed to several factors such as an increased awareness, support, quality training and workshop accessible to social entrepreneurs. A very active entrepreneurial community and a steady interest and support from impact investors have also boosted the creation of social enterprises (Ganesh et al., 2018). Another contributing factor, however, is the emergence of a supportive social enterprise ecosystem which provides direct, indirect, financial and advisory support to social enterprises. This ecosystem consists of several actors such as incubators and accelerators, impact investors, multilaterals and donor agencies, corporations and chambers of commerce and industry associations. Other enablers of this ecosystem are online platforms and media, forums and networks, co-working spaces and social innovation events and awards. (British Council, 2016).

Legal form

Since there is no legal entity specific to social enterprises in India, they exist in several different forms. According to the survey from the British Council (2016), 58% of social enterprises surveyed operate as a limited company and 23% as a non-governmental organisation. Prior to 2000, there were two main types of social enterprise: private limited companies or

society/trusts. Since 2015, however, social enterprises have taken many forms, including Section 8 companies (3%), limited liability partnerships (1%), partnerships (5%), public limited companies (4%), sole proprietorship (6%). The number of social enterprises registered as NGOs has decreased, while the number of private limited companies has increased significantly. This might be because private limited companies have greater autonomy in the use of profits and incomes. Indeed, Indian NGOs have relative freedom for their commercial or financial activities, but all profits and surpluses must be used for charitable purposes. This makes them undesirable for private investors who expect a certain return on investment.

2.2.3.3 Challenges

Although the social enterprise sector is growing in India, these social ventures face several challenges to their growth. To begin with, according to the British Council (2016) research, access to funding is the biggest obstacle. Indeed, 57% of the social enterprises surveyed stated that access to capital was an obstacle, 50% mentioned access to grant funding and 33% indicated that cash flow represented a barrier. Attitude toward entrepreneurs and entrepreneurship is considered an important factor in the development of entrepreneurship in a country, and research shows that the culture in India remains risk averse. Some studies suggest that Indian entrepreneurs are reluctant to invest in the country and prefer to invest abroad due to regulations (Singh & Sharma, 2019). Next, another issue faced by social enterprises is access to talent. Indeed, according to the same survey, approximately 30% of the social enterprises suffered from a shortage of managerial skills, 24% from a shortage of technical skills and 26% from recruiting other staff. An additional barrier to growth which social enterprises face is the lack of awareness and understanding of social enterprise among public or customers (British Council, 2016).

2.2.4 Social Enterprises and Menstrual Health and Hygiene

Currently, the global menstrual product industry is dominated by four multinationals, namely P&G, J&J, Kimberly Clark and SCA, which holds together 80% of the market shares. However, disposable pads have not been the only products commercialized. Although the hype around environmentally friendly menstrual product dates back to around 2015, companies commercializing these products have been around since much longer. Before the turn of the 21st century, brands commercializing reusable products were not associated with terms such as “social enterprises” and instead highlighted the environmental benefits of their products. These environmentally friendly companies also did not raise awareness about menstruation. A reason

for this is that Western countries did not perceive menstrual equity as an issue affecting them. Another reason these companies did not position their products as substitutes or alternatives to the sanitary pads sold by multinationals (Punzi & Werner, 2020).

In recent years, however, new companies commercialising the same environmentally friendly products but with a social mission have surfaced. As already mentioned before (see 2.2.1 Definition), social enterprises are hybrid organizations which often strive to fulfill a social mission using a “business-like” and innovative approach to accomplish it. In the past five or six years, several social enterprises have emerged with social missions such as changing the discourse surrounding menstruation, fighting for gender equality, providing products, education, jobs, etc. In low-income countries, social enterprises aim at increasing the access to options like menstrual cups and reusable pads as they are affordable if used in the long run in low-income communities. (Punzi & Werner, 2020)

2.2.5 Outlook

Although social enterprises face numerous challenges, several trends could support their growth. Below section analyses some of the rationales supporting a positive outlook for social enterprises.

2.2.5.1 Reaching rural areas

Firstly, more and more social enterprises are collaborating and partnering up with third parties to reach the last mile for distribution (e.g., home delivery or corner shop availability). This may involve partnerships with existing microfinance institutions and NGOs working at the grassroots level or building last-mile connections by training local people as entrepreneurs or agents at the village level. These initiatives have the potential to create non-agriculture-related employment in rural areas and thus reduce the migration from rural to urban, increase farmers' incomes and foster gender inclusion, etc. (Ganesh et al., 2018). Secondly, an increasing number of Indian companies are outsourcing some of their key distribution and logistics functions to courier and logistics companies to reach consumers more efficiently. In recent years, Indian companies' need for improved logistics has led to the emergence of independent distribution and logistics companies. India's courier network is now expanding to small Class IV cities, which are cities with fewer than 50,000 people (International Trade Administration, 2020). These two trends have the potential to help Indian social enterprises fulfil the consumer cycle by incorporating the last mile in an effective fashion (Ganesh et al., 2018).

2.2.5.2 Technology advances

One key trend which could help social enterprises reach customers more effectively is the technology advances booked in India. India's economy is increasingly going digital, and India has now surpassed most other developing and developed countries in terms of growth and size of its digital economy, indicators such as internet connections and app downloads are vibrant testimonials. Both the government and the private sector are working fast to roll out broadband connectivity and install the appropriate hardware and services to connect business and consumers across India. An analysis of 17 developed and emerging countries realised in 2019 by McKinsey shows that India is going digital faster than any other country, except Indonesia (Kaka et al., 2019). According to the IAMAI-Kantar ICUBE 2020 report, the number of active internet users in India is predicted to grow by 45%, from approximately 622 million in 2020 to 900 million in 2025. Nevertheless, there is a digital divide between rural and urban areas. Only 31% of the rural population are active internet users while 67% of the urban population are. There is also a gender gap, as 57% of active internet users in urban India are men and 43% are women, a similar ratio is witnessed in rural areas (ETtech, 2021).

Given the growing number of internet users and favourable market conditions, India has great potential in the e-commerce sector, and this is something social enterprises could leverage to make their products more easily available. The size of the Indian e-commerce industry grew exponentially and reached approximately USD 50 billion in 2018. It is estimated to reach USD 200 billion by 2027 (Statista, 2021). Nevertheless, online purchases originate mostly from urban areas with 43% of urban internet users accessing the internet to do online shopping compared to only 13% for rural users (ETtech, 2021).

2.2.5.3 Rising exposure to mass media

Another trend which could support the growth of social enterprises in India is the rising exposure to mass media. Between the NFHS of 2005-06 and 2015-16, interaction with mass media such as television, newspaper, radio and cinema increased for both women and men. Only radio usage decreased significantly. The proportion of women who were not exposed to any of the four growing media at least once a week decreased from 35% in 2005-06 to 25% in 2015-16 which is comparatively more than men who went from 18% to 14% only. According to the NFHS-5, exposure to media such as television, newspaper, radio and cinema can play an essential role in the dissemination of information on important health issues such as family planning and HIV (IIPS, 2017). A study from Dasgupta (2019) demonstrates that the diffusion of information through mass media has the propensity to change norms, attitudes and habits. According to a study from Babbar & Saluja (2020) media has proven to be an important factor

in the increased use of feminine hygiene products. Mass media help people understand which products are good for their health and why they need to use hygiene products.

2.2.5.4 Increasing environmental awareness

Both consumers and corporate companies are increasingly considering sustainability as an area of concern. This has been driven by growing concerns about environmental issues and natural resource conservation, as well as rising expectations about social issues. A recent study from Capgemini Research Institute (2020) shows that Indian consumers are changing their purchase preferences based on sustainability. According to this study, 84% of Indians would prefer to purchase local products over imported goods in the coming 12 months and 66% switched to lesser-known brand(s)/organization(s) whose products/practices they perceived as more sustainable. Another pan-Indian survey commissioned by the Mahindra Group (2019) puts forth the growing sustainability trend among consumers. According to this survey, 80% of Indians are aware of the impact of their actions on nature and climate change and 80% are cognizant of the environmental impact of plastic and waste. Nevertheless, this awareness does not translate into concrete actions as there is no evidence that the purchase of environment friendly products has increased significantly in recent years. According to this same report, this paradox is partly justified by a lack of affordable green alternatives as only 27% of those surveyed are able to find alternative products to reduce their use of plastic and 88% of them believe eco-friendly alternatives are either too expensive or not effective. Also, 89% reckoned they would be able to live a more eco-conscious lifestyle if companies provided alternative products and solutions. This suggests that an important barrier to the adoption of sustainable products is the availability of sustainable and affordable green products (Mahindra, 2019).

3 PART III: Qualitative research

The first part of the literature review has provided a better understanding of the Indian context. It subsequently analysed the problems related to MHH, their cause and the field's response, and finally, the environmental issues linked to MHH in India was discussed.

The second part shed light on two aspects which could potentially help the menstrual product industry move in a more sustainable direction, namely environmental friendly menstrual products and the social enterprises commercializing and promoting them.

The present and third part of the thesis, the qualitative research, will provide an answer to the research question which is to assess the extent to which social enterprise commercializing environmental friendly menstrual products could improve MHH. This part will thus be structured as follows. The first section gives an overview of the conducted interview, the used methodology and a presentation of the interviewees. The second section will give an overview of the five social enterprises which were interviewed: Saathi, Aakar Innovations, Avni, Fabpad and Ecofemme. The third section will provide an answer, based on the literature review and the interviews, to the three sub research questions outlined in this work's introduction.

3.1 Interviews with Social Enterprises, NGOs and experts

3.1.1 Methodology

An empirical study based on qualitative interviews with experts and stakeholders in the field of Menstrual Health and Hygiene as well as the Menstrual Product Industry yielded several conclusions on this topic. People working in NGO's as well as social enterprises manufacturing eco-friendly menstrual products were interviewed. The goal was to confront the views of social enterprises commercializing these products with NGO's having on-the-field knowledge of the situation. The interviewees were selected through in-depth research conducted on LinkedIn and Instagram. Approximately fifty people were contacted and fifteen people replied to the invitation to an interview. In total, ten one-to-one online interviews of 30 minutes were organized, the exhaustive transcriptions of these conversation can be found in appendix 4 to 15 from page 86 to 158.

Among the three existing types of one-to-one interviews (i.e. structured, semi-structured and unstructured), the semi-structured format was selected. This interview format allows to have an open-ended conversation and yet cover specific themes (Srivastava & Thomson, 2009). This

choice was made because, as Punzi & Werner (2020) highlighted it, menstrual health issues are different for each community and geographical location. Full contextualized is required to adopt the needed sensitivity. Consequently, asking general and targeted questions allowed to collect broad views and insights on the topic. The questions were based on the key themes identified through the literature review. They were used as a guide and the choice and order of question asked were dependent on the interviewee.

The initial plan was to also interview employees from multinationals in order to have a broad view of the issue and to confront the opinions of different actors. Seventeen people from companies such as Procter & Gamble, Johnson & Johnson and Unicharm were contacted, and only three of them replied. One of them replied by saying that he would have loved to help further this research but the answers to the questions asked (see Appendix 3) were unfortunately confidential. The difficulty encountered to reach out to multinationals was also confirmed during an interview with Arundati Muralidharan which told me multinationals were very hard to reach, even for an NGO as big as WaterAid. This lack of responsiveness from the disposable sanitary pad players is worrisome and raises questions on their willingness to collaborate to neutral research on the topic.

3.1.2 Presentation of the interviewees

These part mentions the main relevant information about the interviewees.

3.1.2.1 Menstrual Health Experts

- Arundati Muralidharan: Policy Manager for Health and Nutrition at WaterAid India.
- Preeti Jangra: Founder and director of the NGO “Lal Sakhi”.
- Himanshi Narula: Organization development lead at “Uninhibited”.
- Rajasi Kulkarni: Menstrual health educator and founder of the movement “Bleed Red Go Green” and core team member of the “Green the red” pan India campaign.
- Mayuri Bhattacharjee: Menstrual health practitioner, educator and senior program coordinator for menstrual health at the NGO “Splash”.
- Richa Malik: Founder and Chief Executive Officer (CEO) of “Happy Turtle⁸”, a company working towards reducing plastic footprints for individuals and corporations. She has also

⁸ “Happy Turtle” has launched the project “Samman” whose aim is to provide alternatives to the sanitary pad to women in rural Bihar.

worked for ca. six years at Procter & Gamble and shortly at Unilever in India (Richa Malik, n.d.).

- Shalini Jha: Founder of “Alharh” which is a menstrual awareness campaign addressing menstrual myths and taboos.

3.1.2.2 Social enterprises (Founders & CEO)

- Tarun Bothra: Co-Founder & Chief Technology Officer at Saathi.
- Jaydeep Mandal: Co-Founder of Aakar Innovations.
- Dipesh Dhelia: CEO of FabPad.
- Sujata Pawar: Co-Founder of Avni.
- Kathy Walking: Co-founder of Eco-Femme and its non-profit leader.

3.2 Presentation of the Social Enterprises interviewed

In this section, the different social enterprises will be briefly described (see Table 7). All the information about the companies have been gathered through interviews, online newspaper articles as well as through research on their respective websites and social media accounts.

Table 7 Overview of the five social enterprises interviewed - own work

Core product	Name	Start	Other products
Compostable pads	Saathi	2015	Menstrual cups (soon)
	Aakar Innovations	2014	
Reusable pads	Avni	2020	Disposable pads
	FabPad	2020	Period panties Menstrual cups Reusable Diapers
	Eco-Femme	2010	Menstrual cups Reusable Diapers

3.2.1 Compostable pads actors

3.2.1.1 Saathi

The company

Saathi is an Indian company based in Ahmedabad which manufactures and sells compostable sanitary pads made of banana fibres. The company has developed a “cradle-to-cradle” approach whereby the aim is not only to minimise negative externalities but also to leave a positive ecological footprint (Epea, 2020). Saathi's mission is “*to create hygiene products that are good for the body, environment, and community*” (Tudu, 2019). To fulfil its mission, Saathi

developed a circular business model. Its pads' primary source of material is banana fibres, a material that is suited for sanitary pads. Banana fiber is 50% more absorbent than chemical products used in regular sanitary pads, it is natural, soft and does not irritate the skin. Next, bananas grow locally and abundantly, and they use very little water and chemical fertilizers (Kane, 2017). These banana fibres are sourced from the stems which would otherwise be discarded. Indeed, as fruits can only be harvested from banana trees once in their lifetime, the stems are cut to make room for new offshoots growing from the same root system, leading to massive amounts of waste (Madetrade, 2019). Banana fibre is thus a by-product of banana plantation that is widely available and does not require extra cultivation land. This abundant waste stream is bought from local farmers in Gujarat and Saathi. It has centralized collection and extractions centres with staff who collect and extracts banana fibre from the stems (Epea, 2020). Two products come out of the extraction process: the banana fibre, which is sent to the factory, and a fertilizer that is given back to the farmers. This fertilizer is created with the “mulch” left over after the extraction, which after fermentation becomes an efficient organic fertilizer. The factory, which employs 75% of underprivileged women, turns this processed fluff pulp into Saathi's pads. Only natural products are used, and no fragrances or bleach is added in the manufacturing process of the pads. They are thus 100% biodegradable. The pads are then sold, used and then composted. This is also beneficial to the community as farmers receive additional revenue from their plantations and underprivileged women are employed.

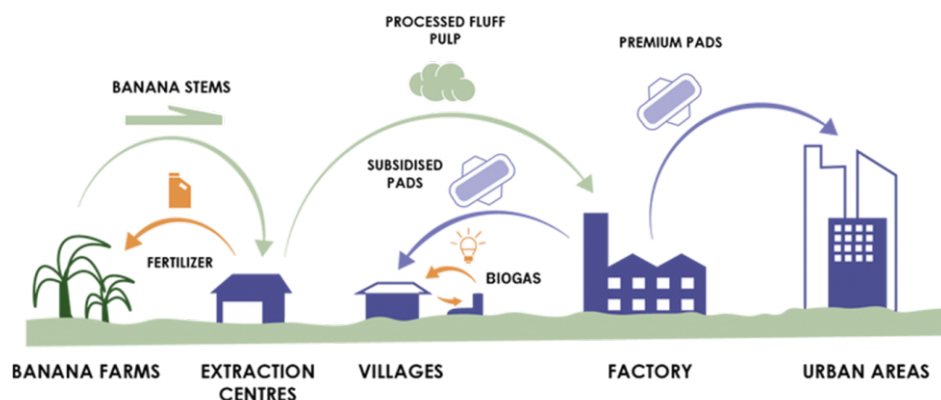


Figure 1 Saathi's business model (Solar Impulse, n.d.)

Social Mission

Saathi also distributes its napkins to women in rural villages either by selling them to NGO's or through its #onemillionpads initiative. Saathi has partnered up with Ekal Vidyalaya, one of India's largest education NGOs, which has a network of over 56,000 schools in every state in India. Together they have the goal to distribute one million pads to women and additionally educate them about feminine hygiene (Engineering for change, 2020). Through this program, pads are donated in the first stages and then sold at a low cost later on (Saathi, 2018).

Saathi and Ekal Vidyalaya, one of India's largest education NGOs, also organise workshops during which questions such as why Saathi uses banana fibre, how often should the pads be changed, where to dispose of them etc. are tackled. Afterward, the "sevikas" (i.e., healthcare workers) are prepared to answer questions about Saathi pads and intimate hygiene from women in their villages. Saathi also tries to raise awareness towards menstruation on social networks such as Instagram, LinkedIn, Twitter and Facebook

3.2.1.2 Aakar Innovations

The company

Aakar Innovations is an Indian company based in Mumbai which offers commercially viable solutions for local entrepreneurs to produce, distribute, market and sell affordable, environmentally friendly sanitary napkins produced by local entrepreneurs in areas where they are otherwise not available (Aakar Innovations, 2021c). Its aim is to provide 100% compostable, eco-friendly, affordable and effective sanitary pads as well as sustainable livelihood opportunities for rural women. Aakar Innovations is currently present in twelve states in India and plans to expand to all Indian states. It is also present in ten countries globally such as Kenya, Tanzania, South Africa, Zimbabwe, Uganda, Nepal etc. and plans to expand to other developing and underdeveloped countries around the world (Equator Initiative, 2020).

Aakar Innovations' pad, whose brand name is "Anandi" are 100% compostable and made of wood pulp and biopolymers which are imported respectively from Canada and Germany (J, Mandal) The reason why Aakar developed a compostable pad is to solve rural and urban waste disposal problems while ensuring environmental sustainability. The Anandi pad is the first and only pad which has currently been certified 100% compostable by the Government of India (Aakar Innovations, 2021c). With a desire to reduce the costs and to use as much natural materials as possible, Aakar is conducting pilot projects with locally available agro-waste. Instead of the absorbent wood pulp which makes up 80-90% of the material used in sanitary napkins, they are trying to incorporate local materials such as banana fibre from Uganda and hyacinth from Lake Victoria in Kenya (Equator Initiative, 2020). The Anandi pads are sold at a price of 40 INR (pack of 8 pads) which corresponds to 5 INR per pad. The profit resulting from the sale of a pack is reattributed as a commission to the women who produce and sell them.

Social Mission

The “Anandi” pads are manufactured in mini factories which employs only women and this at all internal stages of the process. This gives local women the opportunity to get jobs, learn entrepreneurial and marketing skills and even take on leadership roles in their communities. As Anandi is currently targeting rural and urban slums, the production units are established in their vicinity, thereby removing barriers to access (e.g. long-haul costly transportation). These mini factories produce sanitary napkins which are affordable and have the same comfort and effectiveness levels as any other commercially available sanitary napkins. This successful production process is the result of extensive R&D in both technology and raw materials. The novelty of the technology lies in combining well-known equipment and processes with in-house technological developments. This allows Aakar Innovations to significantly reduce production costs without compromising quality and thus ensuring higher profit margins subsequently passed on to the employees. Aakar Innovations employs more than 700 women in around more than 30 manufacturing unit. It has reached over one million customers and generated revenues of 50 million INR (Aakar Innovations, 2021b). Aakar Innovations always works with community partners as gaining public trust is vital to tackle the wide taboo that is MHH. Many units have been supported by Government and Corporate Social Responsibility funds, others have been reliant on funding by bank loans from Self Help Groups and NGOs (Equator Initiative, 2020)

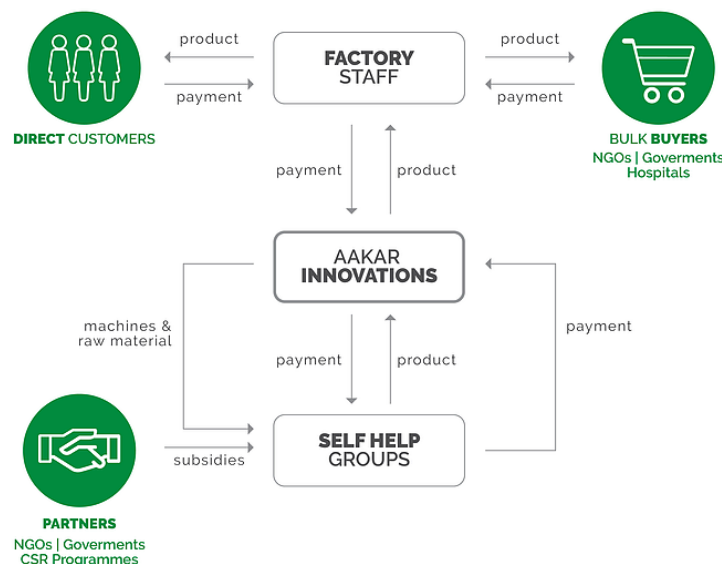


Figure 2 Aakar Innovations' business model (Aakar Innovations, 2021b)

To increase the access to menstrual products, Aakar Innovations uses a portion of its profits to distribute free or subsidized sanitary pads in rural areas (J.Mandal). Aakar does not only tackle

the problem of accessibility and affordability of menstrual protection but also the lack of awareness and education surrounding the topic. Hence, Aakar has set up “Aakar Social Ventures” which raises awareness about Menstrual Hygiene Management so that last mile stakeholders (i.e. customers) can make informed choices. To achieve this, Aakar has developed an education program which provides logical perspectives and scientific facts for menstruation to be seen as a natural and positive aspect of womanhood. These education programs disseminate information about Menstrual Hygiene Management not only to women and girls but also boys and men (Aakar Innovations, 2021a).

3.2.2 Reusable pads

3.2.2.1 Avni

The company

Avni is an Indian company based in Thane, launched by Sujata Pawar and Apurv Agrawal in 2020. It provides women with eco-friendly menstrual care products. The first product launched by Avni was the “Safepad” which is a reusable sanitary pad. This pad was developed after Sujata, a healthcare professional, understood as a user the harmful effects of commercial disposable pads. She switched back to cloth pads after this newfound awareness. However, she soon realized that cloth pads also represent a challenge as it takes one to two days to dry. Washing the stains can be difficult and can the handling of these soiled products expose women to infections. She eventually came across a reusable napkin designed in Denmark which uses advanced technology to make the towels antibacterial, waterproof and stain resistant (Barua, 2021). In collaboration with this danish company, Avni was able to develop a new reusable pads with the same technology. This in exchange for a small fee and safeguarding the brand name “Safepad” (S,Pawar).

Avni Safepads are sanitary pads which were carefully developed in order not only to absorb more, use less water and dry faster but also to protect women against infection. Indeed, the absorbent base material is a highly absorbent fibre that has been treated with an antibacterial treatment which helps prevent vaginal infections caused by certain pathogens. This product is permanently bonded to the fabric and does not dissolve after uses and washing cycles. Each pad is made from three layers of high-quality fabric, making it waterproof, stain resistant and providing four to six hours of absorption. The surface material is a soft, quick-drying 100% polyester fabric, as the antibacterial treatment is more suitable for this fabric than for example cotton. This material is also cheaper than cotton (S,Pawar). The base layer is made of cotton

with a laminate that prevents leakage. The Avni Safepad can be cleaned within five to ten minutes and dries in two to four hours. Furthermore, it lasts for 100 washes which corresponds to approximately three years of extensive use (Avni, 2021b)

Since then, Avni has expanded its business and introduced other products in the menstrual care products. The company also offers a menstrual cup made of medical-grade silicone. Besides, as many women are accustomed to using disposable sanitary pads, Avni has developed the “Ezeepad” for women who are hesitant to switch to reusable options. These pads are cotton-based pads which contain no plastic. Each pad comes with its own waste bag made of recycled paper, which is marked by a red dot, indicating that it contains a hygiene product. This dot originates from the Red Dot project, an initiative named for disposing sanitary waste in bags marked with a large red dot. This indication prevents waste pickers from opening the labelled bags and get in close contact with body fluids. By sorting sanitary waste, waste pickers can expose themselves to all kinds of diseases, such as hepatitis, salmonella, typhus, staphylococcus and even sexually transmitted diseases (STDs) or HIV. Finally, to encourage customers to switch to environmentally friendly products, Avni provides a product package called the Green Period Kit (Barua, 2021).

In keeping with its sustainability goal, Avni’s products are packaged in recycled paper. These products are sold on Avni’s own web shop and on other e-commerce platforms such as Amazon, the PinkBox or Flipkart. The Avni menstrual care products are also available in around 27 stores, including in Tamil Nadu and Hyderabad. According to S.Pawar, they have catered to the menstrual needs of 5,000 women so far. Their customer segment is mostly new mothers, women with sensitive skins and women who want to embrace a more environmental friendly lifestyle (Ganguly, 2021).

Social Mission

Avni is not only increasing the access to eco-friendly menstrual products, but it has also developed its own holistic menstrual awareness program called “Avni Pacer connect program” which comprises contributions from gynaecologists, menstrual hygiene facilitators, psychologists, yoga teachers and energy doctors. This program is given in educational facilities, hospitals, workplaces and residential societies. Through this program, menstrual awareness is raised, and other topics are also addressed such as the menstrual cycle, the hormonal components of menstruation and its impact on the body and psyche, sustainable menstruation, disposal of menstrual products et cetera (Avni, 2020a). Avni has also developed the “Avni Pacemaker” which is an online inventory of “menstrual hygiene management champions”, it brings together teachers, facilitators and change agents doing pioneering work on menstruation.

The aim is for it to be a platform compiling sources of valuable information, which can strengthen the much-needed dialogue on women's menstrual and sexual health (Avni, 2020b). The Indian company has also set up a hotline to help customers with questions about their products and menstrual health, it also guides them when operating a switch from sanitary napkins to environmental friendly menstrual. Finally, Avni has developed its “Avni Insider program” which is an ambassador program to encourage customers to spread the word about Avni. The ambassador can thus earn a reward of 15% on every order placed and 500 INR for every 50 orders executed through his sponsorship. Additionally, both the ambassador and its clients receive a 12% discount on all Avni’s products (Avni, 2021a) .

3.2.2.2 FabPad

The company

Fabpad is an India company based in Kolkata which was set up in August 2020 by Shripriya Khaitan Dhelia and Upasana Todi Prakash. FabPad produces eco-friendly menstrual products such as reusable pads, period panties and panty liners as well as reusable diapers. It also commercializes medical-grade silicone menstrual cup which are U.S. Food and Drug Administration (FDA) approved (FabPad, 2021). FabPads’s reusable napkins are made from multi-layer technical fabrics which are 100% plastic-free and made of cotton, thus making them safe to reuse. They can be washed approximately 100 times and can thus last approximately four years. To tackle the stigma surrounding drying one’s menstrual products in the open air, FabPad has also developed a foldable reusable pad which looks like a handkerchief when it is unfolded. The pad flaps over eight times and has a leak proof layer in it. It can thus discretely be washed and dried in the open. Regarding the distribution of their products, there are several channels. A channel which they currently use, is e-commerce. They sell their pads on different platforms such as Amazon or Flipkart and they are also currently developing their own web shop. The Indian company also intends to be available in brick-and-mortar stores (D.Dhelia).

Social Mission

The pads are produced and sewn by hand in Kolkata, India. FabPad’s mission is to empower women, it thus keeps the production of the pads completely “by the woman for the woman” . To achieve this goal, it employs economically disadvantaged women from rural areas in its centralized production unit. By operating through a centralized production unit, it allows to avoid the need for transportation, which is less harmful to the environment. These women are trained for several weeks before they start manufacturing the pads (D.Dhelia). They are also in

charge of selling and distributing the product and to raise awareness withing their communities about menstrual stigma and safe practices.

To tackle the barriers of accessibility faced by rural women, they collaborate with NGOs which buy their pads and distributes them in rural areas. FabPad also donates one pad to economically disadvantaged girls for every 25 pads sold (FabPad, 2021)

3.2.2.3 Ecofemme

The company

Eco-Femme is a women-led social enterprise based in Tamil Nadu created in 2010. Its aim is *“to create environmental and social change through revitalising menstrual practices that are healthy, environmentally sustainable, culturally responsive and empowering”* (Eco-Femme, n.d.-a). One of Eco-Femme’s core activity is to commercialize reusable pads. At the start of Eco-femme’s journey in 2010, reusable pads were unknown to the public and hence the acceptance of the product was very low. Therefore, Eco-femme developed in a social enterprise with a commercial and non-commercial side. On the commercial side, Eco-Femme discovered that its pads were much more easily sold internationally than in India. They thus started selling these pads to resellers in the West. However, gradually, these international sales supported the viability gain of the product in India as women started realizing that it had international acceptance. Indian customers subsequently started adopting Eco-femme’s pads (K.Walking). The range of product commercialised by Eco-Femme has now expanded. Kits of reusable pads in different sizes (i.e., depending on the flow) and format (e.g. foldable pads, standard sanitary pad shape) are sold. Eco-Femme also offers the option to choose between pads with or without a leak-proof layer. It also sells menstrual cups, cloth-pad soap and reusable diapers (Eco-Femme, n.d.-e).

Social Mission

Eco-Femme’s pads are stitched in five different units which are not directly employed by Eco-Femme: AVAG (Auroville related NGO), Cocoon (Auroville related women’s production unit), Blossoms (Auroville unit), Ektha (Bangalore, women’s producer company) and Clothing Connections (Kiruba unit) (Eco-Femme, n.d.-a). As Ecofemme believes that income generation for independent women is the key to empowerment, liberation and development of women in disadvantaged communities is a cornerstone of the project. All five units provide decent wages and a safe working environment for the women who work there (Eco-femme, n.d.-b).

Eco-Femme’s hybrid business model allows them to channel profit from the commercial sale of sanitary pads to not-for-profit activities that benefit girls and women around the world (Eco-

femme, n.d.-b). Their projects range from directly educating marginalized teens and women on the basics of menstruation to training coordinators and supporting education ambassadors to advocate for sustainable menstruation. Eco-femme collaborates with a growing network of grassroots NGO partners and education ambassadors throughout India (Eco-femme, n.d.-c).

To begin with, its "Pads for Pads" program provides menstrual hygiene education and free reusable pads to adolescent girls in India. Additionally, its "Sister Pads" program provides subsidized reusable pads to underprivileged women who cannot afford them. Additionally, Eco-Femme trains facilitators on how to teach healthy and environmentally sustainable menstrual practices in their communities. Also, Eco-Femme provides advice and consultation to organizations working on sustainable menstrual practices in different parts of the world and advances the research on menstrual hygiene education. Finally, Eco-Femme has built a community of ambassadors in India and around the world who volunteer at the grassroots level to promote healthy and sustainable menstruation (Eco-femme, n.d.-c).

3.3 Discussion

The following part will provide an answer to the three sub-research questions listed in section 0.5 "Research Structure" and conclude with an answer to the main research questions.

3.3.1 Comparison of the different environmental friendly menstrual products

This part will answer the question *"Is there one eco-friendly product offered by social enterprises which would fit the Indian context best?"*. To do so, compostable pads, reusable pads and menstrual cups will be compared based on four criteria's: affordability (i.e. how affordable is the product), convenience (i.e. how easy is the use, maintenance or disposal of the product), environmental cost (i.e. to what extent does the product have an negative impact on the environment) and psychological barrier (i.e. to what extent do taboos or other myths and misconception create a barrier to adoption of the product). It has been decided not to analyze comfort as this is highly dependent on each women's experience as well as the brand used. A graphic comparison summarizing the findings will be provided in section 3.3.1.4.

3.3.1.1 Compostable pads

To begin with, compostable pads are very similar to regular disposable pads for the taboo and the convenience aspects. In terms of convenience, the compostable pad represents a good product for women who do not want to be bothered with washing, drying etc. (P.Jangra).

Then, just like any menstrual products, the adoption of compostable pads is impacted by taboos as women feel embarrassed buying it from a male shopkeeper and are also afraid that their pads will be exposed when disposing of them. However, disposable and compostable pads are the least impacted by this barrier among the three options.

As has been observed in the literature review (see 2.1.1.2 Price), compostable pads are by far the most expensive option. Tarun Bothra highlights the fact that Saathi's pads are not affordable in rural areas. As even the cheapest sanitary pads are often too expensive for women in low-income communities and rural areas, it seems very unlikely that manufacturers of compostable pads will be able to make ways into rural markets any time soon.

Regarding the environmental cost, although compostable pads are undoubtedly better than plastic-based disposable sanitary pads, they have a higher environmental cost. Indeed, as Dipesh Dhelia from FabPad highlights, although it is a good option, compostable pads still need between six to twelve months to decompose, and hence, it inevitably results in huge amounts of waste which must be handled. Besides, as mentioned in the literature review (see 1.3.2.1 Waste management rules) and highlighted by Richa Malik from the Happy Turtle, there is a law in India which imposes manufacturers to provide a wrapping sheet with each sanitary pad. Although these wrappers might be made from biodegradable plastics, it still leads to more waste. She also adds that these compostable pads are most likely discarded the same way as plastic-based pads and hence do not reach the end-of-life scenario in which they are composted in the right conditions. If waste management systems could segregate the compostable pads it would reduce the environmental cost. According to T.Bothra, such systems are hard to implement in a country such as India. In the case where compostable pads, soiled by period blood, are turned into fertilizers, one could raise the questions of whether food grown from it poses health hazards. Many manufacturers use bioplastics which, according to Richa Malik, represents an issue as no one knows the impact it could have on health of users. This is because it is a nascent technology which has not yet gone through all the same health tests as commercial sanitary pads. To conclude, although the environmental cost is higher than for reusable period products, compostable pads, provided they are made of natural raw materials, remain a good alternative for women who are not ready to make the switch to reusables. Indeed, for women

who are already accustomed to disposable sanitary pads, compostable pads are the most straightforward to switch to as it does not require them to change their habits (R.Malik).

Another issue brought up by R.Malik, J.Mandal and T.Bothra is the greenwashing. As there are no policy in India regarding the disclosure of materials, many sanitary pads positioning themselves as environmentally friendly by falsely claiming that they are compostable, although they still use a lot of plastic in their raw materials. Consumers thus fall into the trap and buy overpriced pads, thinking they are buying products which are good for the environment.

Regarding the level of awareness, women are often not aware that compostable options exist (T.Bothra, J.Mandal). A pan-Indian survey from the Mahindra Group (2019) observed that among the participants of the survey, only 27% were able to find alternative to plastic-based products. This might be due to the lack of awareness of existing alternatives. However, Jaydeep Mandal feels that, with the pandemic and the climate change, the awareness of eco-friendly options is increasing. Compared to the two other options, however, compostable pads have a higher level of awareness as it is a very similar product to the disposable pad.

3.3.1.2 Menstrual cup

Regarding the convenience of the menstrual cup, the results are nuanced. On the one hand, the menstrual cup can be worn for longer hours, it is comfortable, and it is possible to practice sports without feeling discomfort (J.Mandal). On the other hand, it requires more maintenance than disposable pads as this menstrual cup must be sanitized at the start and at the end of each cycle by boiling it in water. This can represent a barrier for women who lack access to water and fuel (Mahajan, 2019). However, according to van Eijk et al., (2019), lack of sanitation, hygiene and privacy does not seem to deter women from using the cup. This insight has been confirmed by both P.Jangra and R.Kulkarni, which believe that privacy and water is a barrier to any menstrual product rather than just for menstrual cups.

Taboo has a very detrimental impact on the adoption of the cup. This has been highlighted during six of the twelve interviewees (S.Pawar, S.Jha, D.Dipesh, R.Kulkarni, P.Jangra, H.Narula). Many women are uncomfortable with young girls and unmarried girls inserting a cup in the vagina as it is believed that it will lead to the loss of virginity. Virginity, which is defined by *“the state of never having had sexual intercourse”*, (Lexico, n.d.) is a social construct rather than a biological state. This myth comes from the fact that, just like sexual intercourses, the menstrual cup might break the hymen, which is a thin piece of biological tissue that some women have at the opening of their vagina. Shalini Jha shared that, during the first

awareness session she gave, the teacher specifically told her that she should not mention the existence of menstrual cup because of its insertion nature. Because of this myth, many women will not adopt the menstrual cup, despite knowing its environmental and cost benefits. And for the girls who want to try it despite the myth, objections from the family towards using the cup might occur (H.Narula). Indeed, S.Jha mentioned the fact that parent's permission is often a barrier brought up by schoolgirls during awareness and education sessions. Despite this barrier, she finds that talking about menstrual cups to schoolgirls can be impactful as some will find loopholes or try to convince their parents to let them start using it. Also, out of Preeti Jangra's experience with Lal Sakhi, groups of women in communities will sometimes try to deter other women from using the menstrual cup by spreading false rumours about it. According to R.Kulkarni, this widespread stigma associated with the fear of virginity loss applies both to rural and urban areas. Out of P.Jangra's experience, however, this barrier is more pronounced in urban areas as she feels that rural women are less concerned about their virginity than urban women. According to van Eijk et al.'s (2019) meta-analysis of quantitative and qualitative research on the menstrual cup, its adoption requires a learning phase, and peer support appears to play an important role in its introduction in low- and middle-income countries

Regarding the affordability criteria, although the price per cycle of the menstrual cup is the lowest (see 2.1.2.2 Price), its initial investment is very high. Therefore, affordability does represent a barrier to its adoption, but once acquired, it is the cheapest alternative.

According to an LCA carried out by Leroy et al., (2016), the environmental cost of menstrual cup in India is the lowest among the three alternatives. This can be justified by the fact that it does not generate waste, it can also be reused the longest and it requires less water to be washed.

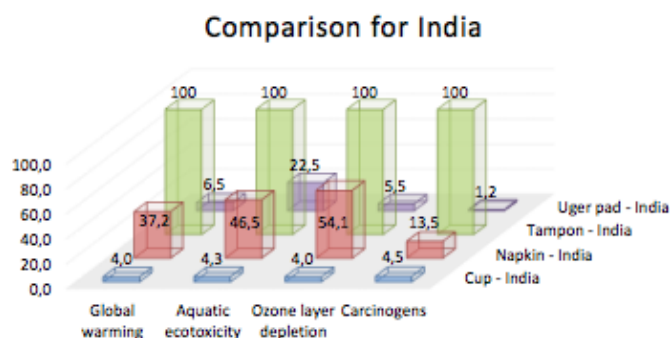


Figure 3 Environmental assessment of hygienic product for India (Leroy et al., 2016).

The level of awareness of the menstrual cup is the lowest among the three products. This is due to the fact that it is a relatively new product in the Indian market, which has not benefited from

much mass media marketing or push from the government. Therefore, many women do not know how to use it and have many apprehensions about its safety and quality. One mental blockage which is emphasized by P.Jangra (2021), is the fact that menstrual cup appears to be made of plastic. Women also fear that it might get stuck inside their vagina or lead to infections.

3.3.1.3 Cloth pad

Cloth pad is the least convenient option among the three eco-friendly products. Indeed, women who are on the move expect their menstrual hygiene products to be easy to use, easy to switch, easy to wash, etc. (R.Malik). Washing cloth pads can be especially problematic for women living in very rainy or humid regions as they do not dry easily or fast enough (A.Muralidharan, M.Bhattacharjee).

Consumers are also facing considerable psychological barriers. Indeed, one of the main pushbacks faced by cloth pad manufacturers is the fact that many women have adopted the disposable narrative and hence believe that cloths are unhygienic (S.Jha, K. Walking, R.Kulkarni, M.Bhattacharjee, H.Narula). According to K.Walking, there has been a “bombardment of messaging” that woman should use disposable napkins. These advertisements have conveyed the message that cloths are dirty and cannot absorb enough blood. Moreover, with recent movies such as Pad Man, disposable pads have become aspirational products. Some people feel like reusable pads implies going back to primitive practices or they do not understand how reusable cloth pads could enhance the experience of cloth (K.Walking). Despite this harmful narrative, many women in India still use cloths which are made of old fabrics, especially in rural areas. Therefore, in communities where cloths are still used, reusable pads are more easily adopted. Reusable pads are thus not perceived as new products and hence their adoption is easier than for the menstrual cup and even disposable or compostable pads (H.Narula, R.Malik). Through her “Sammaan” campaign, Richa Malik has observed that, when women have already made the switch to disposable pads, making them adopt the cloth pad is less challenging when they are familiar with it, either because they have used it themselves before or because they have relatives which use them.

Taboo is also a barrier to the adoption of reusable pads. As menstrual stigma is still very present in India, drying the pads in open air can be a constraint. Therefore, pads which are foldable have been developed. These pads, when unfolded, look like a handkerchief and can thus be dried outside without women feeling ashamed (D.Dhelia, S.Jha).

Regarding the affordability of reusable pads, it is a relatively cheap option (see table 4). Although one reusable pad is cheaper than a menstrual cup, one should bear in mind that a woman will need several reusable pads for each cycle to account for the need to be washed and dried. This might thus represent an upfront investment.

The environmental cost of reusable pads (called Uger pads in Leroy et al.'s LCA), is much lower than disposable pads and slightly higher than menstrual cups (see figure 3).

The awareness levels of cloth pads are quite low. Although women use old cloths to handle their period cycle, many women are not aware of the existence of commercial reusable pads. Dipesh Dhelia from Fabpad says that in distribution setup, sales of reusable pads need to be backed by a good sales team that can make people aware of the product and teach them how to use and how to take care of it.

“Cloth pad is not a pickle, you know, like a pickle you can put it on the shop shelf and people know and they'll buy it. But cloth pads we're not there yet. It needs that conversation.”

(Kathy Walking, translated from appendix 15)

3.3.1.4 Conclusion

Based on the findings above, scores between one and five have been given to each menstrual product. Five represents a characteristic which is completely fulfilled while zero highlights the absence of value added for the specific criterion.

Table 1 Scoring of three alternatives to traditional pads - own work

	Menstrual Cup	Reusable Pads	Compostable pads
Convenience	4	1	5
Psychological barrier	1	2	4
Affordability	4	3	1
Environment	5	4	2
Awareness	1	3	3
Total	15	13	15

As can be seen on this table, no environmentally friendly menstrual product fit the Indian context better than another as each has its own merits and demerits, including plastic-based sanitary pads. Indeed, in the case women who cannot access to clean water nor afford or access compostable pads, for instance, low-cost and hygienic sanitary pads are the best option. The adoption of a certain type of product will be highly dependent on every woman's preference

but also the context in which she lives (i.e. infrastructures available, disposable income, etc.). Additionally, an important concept, which is often overlooked, is the fact that women will (or can) use several different products to manage her periods. For instance, a women might use a menstrual cup when going for a swim, a sanitary pad when she is travelling and a reusable pad when she is at home (J.Mandal). This is also illustrated in the fact that four out of the five social enterprises interviewed provide its consumers with several environmentally friendly options (see table 7).

Against this background, an aspect which has been explicitly highlighted by seven of the twelve interviewees is the importance for women to have the right to choose which product best fits their needs and their context (A.Muralidharan, P.Jangra, J.Mandal, R.Kulkarni, M.Bhattacharjee, H.Narula, K.Waliking). It is thus important to provide women with unbiased information to help them make an informed choice.

“They have the brains, they know their bodies, they know the context in which they live, and we let them choose what they want to wear.” (Arundati Muralidharan, WaterAid, translated from appendix 4).

“One should have the agency to choose what suits best for them” (Rajasi Kulkarni, Green the red, translated from appendix 6)

To conclude, although social enterprises commercializing environmentally friendly menstrual products have a positive impact on the environment, the extent to which these products can improve MHH is limited. Indeed, much more than the mere provision of menstrual products, environmentally friendly or not, is needed to address the MHH-related problems. As the adoption of these products is dependent on the context of a women, it is highly important to improve the infrastructure, as well as to raise awareness about the topic.

3.3.2 Barriers to the adoption of eco-friendly menstrual products and existing solutions to tackle them

The different ways social enterprises improve MHH and the barriers they face in doing so will be analysed through two of the three factors identified in the literature review, namely materials (i.e. accessibility and affordability) and awareness. The reason the infrastructure factor is not

addressed is because it not a direct impact area of social enterprises. The key insights will be summarized in table 8 in section 3.3.2.3

3.3.2.1 Awareness

As has already been stressed in the literature review, lack of awareness is a key obstacle to good MHH practices. To begin with, according to Kathy Walking, the Indian population is not well educated about menstruation and there is a lack of understanding and knowledge about bodily functions and women's health. One contributing factor to this lack of awareness is the myths and taboo surrounding menstrual hygiene in India. As it is a taboo subject, people avoid talking about it, thus perpetrating the misconceptions and lack of awareness. As a matter of illustration, in one of Shalini Jha's menstrual awareness sessions in schools, a girl told her it was the first time she had heard the word "menstruation" spoken out loud. It is thus important to break the silence around this topic.

Furthermore, beyond the lack of awareness and education about menstrual cycle, women are also often unaware of the existence of environmentally friendly menstrual products and how to use them. Unlike multinational which have huge marketing budgets to advertise their pads, there are no advertisements about menstrual cups or reusable cloth pads (H.Narula). Therefore, people do not know that these options exist.

This represents an important barrier to social enterprises commercializing these products (R.Kulkarni, D.Dhelia, S.Pawar, T.Bothra). Educating and raising awareness among women is thus critical both to improve MHH and to expand the adoption rate of environmentally friendly menstrual products.

"The efforts on the marketing side are enormous and largely underestimated. What it takes to have those conversations, again and again and again and again to overcome the doubts and hesitations is a big piece of work." (Kathy Walking, Eco-Femme, translated from appendix 15)

One of the main solutions to tackle this problem is to provide education workshops to girls, women and key influencers. This is something which is done by the five social enterprises who pair the commercialization of their products with awareness and education sessions. Several key insights have been collected regarding these sessions. An important point which has been highlighted in the previous question is that women should be able to make an informed choice when it comes to menstrual products. To that end, women should be provided during

these awareness sessions with unbiased and scientific information on the products which are accessible to them. Indeed, it does not make sense to talk about a product if the girls and women are not able to purchase it afterwards. The social enterprises interviewed do not advocate for their own products but instead provide women with scientific and unbiased information about other products as well. The way Uninhibited proceeds to achieve “informed choice” is to do mapping exercise with them whereby each woman maps the water system in her community, her own financial situation, the ease of using these products for her, etc. According to P.Jangra, these sessions require a lot of social work, trust and connection building. H.Narula also highlights the importance to do follow ups.

Although it is important to target schoolgirls, it is also essential to approach other key influencers. According to Mayuri Batthacharjee, the taboos are strongly linked to culture and religion and therefore it is important to also involve religious leaders during awareness session as taboos often originate from religious practices. Another stakeholder among which awareness needs to be created are doctors. Green the red has launched a campaign whose aim is to create awareness among doctors and to train them. The reasoning behind this, is that doctors are people which are trusted and listened to R.Kulkarni. Thirdly, men should also be involved in the discussion. As has already been highlighted in the literature review (see section 1.2.2.2) due to the lack of information provided at school and the taboo, men and boys don’t understand menstruation. Shalini believes it is important to involve men in the conversation in order to undo the social conditioning which is why she has launched an Instagram video series specifically targeting non-menstruating people (S.Jha). Mayuri Batthacharjee also believes it is important to involve men in awareness programs. From her experience doing awareness in schools, she has noticed that boys are also interested in knowing their bodies and that to keep everyone engaged, awareness sessions about reproductive health should be given to both girls and boys. Ideally, these sessions should be given to boys and girls together but many parents object to it (M.Batthacharjee). Uninhibited has also understood that men are part of the problem and that therefore they should also be part of the solution and hence they work with adolescent boys too. Involving them can lead to positive outcomes as most of times the decision makers in the household are men (see 1.1.3.1 Gender inequality). According to J.Mandal, once men are educated about the scientific facts about menstruation, they are more likely to give money to their wives and daughters to buy products and stop imposing restrictions which are based on their religion or culture. Also, this could have other positive outcomes such as the construction of toilets adapted to the needs of women.

Furthermore, social media is increasingly being used as a tool to address the lack of awareness about menstruation. According to S.Pawar, social medias are a very powerful tool as they can put out demonstration videos, explanatory videos and so on. T.Bothra also highlights the importance to speak boldly about menstruation in order to break the silence, which is what Saathi does on its social networks.

3.3.2.2 Material (i.e., Accessibility and Affordability)

As has already been highlighted in the literature review, accessibility is an obstacle to good MHH practices. This accessibility barrier is lowered down by the increasing use of e-commerce, but deliveries are not available in every part of the country, and even less so in rural areas. In order to expand the access to menstrual products, there are two main methods which are common in India: donations and decentralized manufacturing units managed by SHGs.

Decentralized manufacturing units producing low-cost sanitary pads is a widespread method to increase the accessibility lower down the barrier of affordability. Although this model is not used by any of the social enterprises interviewed, it was decided to investigate this solution to assess whether it could help social enterprises expand the access to compostable sanitary pads, or to reusable pads.

One of the key advantages of these small-scale unit, beyond increasing the access to menstrual products, is that it also provides local women with employment (S.Jha, A.Muralidharan, M.Bhatthacharjee). As it is often women who are running such units, it also gives them a sense of empowerment. Out of S.Jha's observation, it also encourages entrepreneurial skill set as several women go on to establish small businesses of their own.

However, this model of production presents several flaws. First, both A.Muralidharan and T.Bothra state that these production units do not invest in good enough machinery and infrastructure to run such models. Using the cheapest machines results in substandard quality of products which leak very easily (A.Muralidharan). Also, since sanitary pads are hygiene products, they need to be very clean and made in sanitary conditions and this is unfortunately not always the case. Indeed, the infrastructure in which these production units are not well insulated which can results in moisture problems. If the sanitary pads are not properly stored, the super absorbent polymers used in the sanitary pads can absorb this moisture, leading to a non-sanitary product (T.Bothra). Second, it has been reported that these women face difficulties selling their pads. One of the reasons is because they lack training and hence, they do not know how to market their products (T.Bothra, M.Batthacharjee). According

to T.Bothra, these women do not have a proper space where they can sell these products. It has also been reported by M.Batthacharjee that it is hard for them to compete against multinationals which are trying to make inroads in rural areas. Indeed, self-help group sanitary pads are sometimes perceived as inferior products because their packaging is not as elaborate as that of famous brands. Third, according to M.Batthacharjee, these women do not do a great job at education and awareness as they usually present a very basic module. This is problematic because, as discussed already, the Indian context requires appropriate education and awareness sessions about menstruation. Fourth, one problem set forth by R.Kulkarni is the fact that these women do not receive enough support from the people who sell the machines and the raw materials. She states that small-scale enterprises are often trained for a few days, they receive stock of raw materials and then the companies rarely follow-up or monitor what is happening. According to Kulkarni, it is not because these production units are small and decentralized that they need less attention than bigger companies R.Kulkarni. And fifth, both A.Muralidharan and T.Bothra point out that these small-scale units are not necessarily economically viable as the operation costs are high. The machines and raw materials are expensive, and salaries must be paid even if the business is not doing well (A.Muralidharan).

As has been highlighted in the literature review (see section 1.2.2.3), affordability represents an important barrier to the access of safe and hygienic menstrual products. Women in low-income communities do not have much budget to spare on menstrual products and even low-cost sanitary pads can be too expensive. Based on H.Narula's experience, these women do not have a separate budget allocation for these products and hence they cut expenses and save money to get any menstrual products which they can afford. According to J.Mandal, reducing the price of its compostable pads would require much research and development to scale up its manufacturing process. Unfortunately, just like many social enterprises, Aakar Innovations faces a lack of funding.

A common way to tackle both the affordability and the accessibility issues are donations of free or subsidized menstrual products. To begin with, there are two common ways social enterprises proceed to fund these menstrual product distributions. The first one is to use the proceedings of their sales in urban areas e.g., Saathi, or internationally e.g., Eco-Femme. Another one is through fundraising from CSR initiatives or donors. Next, these pads are also often subsidized. According to P.Jangra, the reason why it is important to charge a small amount is that if they are free, the risk is that people might end up not using it or using it for other purposes. Another reason is that women actually want to pay for these

products (K.Walking). Setting the price is tricky according to K.Walking, which is why Ecofemme has kept the price within a range. However, Eco-Femme has found that women are usually ready to pay approximately what a year of sanitary pad supply would have cost them. An Eco-Femme pad is thus usually sold to underprivileged women at a subsidized rate of 60 – 100 INR and the production cost is about 100 INR. An insight brought forward by T.Bothra, K.Walkin and H.Narula is the importance to assess the needs of the community instead of doing blind-sighted donations. For instance, in some villages women do not have undergarments, which makes the distribution of sanitary pads useless.

3.3.2.3 Summary of discussion - see table 8

Table 8 Synthesis of led discussions - own work

POOR MENSTRUAL HEALTH AND HYGIENE			
Problems	Materials		Awareness
	Lack of access to clean menstrual products	Lack of affordability	Lack of awareness about menstruation and the existing menstrual products
	- Eco-friendly menstrual products are even less accessible than disposable pads in rural areas	- The price points of eco-friendly menstrual products are too high for rural areas	- Very few people are aware of the existence of eco-friendly menstrual products - Menstruators do not know how these
Key insights	• Small-scale production units - Not enough investment in machinery leading to substandard quality of pads - Difficult for women to sell the menstrual pads (lack of sales training, place to sell, difficult to compete against multinationals) - Need for follow-up from the machine sellers • Distribution of pads - Need to charge a small symbolic price to ensure proper use of the menstrual product - Importance to analyse the context before distributing blindly - Must be paired with education and	• Important to explain to women the savings made from using reusable vs disposable • Need for investment in R&D and production facilities to bring down the cost of compostable pads made from agrowaste	• Importance of informed choice - Menstruators should be aware of existence of each menstrual products and their respective merits and demerits • Apart from schoolgirls, other touchpoints to raise awareness are: - Doctors - Faith Leaders - Mothers • Eco-friendly menstrual products are still restricted to a privileged part of society • Lack of awareness about the existence of reusable products - No advertisements (not much budget) - Leads to a mental barrier: hard to make women try the product • Awareness and education sessions: - Share scientific facts to address the taboos - Start at a young age - Make it entertaining (comic books, video)

	awareness and needs a follow-up - Better reach when done with the government		- Importance of trust and rapport building - Need for follow-up
--	---	--	--

3.3.3 Comparison of the different candidates

This part provides an answer to the question “*Are social enterprises the most suitable players to both improve MHH and commercialize environmentally friendly menstrual products?*”. In order to assess whether social enterprises are the best candidates to increase the access to eco-friendly menstrual products, it is important to compare the different type of companies commercializing menstrual products.

The most obvious category comprises the large-scale manufacturers such as P&G or J&J. But for large scale manufacturer to be viable candidates for this work, it would require them to start producing and commercializing environmental friendly menstrual products. Although J.Malik, M.Bhattacharjee, H.Narula, S.Pawar and S.Jha do not rule out the possibility, they do not see this happening in the close future. This belief is also reinforced by the fact that multinationals seem unwilling to collaborate (see 3.1.1 Methodology) and answer to questions related to their commitment to the environment (see Appendix 3). Several arguments drawn from the discussions point towards this same conclusion. Firstly, the market for sanitary pads in India is huge and multinationals have a good business case in India as it is a product which is accepted and used by many women (M.Bhattacharjee). Sanitary pads imply repeat sales and thus pushing consumers to adopt reusable products would lead to less sales for multinationals (R.Malik). Also, currently the demand for eco-friendly menstrual products is driven by a privileged section of the society (H.Narula) and hence only a very small part of the population is currently interested in these products. According to Shalini Pawar, unless there are huge volumes and the cost of manufacturing is lower than for regular sanitary napkins, it does not make much business sense for multinationals to commercialize eco-friendly period products. Therefore, multinationals will probably not enter this market until a demand emerges (H.Narula, S.Jha). Secondly, they have already invested in huge plants and machinery which are not adapted to the production of reusable pads or menstrual cups. Thirdly, there are currently no incentives (e.g., taxation rate, grants etc.) from the government to switch to eco-friendly products. R.Malik, which is the founder of Happy Turtle and who has worked for P&G for several year, believes multinationals might switch to bioplastic based sanitary pads at best. This

belief is shared by M.Bhattacharjee who thinks it is more likely that multinationals start reducing their use of plastic and chemicals in sanitary pads or use more biodegradable materials.

Although it seems like incumbent multinational companies will not enter the reusable menstrual product market anytime soon, S.Pawar mentions that she has seen big pharmaceutical companies who have started including menstrual cups as part of their offering, hence entering the market.

Another candidate is composed of small-scale enterprises. S.Pawar highlights the fact that it is usually small-scale enterprises who lead the wave of eco-friendly products across sectors in India. According to a report from the Organisation for Economic Co-operation and Development, small and medium-sized enterprises are key to inclusive and green growth. Eco-innovators, for instance, can develop or lead new green industries, especially in local or emerging markets which might be unattractive or unviable to large companies (Koirala, 2018). In recent years, the feminine hygiene industry in India has seen the emergence of several small-scale enterprises which are commercialising eco-friendly products (S.Pawar). Although these enterprises move the feminine hygiene industry to a more sustainable direction, the customers who are currently buying these products are mostly privileged consumers, who are either eco-conscious or health conscious (S.Pawar). These companies do not reach low-income communities and rural areas which are the ones most impacted by poor menstrual hygiene practices. As opposed to the sanitary pad industry which is highly competitive due to the number of existing brands and the presence of giant conglomerates such as P&G, the environmentally friendly menstrual product industry is far from being saturated and attracts the few consumers who are environmentally conscious or health conscious. As the eco-consciousness of consumers in India is rising (see section 2.2.5.4), the customer base of these enterprises will probably grow and hence they have less incentive small-scale enterprises will . Therefore, small-scale enterprises have no incentive to commercialize eco-friendly products in these areas.

The last category of potential candidate is thus made of social enterprises which can be considered as a hybrid structure between a for profit and a non-profit organization (K.Walking). As mentioned in the literature review, the aim of social enterprises is to address unmet needs in communities. Social enterprises are currently the ones reaching out to marginalized populations, trying to improve MHH. The five social enterprises interviewed blend the commercializing of their products with education and awareness sessions as well as

distributions of products. These enterprises have been successful in rural areas because they did not only focus on the product, but they also did product interventions, education etc. However, combining both the product and the non-profit interventions is not an easy task (K.Walking, M.Bhattacharjee). As Kathy Walking, Eco-Femme, puts it (translated from appendix 4): *“(...) run both a business and a non-profit at the same time. That's challenging, you know, they're two different animals and have two very different sorts of, thinking, approaches and to try to bring them together is not super easy but rich and interesting.”*

In conclusion, social enterprises are currently the only (and consequently the best) candidates to improve MHH and commercialize environmentally friendly menstrual products. However, the difficulty of combining both the for-profit and not-for-profit part of their business calls for their collaboration with other stakeholders to maximize their positive impact on MHH.

4 PART 4: Conclusion and recommendations

The following sections summarize the research and draw general conclusions from the analysis. After, recommendations are provided. Finally, limitations and future research suggestions for this thesis are presented.

4.1 Conclusion

The purpose of this thesis was to explore solutions to the problems related to MHH in India which combine both a social and an environmental component. Social enterprises commercializing environmentally friendly menstrual products such as Aakar Innovations, Eco-Femme or Saathi seem to be combining both successfully. However, the scale of the MHH issue raises the question of the extent to which social enterprises can actually have an impact, which leads to the research question: *“To what extent can social enterprises commercializing environmentally-friendly menstrual products improve the state of Menstrual Health and Hygiene in India”*.

To best answer this questions, three sub-research questions were developed: (1) *“Are social enterprises the most suitable players to both improve Menstrual Health and Hygiene and commercialize environmentally friendly menstrual products and what barriers do they face?”*, (2) *“How can social enterprises improve Menstrual Health and Hygiene?”*. (3) *“Is there one eco-friendly product offered by social enterprises which would fit the Indian context best?”*

Based on the answer to these three questions, social enterprises commercializing environmental friendly menstrual products seem to improve MHH, but only to a certain extent.

Firstly, although environmentally friendly menstrual products are a great solution to reduce the impact on the environment, none of them are magic bullets to the MHH problems in India. As each product has its own merits and demerits, there is no one-size-fits all for every woman's menstrual needs. The adoption of a certain menstrual product is thus highly contingent on the preferences and the context each woman finds herself in such as access to infrastructure, level of awareness, available disposable income, etc. For instance, in situations where women lack the means to sanitize reusable products properly, thus putting them at risk of infections, disposable products remain a better option. Also, in a society still rooted in religious and class practices, the misinformation and myths surrounding a product as intimate period protection can be pervasive and difficult to battle (cf. virginity & reusable cup). The ease of adoption of menstrual products is very low and requires an important learning phase and awareness phase.

Secondly, for MHH to be improved, social enterprises can have an impact on two of the three key problems identified, namely materials (i.e., accessibility and affordability) and awareness as infrastructure is out of their scope of action.

It appears that, regarding the materials, social enterprises face many barriers. Environmental friendly products require a relative high upfront investment and are thus unaffordable for low-income communities. Owing to a lack of funding and to the fact that they cannot reach economies of scale due to their small size, the price of products offered by grass-rooted social enterprises can hardly be reduced. Also, the small scale of these social enterprises, added to the lack of awareness and thus demand for these products leads to a limited accessibility. Indeed, social enterprises' eco-friendly period products can mostly be found on e-commerce platforms which are not accessible to low-income communities and rural areas. To expand the access underprivileged women with these products, the most common method used in MHH schemes is the distribution of free or subsidized pads. As has been observed with the five social enterprises interviewed, these distribution rounds are funded either by the proceedings of their international and/or urban sales, or through fundraisings. This reduces the extent to which social enterprises can improve MHH as it implies that, to reach low-income communities, it relies on the success of its sales as well as the provision of funds from external sources. The other MHH related-problem on which social enterprises have an impact is awareness. Indeed, social enterprises raises awareness and educate women both in person and online. By breaking the silence, addressing the taboos and providing scientific-based, unbiased information about

menstruation, its products, and the female reproductive system, social enterprises can have a considerable impact. By starting conversations,

Finally, social enterprises, due to their hybrid nature which combines profit driven activities with strong social missions, are inherently better positioned to improve MHH compared to other candidates from the private sector (i.e. multinationals and small-scale enterprises). First, although multinationals could have the scale to expand the access to environmentally friendly option, they have no incentive to start producing them in the close future. The main reason thereby is that it does not make much business sense for them as the market for these eco-friendly menstrual products is still very small and building its customer base requires considerable efforts. Second, small-scale enterprises already offer environmentally friendly products but their customer base is mostly eco-conscious or health conscious privileged women. The fact that they do not pair their profit-driven activities with social initiatives targeting underprivileged communities thus leads to a reduced impact on MHH. Also, the mere fact of giving access to eco-friendly menstrual products is not enough

In conclusion, social enterprises commercializing environmentally friendly menstrual products are an important component of the MHH response, but they can only improve MHH to a certain extent. Their most important area of impact is awareness and to a lesser degree, and provided it collaborates with the right stakeholders, it can also expand the access to eco-friendly and hygienic menstrual protections. This paper

4.2 Recommendations

In this section, several recommendations are provided. First, to social enterprises, to increase the extent to which they can have a positive impact on MHH and next, to stakeholders which could help support social enterprises commercialising environmentally-friendly menstrual products.

4.2.1 Social enterprises

As there is no one-size-fits all solution, the first recommendation would be for social enterprises to adopt a product-mix approach and hence commercialize or provide the access to several types of environmentally friendly products. is thus one way forward to best address MHH in urban and especially rural setting. It is thus important to provide women with unbiased information to help them make an informed choice. If social enterprises are commercializing only one type

of environmentally friendly menstrual products, their general advocacy for MHH should transcend their offering and showcase women all the available options to women.

A second recommendation is for social enterprises to build strong and long-term ties with other NGOs, governmental institutions, donors or CSR programs. Indeed, for social enterprises to expand their impact in rural and low-income communities, it is crucial that they increase the access to their product. It could thus be interesting for them to leverage the distribution networks of other players such as NGOs which are already active in rural areas. Also, due to the unaffordability of their products, added to the difficulty of combining the commercial and social dimension of their business, securing complementary source of funding to sponsor their activities is essential. Additionally, when doing these interventions, it is essential that social enterprises or the partners they are working with assess and understand the need of the target group.

The third recommendation is to extend the entry points of their interventions. Firstly, although targeting school going girls allows to decrease the risk of girls adopting poor MHH habits, it leaves girls who are not going to school as well as women behind. Therefore, other entry points such as factories, farms, workplaces and intervention in villages should be considered as well. Furthermore, beyond menstruating girls and women, other key influencers should be provided with awareness and education sessions. One of the main key influencers which should be targeted with scientific-based and unbiased information are men. This will help destigmatize menstruation and advance the conversation with a group which often has decisional power both at the political and at the household level. Other key influencers to consider are doctors and religious leaders.

The fourth recommendation is to keep developing fun and engaging ways to raise awareness. Firstly, during interventions, it is important to captivate the audience's attention. One could think of games, comic books, theatre play, etc. Secondly, social enterprises should keep raising awareness, breaking the taboos and educating its audience online. To reach people which are not part of their target audience, social enterprises could inter alia, try to interview with radio programs, commission a documentary on MHH and the impact it has on women and the environment, etc.

4.2.2 Other stakeholders

There are several ways stakeholders in the MHH field could improve MHH by supporting social enterprises and improve MHH.

A first recommendation is for stakeholders to support social enterprises financially. This could be done in various ways. One would for the government to provide subsidies and incentives to encourage the establishment of social enterprises commercializing environmentally friendly menstrual products. Another way would be for investors to channel funds into the research and

development of how to produce local production process. Bringing down the costs would enable to increase the adoption and production scale of compostable pads. Improving the technologies involved in the production of pads made of agro-waste would help

A second recommendation is for the government to establish standards along with testing capabilities. Firstly, standards for eco-friendly menstrual products should be developed. This could help reduce the imports of cheap and low-quality products in the Indian market. To reduce greenwashing, recognizable certification labels should be developed and advertised to the consumer. Secondly, standards for plastic-based sanitary pads should also be updated and rules set for them to reduce their use of petrochemical based materials. A risk from this recommendation, however, is that the cost of sanitary pads increases.

A last recommendation is for distribution schemes to provide women with a bucket of choice. Indeed, as has been extensively stressed in this thesis, no one-size-fits all exists in terms of menstrual products and hence, to appropriately address poor MHH practices, women should be able to use products which fits their need. A solution for state government schemes would be, for instance, to provide girls with an awareness session followed by the opportunity to either choose a “monthly subscription” for sanitary pads or the one-time provision of a reusable sanitary pad.

4.3 Limitations

This thesis faces several limitations. The main limitation is the fact that India is a very vast and highly diverse country in terms of languages, regions, class, culture, religion, economy etc. Hence, there are many disparities in economic growth and human development across Indian regions (Kwatra & Bhattacharya, 2019). Although this thesis has generalized Menstrual Health and Hygiene across all Indian states, the MHH context probably varies to some extent depending on the region. Nevertheless, based on the academic literature and the reports from NGOs, the key issues highlighted in the present work seem to be relevant across India. Also, a limitation is the fact that only successful social enterprises have been interviewed. To better determine the extent to which social enterprises commercializing eco-friendly menstrual product could improve MHH it would have been interesting to collect insights from social enterprises which have failed. Collecting insights from multinationals would also helped nuance the results of this study. Unfortunately, due to the absence of responses, this was not possible. Finally, a limitation which this thesis faced is the ambiguity with the term “social enterprise”. As mentioned before, as it is a rather recent concept, it has not yet clearly been defined in the literature. This raises the degree of interpretation as both the empirical literature and the interviewees might have different understandings of what social enterprises are.

Additionally, given the desktop-based research character (cf. terrain work was impossible due to Covid-19 outbreak), this work is only reflecting information gathered through web research and interviews. Other sources of information (e.g., store visits, production facility tours, informal talks with menstruators on-site etc.) have not been possible and the insights that could have been gathered are thus absent.

Other adjacent elements of MHH (e.g., medication against severe menstrual pain, specific rinsing soap etc.) although of interest were deemed marginal in India's developing personal health economy and thus not addressed.

4.4 Further Research

Firstly, as very little literature seems to have been written on the problematic addressed in this thesis, further research on the topic is essential to affirm the produced results. This study could for instance be supplemented with quantitative studies among menstruators to analyze the barriers of adoption of eco-friendly menstrual products. This would allow to confront the observations of the interviewees with the reality. Researchers could also identify different initiatives taken to raise awareness on menstrual health and measure which are the most impactful and preferred among menstruators. This could help design awareness and advertisement campaigns which could engage girls and women and help reduce the social stigma associated with menstruation.

Secondly, an area which requires further research are disposable diapers. Although diapers do not face as many barriers to their adoption as menstrual products, their environmental impact is much more sizable. Whereas a woman menstruates for a few days every month, a baby needs diapers every day for the first year of its life. This results in a considerable amount of waste created every day. Besides, these diapers need around 500 years to decompose as they are made of at least 30% of non-biodegradable products (Down to Earth, 2005). FabPad and EcoFemme are already commercializing reusable diapers and Aakar Innovations is currently running trials on compostable diapers (J.Mandal). Research should thus be carried out on how eco-friendly diapers could provide a solution to this growing environmental threat. It would be in the same ideology of this work, namely, to analyze the alternatives provided by social enterprises to shape an industry more conscious of its environmental impacts.

5 **Bibliography**

- Aakar Innovations. (2021a). Aakar Social. <https://www.aakarinnovations.com/aakar-social>
- Aakar Innovations. (2021b). Mini Factories. Retrieved August 5, 2021, from <https://www.aakarinnovations.com/mini-factories>
- Aakar Innovations. (2021c). What we do. <https://www.aakarinnovations.com/aakar-innovation>
- Ajmeri, J. R., & Ajmeri, C. J. (2016). Developments in the use of nonwovens for disposable hygiene products. *Advances in Technical Nonwovens*, 473–496. <https://doi.org/10.1016/b978-0-08-100575-0.00>
- Amaya, L. (2020). Menstrual Health is Essential to Build Back Better Beyond COVID-19. FSG. <https://www.fsg.org/blog/menstrual-health-essential-build-back-better-beyond-covid-19>
- Anand, T., & Garg, S. (2015). Menstruation related myths in India: Strategies for combating it. *Journal of Family Medicine and Primary Care*, 4(2), 184–186. <https://doi.org/10.4103/2249-4863.154627>
- Arora, N. (2017). Menstruation in India: Ideology, politics, and capitalism. *Asian Journal of Women's Studies*, 23(4), 528–537. <https://doi.org/10.1080/12259276.2017.1386817>
- Avni. (2020a). Avni Pacer. My Avni. <https://www.myavni.com/avnipacer/>
- Avni. (2020b). Why Avni. My Avni. <https://www.myavni.com/why-avni/>
- Avni. (2021a). Avni Ambassador. My Avni. <https://www.myavni.com/avni-insider/>
- Avni. (2021b). Avni Safepad - Buy Online. My Avni. <https://www.myavni.com/product/avnisafepad/>
- Aylward, P., Little, K., Sharma, V., Satpati, M., Singh A., Ahmed, F., Punzi M., Rosenberg, S., Caruso, B. Increasing Access to Menstrual Hygiene Products in India: A market development approach. Population Services International. 2018.
- Babbar, K., & Saluja, D. (2020). Hygienic Sanitary Items Usage and Ovulatory Cycle Knowledge in India. <https://doi.org/10.21203/rs.3.rs-33957/v1>
- Babbar, K., Saluja, D., & Parmar, S. (2020). Menstrual Hygiene Day: Why Menstrual Health Belongs on India's Political Agenda. *The Wire*. <https://thewire.in/rights/menstrual-hygiene-day-why-menstrual-health-belongs-on-indias-political-agenda>
- Banerjee, A., Alam, S., Singh, A., & Mishra, N. L. (2020). *Access to drinking water, sanitation improve across states, urban-rural divide remains: NFHS-5*. Down to Earth. <https://www.downtoearth.org.in/news/rural-water-and-sanitation/access-to-drinking-water-sanitation-improve-across-states-urban-rural-divide-remains-nfhs-5-74739>
- Banerji, A. (2018). India scraps tax on sanitary pads in boost for girls' education. Reuters. <https://www.reuters.com/article/india-women-sanitation-idUSL8N1UG4HN>
- Barua, A. (2021). *Why One Woman Decided to Launch a Menstrual Hygiene Kit After Her Shift to Cloth Pads*. The Better India. <https://www.thebetterindia.com/246267/menstrual-hygiene-kit-cloth-pads-avni-safepads-women-health-ana79/>
- BBC News. (2017). India girl kills herself over “menstruation shaming.” <https://www.bbc.com/news/world-asia-india-41107982>
- BBC News. (2019). What is India's caste system? <https://www.bbc.com/news/world-asia-india-35650616>

- Bhabesh, H. (2015). An Insight to the Structure of the North East Indian Retail Sector. Munich Personal RePEc Archive. https://mpra.ub.uni-muenchen.de/63945/1/MPRA_paper_63945.pdf
- Bloomberg. (2021, August 8). INR-EUR X-RATE. <https://www.bloomberg.com/tosv2.html?vid=&uuid=d0954050-fabc-11eb-834c-c779d29e834d&url=L3F1b3RIL0IOUkVVUjpDVVI=>
- Bothra, T. (2021). *#MeetTheMB100 - Tarun Bothra, Co-Founder, Saathi*. Meaningful Business Community. <https://meaningful.business/meetthemb100-2020-tarun-bothra-co-founder-saathi/>
- British Council. (2016). The state of social enterprise in India. https://www.britishcouncil.org/sites/default/files/bc-report-ch4-india-digital_0.pdf
- BTI. (2020). BTI 2020 India Country Report. BTI Project. <https://www.bti-project.org/en/reports/country-report-IND-2020.html#pos9>
- Bureau of Pharma PSUs of India. (2021). FAQ. Jan Aushadi. <http://janaushadhi.gov.in/FAQ.aspx>
- Business Insider. (2021). Whisper India has finally started showing period blood with the help of red liquid in its campaigns. <https://www.businessinsider.in/advertising/brands/article/whisper-india-has-finally-started-showing-period-blood-with-the-help-of-red-liquid-in-its-campaigns/articleshow/83142146.cms>
- Business World. (n.d.). Arundati Muralidharan. <http://www.businessworld.in/author/Guest-Author/Arundati-Muralidharan-86541/>
- Cambridge Dictionary. (2021). Social Enterprise. Cambridge. <https://dictionary.cambridge.org/us/dictionary/english/social-enterprise>
- Capgemini Research Institute. (2020). How sustainability is fundamentally changing consumer preferences. Capgemini. https://www.capgemini.com/wp-content/uploads/2020/07/20-06_9880_Sustainability-in-CPR_Final_Web-1.pdf
- Chakravorty, J. (2020). Being biodegradable is not enough, sanitary pads need to be compostable - Times of India. The Times of India. <https://timesofindia.indiatimes.com/life-style/health-fitness/health-news/being-biodegradable-is-not-enough-sanitary-pads-need-to-be-compostable/articleshow/78221448.cms>
- Chandna, H. (2020). Modi govt plans Rs 12,000 cr boost for access to sanitary pads, eyes corporates as partners. ThePrint. <https://theprint.in/health/modi-govt-plans-rs-12000-cr-boost-for-access-to-sanitary-pads-eyes-corporates-as-partners/490377/>
- Chandra, T. (2019). Literacy in India: The Gender and Age Dimension (No. 322). Observer Research Foundation. https://www.orfonline.org/research/literacy-in-india-the-gender-and-age-dimension-57150/#_edn21
- Corporate Finance Institute. (2020). 4 P's of Marketing. <https://corporatefinanceinstitute.com/resources/knowledge/other/4-ps-of-marketing/>
- Das, A. K. (2020). India to develop standards for menstrual hygiene products. Chemical Watch. <https://chemicalwatch.com/175718/india-to-develop-standards-for-menstrual-hygiene-products>
- Dasgupta, S. (2019). Impact of exposure to mass media on female empowerment: Evidence from india. International Journal of Development Issues, 18(2), 243-258. doi:<http://dx.doi.org.proxy.bib.ucl.ac.be/10.1108/IJDI-10-2018-0156>

- Dasra. (2015). Spot On! Improving Menstrual Health and Hygiene in India. <https://www.dasra.org/assets/uploads/resources/Spot%20On%20-%20Improving%20Menstrual%20Management%20in%20India.pdf>
- Dipesh Dhelia. (n.d). *Profile* [LinkedIn page]. LinkedIn. Retrieved July 10, 2021 from <https://www.linkedin.com/in/dipesh-dhelia-a6882241/>
- Down to Earth. (2005). Bad for babies. <https://www.downtoearth.org.in/news/bad-for-babies-9085>
- Eco-Femme. (n.d.-a). About – EcoFemme. Ecofemme. Retrieved August 10, 2021, from <https://ecofemme.org/about/>
- Eco-Femme. (n.d.-b). How We Work – EcoFemme. Ecofemme. Retrieved August 10, 2021, from <https://ecofemme.org/about/how-we-work/>
- Eco-Femme. (n.d.-c). In Action. Ecofemme. Retrieved August 10, 2021, from <https://ecofemme.org/in-action/>
- Eco-Femme. (n.d.-d). Kathy. EcoFemme. Retrieved August 9, 2021, from <https://ecofemme.org/team/kathy/>
- Eco-Femme. (n.d.-e). Shop – EcoFemme. Ecofemme. Retrieved August 10, 2021, from <https://ecofemme.org/shop/>
- Encyclopedia Britannica. (n.d.). India - People. Retrieved August 4, 2021, from <https://www.britannica.com/place/India/People>
- Engineering for change. (2020). Saathi Pads. Retrieved from <https://www.engineeringforchange.org/solutions/product/saathi-pads/>
- Epea. (2020). Cradle to Cradle. Retrieved from <https://epea.com/en/about-us/cradle-to-cradle>
- Equator Initiative. (2020). Aakar Innovations – Equator Initiative. <https://www.equatorinitiative.org/2020/04/24/solution11423/>
- ETtech. (2021). India to have 900 million active internet users by 2025, says report. The Economic Times. <https://economictimes.indiatimes.com/tech/technology/india-to-have-900-million-active-internet-users-by-2025-says-report/articleshow/83200683.cms?from=mdr>
- ETV Bharat. (2020). There is a leak in India’s sanitary pad industry! ETV Bharat News. <https://www.etvbharat.com/english/national/business/business-news/there-is-a-leak-in-indias-sanitary-pad-industry/na20200730060122165>
- Ganesh, U., Menon, V., Kaushal, A., & Kumar, K. (2018). The Indian Social Enterprise Landscape - Innovation for an Inclusive Future. Bertelsmann Stiftung. <https://www.bertelsmann-stiftung.de/en/publications/publication/did/the-indian-social-enterprise-landscape>
- Ganguly, S. (2021). *This Thane-based startup is developing eco-friendly menstrual care products*. YourStory.Com. <https://yourstory.com/2021/04/thane-startup-avni-eco-friendly-menstrual-care-products/amp>
- Garikipati, S. (2020). The future of periods can now be sustainable and cheap. The Conversation. Accessed on the 2nd of June 2021 <https://theconversation.com/the-future-of-periods-can-now-be-sustainable-and-cheap-133025>
- Garikipati, S. (2021). Asymmetric Information in Menstrual Health and Implications for Sustainability: Insights from India. Sustainable Consumption and Production, Volume I, 1, 391–412. https://doi.org/10.1007/978-3-030-56371-4_19

- Geertz, A., Iyer, L., Kasen, P., Mazzola, F., & Peterson, K. (2016). Menstrual Health in India - Country Landscape Analysis. FSG. https://menstrualhygieneday.org/wp-content/uploads/2016/04/FSG-Menstrual-Health-Landscape_India.pdf
- Global Menstrual Collective. (n.d.). Who We Are. Retrieved August 7, 2021, from <https://www.globalmenstrualcollective.org/who-we-are/>
- Government of Maharashtra. (2021). Anganwadi Functions : Women and Child Development Department, Govt. of Maharashtra, India. Women and Child Development Department. <https://womenchild.maharashtra.gov.in/content/innerpage/anganwadi-functions.php>
- Green Dot Bioplastic. (n.d.). A straightforward explanation of biodegradable vs. compostable vs. oxo-degradable plastics. Retrieved August 11, 2021, from <https://www.greendotbioplastics.com/biodegradable-vs-compostable-vs-oxo-degradable-plastics-a-straightforward-explanation/>
- Hait, A., & Powers, S. E. (2020). Dataset: Feminine hygiene product lifecycle inventory and impact assessment. Data in Brief, 28, 104851. <https://doi.org/10.1016/j.dib.2019.104851>
- Hayes, A. (2021). Gini Index. Investopedia. <https://www.investopedia.com/terms/g/gini-index.asp>
- Hennegan, J., Montgomery, P., (2016). Do Menstrual Hygiene Management Interventions Improve Education and Psychosocial Outcomes for Women and Girls in Low and Middle Income Countries? A Systematic Review. PLoS ONE 11(2): e0146985. <https://doi.org/10.1371/journal.pone.0146985>
- IANS. (2021). “E-commerce growth in tier-2, 3 cities outpace tier-1 Indian cities.” ETRetail.Com. <https://retail.economictimes.indiatimes.com/news/industry/e-commerce-growth-in-tier-2-3-cities-outpace-tier-1-indian-cities/82024142>
- IIPS. (2017). National Family Health Survey (NFHS-4), 2015–16: India. International Institute for Population Science. <https://dhsprogram.com/pubs/pdf/FR339/FR339.pdf>
- International Trade Administration. (2020). India - Distribution and Sales Channels. <https://www.trade.gov/knowledge-product/india-distribution-and-sales-channels>
- Joe, W., Kumar, A., & Rajpal, S. (2018). Swimming against the tide: economic growth and demographic dividend in India. Asian Population Studies, 14(2), 211–227. <https://doi.org/10.1080/17441730.2018.1446379m>
- Kaka, N., Madgavkar, A., Kshirsagar, A., Gupta, R., Manyika, J., Bahl, K., & Gupta, S. (2019). Digital India: Technology to transform a connected nation. McKinsey. <https://www.mckinsey.com/~media/McKinsey/Business%20Functions/McKinsey%20Digital/Our%20Insights/Digital%20India%20Technology%20to%20transform%20a%20connected%20nation/MGI-Digital-India-Report-April-2019.pdf>
- Kane, G.M. (2017). Bringing the Circular Economy to Womens’ Health in India. Retrieved from <https://gracemkane.com/2017/03/10/circular-sanitary-pads/>
- Kaur, R., Kaur, K., & Kaur, R. (2018). Menstrual Hygiene, Management, and Waste Disposal: Practices and Challenges Faced by Girls/Women of Developing Countries. Journal of environmental and public health, 2018, 1730964. <https://doi.org/10.1155/2018/1730964>
- Khare, P., & Joshi, K. (2018). Systems Approach to Map Determinants of a Social Enterprise’s Impact: A Case from India. Journal of Social Entrepreneurship, 9(1), 31–51. <https://doi.org/10.1080/19420676.2017.1409254>
- Koonan, S. (2019). Sanitation Interventions in India: Gender Myopia and Implications for Gender Equality. Indian Journal of Gender Studies, 26(1–2), 40–58. <https://doi.org/10.1177/0971521518812114>

- Krishnaswamy, S. (2014). *Walking the talk – a conversation with Eco Femme*. Krypta. <https://krypta.in/2014/07/walking-the-talk-a-conversation-with-eco-femme/>
- Krithika, J., & Berith, A. (2019). Women's Product Preference with Reference to Sanitary Napkins. *IOSR Journal of Business and Management*, 21(2), 01–04. <https://doi.org/10.9790/487X-2102060104>
- Kruse, P. (2021). Exploring International and Inter-Sector Differences of Social Enterprises in the UK and India. *Sustainability*, 5870, 1–13. <https://doi.org/10.3390/su13115870>
- Kumar, N., Raghunathan, K., Arrieta, A., Jilani, A., & Pandey, S. (2021). The power of the collective empowers women: Evidence from self-help groups in India. *World Development*, 146, 105579. <https://doi.org/10.1016/j.worlddev.2021.105579>
- Kumar, S. (2020). Menstrual health in India needs more than just distribution of low cost sanitary pads. Observer Research Foundation. <https://www.orfonline.org/expert-speak/menstrual-health-in-india-needs-more-than-just-distribution-of-low-cost-sanitary-pads/>
- Kwatra, N., & Bhattacharya, P. (2019). The regional disparity challenge. Mint. <https://www.livemint.com/news/india/india-s-growing-regional-inequality-challenge-1566980280456.html>
- Lal Sakhi. (n.d.). Our Team. Retrieved August 9, 2021, from <https://lalsakhi.in/our-team/>
- Leroy, Y., Yannou, B., Murthy, L., Lallmahomed, A., & Yannou-Le Bris, G. (2016). Which hygienic products for which continent? Design for usage and sustainability (Y. Leroy, B. Yannou, L. Murthy, A. Lallmahomed, & G. Yannou-Le Bris, Eds.; pp. 311–320). <https://hal.archives-ouvertes.fr/hal-01444960v2/document>
- Lexico. (n.d.). Virginity. Lexico.Com. Retrieved from <https://www.lexico.com/definition/virginity>
- Lopez, M., (2020). A study of the disposal of menstrual products. [pdf] Retrieved from http://hummedia.manchester.ac.uk/institutes/gdi/research/SIUYV_A5_Booklet_2021_WEB_Spreads.pdf
- MacRae, E. R., Clasen, T., Dasmohapatra, M., & Caruso, B. A. (2019). 'It's like a burden on the head': Redefining adequate menstrual hygiene management throughout women's varied life stages in Odisha, India. *PloS one*, 14(8), e0220114. <https://doi.org/10.1371/journal.pone.0220114>
- Made Trade. (2019). Behind the Fiber: Transforming Banana Tree Waste Into Fabric. Medium. Retrieved from <https://medium.com/@madetrade/behind-the-fiber-transforming-banana-tree-waste-into-fabric-a33eb343d298>
- Mahajan, T. (2019). Imperfect Information in Menstrual Health and the Role of Informed Choice. *Indian Journal of Gender Studies*, 26(1–2), 59–78. <https://doi.org/10.1177/0971521518811169>
- Mahindra. (2019). Alternativism - A state-of-mind for true sustainability. <http://xorpq.com/news-room/knowledge-centre/impact-stories/alternativism-a-state-of-mind-for-true-sustainability>
- Mahon, T., Tripathy, A., & Singh, N. (2015). Putting the men into menstruation: the role of men and boys in community menstrual hygiene management. *Waterlines*, 34(1), 7–14. <https://doi.org/10.3362/1756-3488.2015.002>
- Mason, L., Sivakami, M., Thakur, H., Kakade, N., Beaman, A., Alexander, K. T., van Eijke, A. M., Laserson, K. F., Thakkar, M. B., & Phillips-Howard, P. A. (2017). 'We do not know': a qualitative study exploring boys perceptions of menstruation in India. *Reproductive Health*, 14(1). <https://doi.org/10.1186/s12978-017-0435-x>

- Matters, D. (2019). Look East instead of West for the future global middle class. Development Matters. <https://oecd-development-matters.org/2019/05/07/look-east-instead-of-west-for-the-future-global-middle-class/>
- Maximize Market Research Pvt Ltd. (2021). India Sanitary Napkin Market: Industry Analysis and Forecast (2019–2027). MAXIMIZE MARKET RESEARCH. <https://www.maximizemarketresearch.com/market-report/india-sanitary-napkin-market/29855/>
- Mayuri Bhattacharjee. (n.d). *Profile* [LinkedIn page]. LinkedIn. Retrieved July 10, 2021 from <https://www.linkedin.com/in/mayuribhattacharjee/?originalSubdomain=in>
- Medical Dictionary. (n.d.). Menstrual cup. The Free Dictionary. Retrieved August 11, 2021, from <https://medical-dictionary.thefreedictionary.com/menstrual+cup>
- Medline Plus. (n.d.). Menstruation. Retrieved August 10, 2021, from <https://medlineplus.gov/menstruation.html>
- MHhub. (2021). About. Menstrual Health Hub (MH Hub). <https://mhhub.org/about/>
- Miles, K., & Datta, T. (2012). Enablers for change - A Market Landscape of the Indian Social Enterprise Ecosystem. GIZ. <https://www.giz.de/en/downloads/giz2012-enablers-for-change-india-en.pdf>
- Mohan, S. (2019). 1 year later: Impact of GST exemption on Sanitary Napkins. Saral Design. <https://saraldesigns.in/1-year-later-impact-of-gst-exemption-on-sanitary-napkins/>
- Mountain Association. (2016). Spotlight on Ashoka's Social Entrepreneur Fellowship. Mtassociation. <https://mtassociation.org/uncategorized/spotlight-on-ashokas-social-entrepreneur-fellowship/>
- Muralidharan, A. (2018). Management of Menstrual Waste. Insights from India and Pakistan. WaterAid India and Menstrual Health Alliance India. https://menstrualhygieneday.org/wp-content/uploads/2018/06/WaterAid_Arundati-Muralidharan.pdf
- Muralidharan, A. (2020). Tackling menstruation sustainably: How Indias battle..ide environment-friendly sanitary pads is far from won. Firstpost. <https://www.firstpost.com/india/tackling-menstruation-sustainably-how-indias-battle-to-provide-environment-friendly-sanitary-pads-is-far-from-won-8778851.html>
- Muralidharan, A., Patil, H., & Patnaik, S. (2015). Unpacking the policy landscape for menstrual hygiene management: implications for school WASH programmes in India. Waterlines, 34(1), 79–91. <https://doi.org/10.3362/1756-3488.2015.008>
- Nanda, S. T. (2021). As India breaks the taboo over sanitary pads, an environmental crisis mounts. The Third Pole. <https://www.thethirdpole.net/en/culture/sanitary-pads-environmental-crisis/>
- National Health Mission. (2016). Scheme for Promotion of Menstrual Hygiene among Adolescent Girls in Rural India. NHM. <https://nhm.gov.in/WriteReadData/1892s/61090433691481276612.pdf>
- Netscribes. (2021). Feminine Hygiene Products Market in India 2020. Research and Markets Ltd 2021. https://www.researchandmarkets.com/reports/5264354/feminine-hygiene-products-market-in-india-2020?utm_source=BW&utm_medium=PressRelease&utm_code=szwxjs&utm_campaign=1506690+-+India+Feminine+Hygiene+Products+Market+Report+2020-2021%3a+A+Potential+Market+of+355+Million+Customers&utm_exec=chdo54prd
- New Indian Express. (2021). Andhra govt to provide free sanitary napkins to girls. <https://www.newindianexpress.com/states/andhra-pradesh/2021/mar/06/andhra-govt-to-provide-freesanitary-napkins-to-girls-2272976.html>
- O'Neill, A. (2021). Urbanization in India 2020. Statista. <https://www.statista.com/statistics/271312/urbanization-in-india/>

- Patel, D., Burnett, N., & Curtis, K. (2003). Reproductive Tract Infections (Module 3). Department of Health and Human Services.
https://www.cdc.gov/reproductivehealth/products/pubs/pdfs/epi_module_03a_tag508.pdf
- Path. (2017a). Management of menstrual waste. Pushing the Boundaries on the MHM Dialogue in India. Retrieved from https://path.azureedge.net/media/documents/ID_mhm_mens_waste_man.pdf
- Path. (2017b). Menstrual hygiene products in India: The evolving landscape. Pushing the Boundaries on the MHM Dialogue in India. Retrieved from https://path.azureedge.net/media/documents/ID_mhm_mens_prod_india.pdf
- Peberdy, E., Jones, A., & Green, D. (2019). A Study into Public Awareness of the Environmental Impact of Menstrual Products and Product Choice. *Sustainability*, 11(2), 473. <https://doi.org/10.3390/su11020473>
- Punzi, M. C., & Werner, M. (2020). Challenging the Menstruation Taboo One Sale at a Time: The Role of Social Entrepreneurs in the Period Revolution. *The Palgrave Handbook of Critical Menstruation Studies*, 833–851. https://doi.org/10.1007/978-981-15-0614-7_60
- Rajaraman, D., Travasso, S. M., & Heymann, S. J. (2013). A qualitative study of access to sanitation amongst low-income working women in Bangalore, India. *Journal of Water, Sanitation and Hygiene for Development*, 3(3), 432–440. <https://doi.org/10.2166/washdev.2013.114>
- Rajasi Kulkarni. (n.d). *Profile* [LinkedIn page]. LinkedIn. Retrieved July 10, 2021 from <https://www.linkedin.com/in/rajasi-kd/>
- Ram, U., Pradhan, M., Patel, S., & Ram, F. (2020). Factors Associated with Disposable Menstrual Absorbent Use Among Young Women in India. *International Perspectives on Sexual and Reproductive Health*, 46, 223–234. <https://doi.org/10.1363/46e0320>
- Ram, U., Pradhan, M., Patel, S., & Ram, F. (2020). Factors Associated with Disposable Menstrual Absorbent Use Among Young Women in India. *International Perspectives on Sexual and Reproductive Health*, 46, 223–234. <https://doi.org/10.1363/46e0320>
- Rastogi, A. (2018). Menstrual Hygiene Day 2018. National Health Portal Of India. https://www.nhp.gov.in/menstrual-hygiene-day_pg
- Richa Malik. (n.d). *Profile* [LinkedIn page]. LinkedIn. Retrieved July 10, 2021 from <https://www.linkedin.com/in/richa-malik/>
- Saathi. (2018). Saathi's 100% compostable and biodegradable sanitary pads - Circular Economy, Economie circulaire 2018. Climate CoLab. Retrieved from <https://www.climatecolab.org/contests/2018/circular-economy-economie-circulaire/c/proposal/1334437>
- Sajimon, P. S. (2019). Kerala's Alappuzha municipality is giving 5000 free menstrual cup to women. *The Times of India*. <https://timesofindia.indiatimes.com/city/kochi/keralas-alappuzha-municipality-is-giving-5000-free-menstrual-cup-to-women/articleshow/69844481.cms>
- Sambamoorthy, K., & Dhruv, D. (2020). P&G Hygiene and Healthcare. Motilal Oswal. <https://www.motilaloswal.com/site/rreports/637402506758864259.pdf>
- Sambamoorthy, K., & Punmiya, V. (2016). P&G Hygiene and Health Care -Large opportunity; high barriers to entry. Motilal Oswal. http://bsmedia.business-standard.com/_media/bs/data/market-reports/equity-brokertips/2016-04/14617274500.91567000.pdf
- Schoep, M. E., Nieboer, T. E., van der Zanden, M., Braat, D. D., & Nap, A. W. (2019). The impact of menstrual symptoms on everyday life: a survey among 42,879 women. *American Journal of Obstetrics and Gynecology*, 220(6), 569.e1-569.e7. <https://doi.org/10.1016/j.ajog.2019.02.048>

- Sengupta, S., & Sahay, A. (2018). Social enterprises in the Indian context: conceptualizing through qualitative lens. *Journal of Global Entrepreneurship Research*, 8(1). <https://doi.org/10.1186/s40497-018-0087-5>
- Shalini Jha. (n.d). *Profile* [LinkedIn page]. LinkedIn. Retrieved July 10, 2021 from <https://www.linkedin.com/in/shalinijhamirandian1/?originalSubdomain=in>
- Sharma, S., Mehra, D., Brusselaers, N., & Mehra, S. (2020). Menstrual Hygiene Preparedness Among Schools in India: A Systematic Review and Meta-Analysis of System-and Policy-Level Actions. *International Journal of Environmental Research and Public Health*, 17(2), 647. <https://doi.org/10.3390/ijerph17020647>
- Shukla, M. (2020). *Social Entrepreneurship in India: Quarter Idealism and a Pound of Pragmatism* (1st ed.) [E-book]. Sage Publications Pvt. Ltd.
- Singh, K. Sharma, M. (2019). Social Entrepreneurship in India: Opportunities and Challenges. *IJESC*, 9(8), 23619-23623. <https://ijesc.org/upload/8e5f0923dc0e3988cd00b8f8e2aaeb8c.Social%20Entrepreneurship%20in%20India%20Opportunities%20and%20Challenges.pdf>
- Solar Impulse. (n.d.). Saathi Eco Innovations - Member of the World Alliance. Retrieved August 5, 2021, from <https://solarimpulse.com/companies/saathi-eco-innovations>
- Sommer, M., Lee, C., Liu, D., & Gruer, C. (2020). The Extent to Which Menstruation-Related Issues Are Included in Graduate-Level Public Health Curricula. *Frontiers in public health*, 8, 442. <https://doi.org/10.3389/fpubh.2020.00442>
- Srivastava, A., & Thomson, S. B. (2009). Framework analysis: a qualitative methodology for applied policy research. *JOAAG*, 4 (2). Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2760705
- Statista. (2020). Most common languages spoken in India 2011. <https://www.statista.com/statistics/616508/most-common-languages-india/>
- Statista. (2021a). E-commerce market value India 2014–2027. Statista. <https://www.statista.com/statistics/792047/india-e-commerce-market-size/>
- Statista. (2021b). Gross domestic product (GDP) growth rate in India 2026. <https://www.statista.com/statistics/263617/gross-domestic-product-gdp-growth-rate-in-india/>
- Sugathan, S. (2018). Menstrual cup – the need and the benefits of regulation. Safety Monitor Research Foundation. <https://safetymonitor.org/menstrual-cup-the-need-and-the-benefits-of-regulation/>
- Sujata Pawar. (n.d). *Profile* [LinkedIn page]. LinkedIn. Retrieved July 10, 2021 from <https://www.linkedin.com/in/sujatapawar/>
- Sumpter, C., & Torondel, B. (2013). A Systematic Review of the Health and Social Effects of Menstrual Hygiene Management. *PLoS ONE*, 8(4). <https://doi.org/10.1371/journal.pone.0062004>
- Tandon, A., & Kansal, V. (2021). What does NFHS-5 data tell us about women empowerment in India? *India Development Review*. <https://idronline.org/what-does-nfhs-5-data-tell-us-about-women-empowerment-in-india/>
- Tanwar, S. (2019). Indian women in smaller cities are buying more tampons and menstrual cups, thanks to online shopping. *Scroll.In*. <https://scroll.in/article/929030/indian-women-in-smaller-cities-are-buying-more-tampons-and-menstrual-cups-thanks-to-online-shopping>
- Tarun Bothra. (n.d). *Profile* [LinkedIn page]. LinkedIn. Retrieved July 10, 2021 from <https://www.linkedin.com/in/tarunbothra1/>

- Tudu, P. N. (2019). Saathi Sanitary Pads: Eco-friendly pads which will make you go bananas! *International Journal of Nonprofit and Voluntary Sector Marketing*, 25(1), 1–5. <https://doi.org/10.1002/nvsm.1667>
- UNESCO Institute for Statistics. (2020). Literacy rate, adult total (% of people ages 15 and above) - India | Data. The World Bank. <https://data.worldbank.org/indicator/SE.ADT.LITR.ZS?end=2018&locations=IN&start=1999>
- UNICEF (2019). Guidance on Menstrual Health and Hygiene. UNICEF, New York, USA. Retrieved from <https://www.unicef.org/wash/files/UNICEF-Guidance-menstrual-health-hygiene-2019.pdf>
- UNICEF. (2018). FAST FACTS: Nine things you didn't know about menstruation. <https://www.unicef.org/press-releases/fast-facts-nine-things-you-didnt-know-about-menstruation#:~:text=Menstruation%20is%20a%20normal%20and,about%20two%20to%20seven%20days>.
- Unicef. (n.d.). Water, sanitation and hygiene. UNICEF India. Retrieved August 10, 2021, from <https://www.unicef.org/india/what-we-do/water-sanitation-hygiene>
- van Eijk, A. M., Sivakami, M., Thakkar, M. B., Bauman, A., Laserson, K. F., Coates, S., & Phillips-Howard, P. A. (2016). Menstrual hygiene management among adolescent girls in India: a systematic review and meta-analysis. *BMJ Open*, 6(3). <https://doi.org/10.1136/bmjopen-2015-010290>
- van Eijk, A. M., Zulaika, G., Lenchner, M., Mason, L., Sivakami, M., Nyothach, E., Unger, H., Laserson, K., & Phillips-Howard, P. A. (2019). Menstrual cup use, leakage, acceptability, safety, and availability: a systematic review and meta-analysis. *The Lancet Public Health*, 4(8), e376–e393. [https://doi.org/10.1016/s2468-2667\(19\)30111-2](https://doi.org/10.1016/s2468-2667(19)30111-2)
- Villines, Z. (2020). Are there dangers to using menstrual cups? *Medical News Today*. <https://www.medicalnewstoday.com/articles/menstrual-cup-dangers#virginity>
- Vishwakarma, D., Puri, P., & Sharma, S. K. (2021). Interlinking menstrual hygiene with Women's empowerment and reproductive tract infections: Evidence from India. *Clinical Epidemiology and Global Health*, 10(100668). <https://doi.org/10.1016/j.cegh.2020.11.001>
- WaterAid. (n.d.). *India*. WaterAid. Retrieved August 9, 2021, from <https://www.wateraid.org/where-we-work/india>
- WHO/UNICEF (2012) Consultation on draft long list of goal, target and indicator options for future global monitoring of water, sanitation and hygiene. Retrieved from <https://washdata.org/sites/default/files/documents/reports/2017-06/JMP-2012-post2015-consultation.pdf>
- Women's Health (2018). Menstruation and the menstrual cycle fact sheet. U.S. Department of Health and Human Services, Office on Women's Health.
- World Bank. (n.d.). TCdata360: Global Gender Gap Health and Survival Subindex. TCdata360. Retrieved August 11, 2021, from https://tcdata360.worldbank.org/indicators/e06df634?country=BRA&indicator=28163&viz=line_chart&years=2006,2020
- World Data Lab. (2021). World Poverty Clock. World Poverty. <https://worldpoverty.io/map>
- World Economic Forum. (2020). Global Gender Gap Report 2020. http://www3.weforum.org/docs/WEF_GGGR_2020.pdf
- World Population Review. (2021). India Population 2021. <https://worldpopulationreview.com/countries/india-population>
- WSSCC. (2019). 2019: A year of progress, opportunity and strategic reset - Leading indicators of WSSCC progress. <http://www.mentaltoy.com/resources/SHF/021/index.html>

- Yamakoshi, B. (2020). Mitigating the impacts of COVID-19 on menstrual health and hygiene. UNICEF. <https://www.unicef.org/media/68446/file/Mitigating-the-impacts-of-COVID19-on-menstrual-health-and-hygiene-Brief.pdf>
- Yasmin, S., Manna, N., Mallik, S., Ahmed, A. & Paria, B. (2013). Menstrual hygiene among adolescent school students: An indepth cross-sectional study in an urban community of WestBengal, India. *IOSR Journal of Dental and Medical Sciences*, 5(6), 22–26. <https://doi.org/10.9790/0853-0562226>

6 Appendix

Appendix 1: Price analysis of sanitary pads

	Commercial Large Manufacturers Price in INR/Unit*	Low-Cost Small Manufacturers Price in INR/Unit**	Price Difference
Ultra thin pads	8.67	3.43	1.5 times
Standard pads with wings	5.95	3.50	0.7 times
Standard pads without wings	5.32	1.00 to 2.75	1-5 times

* Average unit price = Price per pack / number of units per pack; Based on an analysis of over 169 products available in the Euromonitor Report 2014

** Price based on secondary research and interviews with low-cost small manufacturing organizations (For ultra-thin pads, the manufacturer was Saral Designs; for Standard pads with wings, the manufacturer was the pad developed by Aakar Innovations; for Standard price without wings, Jayashree Industries' recommended pricing and a few other state-run low-cost sanitary pads were considered)

Source: (Geertz et al., 2016)

Appendix 2: Illustration of cheap menstrual cups sold online




wizard® Reusable Menstrual Cup for Women - Medium Size with Pouch, Ultra Soft, Odour and Rash Free, No Leakage, Protection for Up to 8-10 Hours

Brand: wizard
★★★★★ 2 ratings

M.R.P.: ₹200.00
Price: **₹109.00** (₹109.00 / count)
You Save: ₹91.00 (46%)
Inclusive of all taxes

FREE delivery: **Wednesday, Aug 11** Details

 **Save Extra** with 3 offers

Bank Offer (2): 10% Instant Discount up to Rs.1750 with SBI Credit Cards (EMI) on Minimum purchase of Rs.5000 | [See All](#)

No Cost EMI: Avail No Cost EMI on select cards for orders above ₹3000 | [Details](#)

[See 1 more](#)

Source: Amazon India

Appendix 3: Interview request to multinational producing disposable sanitary pads

I am doing well thank you, I hope you are too. Thank you for your fast reply!

I would like to have informations for example on:

- how J&J is trying to improve Menstrual Health in India (e.g. through donations, tackling the taboos, educating its customers,...)
- if they are trying to find solution for the waste management issue that might arise with the increasing use of sanitary pads
- if they are looking into developing sustainable alternatives (e.g. organic pads, biodegradable, reusable,...)
- if they are trying to develop low-cost option for rural areas
- ...

If you would know someone that would be willing to meet online with me for +/- 30min it would be truly amazing. Of course, if you request it, I can sign a non-disclosure agreement.

↓ Latest message

Write a message...

Appendix 4: Arundati Muralidharan – WaterAid 03/06/21

Arundati Muralidharan: (...) So, I mean, we're also a WASH organization. So pragmatically, one of our big areas of work is to ensure that the WASH infrastructure for girls and women is available, especially in school settings. So that's one thing that we do. So we check if they have gender responsive wash facilities in schools for example. The other big component of any WASH organizations tends to be the hygiene component. So we have developed session plans and curriculum giving information and education on menstrual health and hygiene. But in a lot of communities, we realize that there are gender norms and social norms that influence menstruation and menstrual hygiene practices. So the community level will engage a lot with various stakeholders, men, boys, community leaders, mothers, women's groups, etc, to begin to chip away at those thoughts. So a lot of social mobilization, community mobilization, and so on happens around the issue. So we've also experimented a little bit with waste management solutions at a community level. So typically the government often uses incinerators. We've actually said that incinerators don't always work well, they break down very easily, they're not used because there is no operations and maintenance. So we need to think of "non-burn solutions" as we call them, non incinerator based solutions. So looking at things like deep-burial composting, vermicomposting, chemical treatment, etc. We have run some pilots and some of these integrated waste, menstrual waste disposal solutions as well. That's what we do pragmatically. We do a lot more stuff, the advocacy level, we've worked with national state governments on looking at guidelines for the country and the states. We have developed a

compendium of waste management solutions of how you can look at menstrual waste, how it should be approached. We've worked with other organizations to influence the government's quality standard for menstrual hygiene products and incinerators. We've been looking at procurement processes for menstrual hygiene products by government, and their supply chain mechanisms for large scale distribution, and tried to figure out where the gaps are so what needs to be plugged? So yeah, it's like, very different kinds of advocacy, like a lot of advocacy that happens in some countries is, you know, we need to talk about menstruation with children. That still remains one of our advocacy points, but it's actually gone beyond that. But we talk a lot about this concept of informed product choice, waste management solutions, quality assurance, streamlining processes. So yeah, really taking it a notch higher.

Alexandra: That's a lot of initiatives that are being taken. So if I understand correctly, you collaborate actively with the government I suppose

Arundati Muralidharan: Yes. Yes. And civil society organizations, so other NGOS

Alexandra: And do you also collaborate with the private sector?

Arundati Muralidharan: In some ways. We have a super example with the government which was revising standards for sanitary pads. We did engage with Johnson and Johnson and that revision, but otherwise, we haven't engaged with the private sector to that extent. We've tried to reach out to them but especially when we're looking at product standards, they're not very keen on sharing what they're doing.

Alexandra: Yes, I also tried to contact some of them on LinkedIn, but they are the only ones which are not replying. But do you think they could help improve the state of menstrual health and hygiene in India?

Arundati Muralidharan: Um, I mean, It depends on your perspective on improving menstrual hygiene. If your perspective is that sanitary pads are menstrual health and hygiene, then yes, but we don't think that. We think that girls and women should be given a choice as to which products they should use. You can have sanitary pads, but it's equally critical to have a basket of reusable options, cloth pads, menstrual cups that are available. So for us, the private sector will only push their products, they're very profit oriented and that's not a problem. That's not negative, that's why they exist, that's what they're here for, it's their business. But for us, who are advocates and who are working in the development sector, it's not about a product, it's not about sales, it's about making safe hygienic options available for every single girl and woman in the country. And if the private sector is going to open their market to alternative products, if they are going to look at how you can reach everyone with affordability, accessibility, if they contribute to the waste management solutions, then why not? But I'm not sure that where they're headed.

Alexandra: And according to you, is there something more that WaterAid could do to improve menstrual health and hygiene?

Arundati Muralidharan: So unfortunately, we can't get too much into the product realm, like we can't demonstrate the compostable sanitary pads, we can't do that. But we still deal with products, we talk about hygienic use, we've done some kind of capacity building of the government on reusable cloth pads, but it's hard for us to set up a production unit, for example, you know, it's way beyond our capacity. It doesn't fall within the realm of our work

programmatically. So in terms of advocacy, it's something that we still do, but not this way. I think where we can really, really chip in is on the waste management front, like as a WASH organization, we do look at various waste management solutions for solid waste for liquid waste, so I think that that's where we can really contribute. And we're starting some experiments in that in a couple of cases which give us some promising results.

Alexandra: Okay, that's great to hear. And more generally, so not necessarily just WaterAid, are there big gaps that you see in the menstrual health initiatives?

Arundati Muralidharan: Oh, yeah, I think we have a lot of gaps. I mean, we've made a lot of progress in getting very progressive in addressing this issue in looking at it in different perspectives, in the sheer number of stakeholders that are engaged. So I think we've got a lot of progress. But we still need to work on several areas. Awareness has still not reached everyone, we still need to work on that. Menstrual health and hygiene is very intimately linked with gender and unless we have more equitable gender norms in the community, we're not going to be able to address this to the extent that we need to so I think both the awareness and the whole thing of the social norms, gender norms, that still very much needs to be addressed. Product access, product quality, product use, again, big gaps in all these three areas, despite the greater availability of sanitary pads and the proliferation of other kinds of reusable products in the market. We still have, you know, gaps for access and use. I think wash facilities, huge progress, especially in schools, but less progress when we're looking at, you know, maybe other kinds of institutions. So if you look at work sites, of prisons, and other setups for women, these again, I think facilities are lacking. Waste management, big area of work. Some of the other areas are things like hygiene and girls and women with disabilities. For me, some organizations in the country have done work on that. Menstrual health and hygiene in the context of humanitarian contexts and emergencies. Again, India has done some work on it, especially to some organizations like Oxfam and Plan and some others. But it's not uniform. We've actually developed a paper on that. I think there's much to do. When we're looking at integrating attention to MHM into adolescent health and sexual and reproductive health, a big gap there. I mean, in our minds, it's so well within that, but the health sector has not been a leader in this issue. It's been the wash sector. Why is that? So I think that we need to do a better job of integrating this into SRHR. It's very much a sexual reproductive health and rights issue. We've got stuff, related to access to, like models of decentralized production and distribution, we get to understand what those models are. One level gaps, and also opportunities for us to continue to take this work forward.

Alexandra: So you just mentioned the models of decentralized production, do you think this can be a model that could work on a big scale and which could help with the problem of menstrual health?

Arundati Muralidharan: So with a small scale production unit, giving local women employment, you're improving access, that's all great. But what we forget is this also, just because there are poor women doesn't mean we can have substandard quality of products. And I think what happens with decentralized production is you invest in the cheapest machines that give you a very poor product that you and I would never use. So why do we expect these poor girls and women to use them? So I think that it's not a bad thing to be centralized after seeing some good models. But I think that we need to make sure that the investments in machinery and training are well done. Another option would be to not look at decentralized at the village level but decentralized production units at the district level. So for your production, you invest in a good machine, which has a fairly high level of production. And that can cater to the needs of

girls and women in that district. We found that it's probably a more robust model because the investments are better, and you have different products, so women are able to work on that. So for example, you train some women to operate the machine, some women to do the packaging and recording the demand. You train some women to be sales agents who go out into the communities, and they are selling the product. There's another model of decentralized distribution that we've seen is that you use these very same sample groups, but they're not involved in production. They show the product from a vendor, but then they distribute the product in the community or they sell the product. What's better is that you're taking the production out of the equation, and they simply focus on sales. The other issue with decentralized production is we think that it's an economically viable market - it's not. Machines are expensive, raw materials are expensive, you have to pay salaries even if it doesn't work out in the long run, and we have a lot of people in those cases. But this other model of procurement and distribution would be slightly more sustainable.

Alexandra: From what I've read, the governments and NGOs are really pushing for the adoption of sanitary pads. Are they also showing the other options that are available?

Arundati Muralidharan: So the government in general just because the sanitary pads are easier to procure, easier to distribute, faster solution. But we do have some state governments. So for example, we've been advocating with the government of Madhya Pradesh, which is a very large state in the country, for cloth pads for a long time. And last year, because of COVID, they were like "Oh, we need to make sure that girls and women know how to make cloth pads. Along with WaterAid they trained over 90,000 frontline workers on how to make cloth pads following a model from an NGO for Japan sells time in Rajasthan. And that's is quite an achievement from a government department to say you take over 90,000 of that nonsense. And we're going to be trying similar models in some other states as well. So with all my work with the government, you see good people and you see not so good people, but I think the thing is to keep at it, and you never know when they bite. But you have to keep at it. You've had Kerala government to introduce cups for an entire district for two reasons. One is that they had a massive flood. The second thing is that they were facing massive waste issue of all types of waste, all types of solid waste all types of domestic waste. And the district director decided to introduce cups. And we did that. And there was a fair amount who picked it up. You know, and that's very promising, I think in Chen, which is in the northeastern state of Sikkim, which is a very small and hilly state in the Himalayas, there is not enough land for having land cells, so they are very open to trying out cups. In some other northeast states they have set aside fairly decently sized production units of cloth pads as well. So there are government's at the district level, even at the state level that are very interested in these alternative models.

Alexandra: The fact that some states are implementing such schemes mean that women are open to try the menstrual cup? despite all the cultural taboos surrounding it?

Arundati Muralidharan: Yes, and there are some NGOs that have had a good experience with cups as well, in rural areas. There's a Seba Rural in Puja, there is Ark in Rajasthan and then there is the whole green the red movement, which covers urban India. So they've all had very good experiences with cups.

Alexandra: Okay, that's great to hear! And from what I've read, the schools are one of the main entry points for menstrual health initiatives. Are there any other entry points that are important or that you're looking into?

Arundati Muralidharan: So we look at schools, we look at Anganwadi centers which are these early child care centers, but they also work with adolescent girls who may not be in school. So we work with them. We look at leveraging women's self help groups. That's another area. We have also worked in worksites. So for example, factories, tea gardens, where you have a huge number of women employees, such as garment factories, and tea garden estates. So we work there as well.

Alexandra: Okay. And are men also included in initiatives that are being taken to help alleviate the cultural taboos, or are they not involved that much in all the initiatives?

Arundati Muralidharan: Um, you know, it's a bit of a tricky thing. I never know how to respond to this because I think that we have to be careful in wanting to engage men and boys. We have to do it in a way that they don't become the decision makers for us again. You know, the messaging is that you can provide your daughter and your wife with a pad. I mean, we don't need you to provide us with a pad, we just need you to stop putting hurdles for girls and women. And I think that messaging is strong, that you can buy your sister. I mean this is not a gender transformative approach. This is, you know, "let men be the decision makers for how free we can be", you know, and how I access sanitary napkins. So I think that we need to figure out how you can engage men and boys by actually challenging those gender norms. It's not about getting men to get you a product, or making you a toilet, you know, it's not about that. So I think that that's where the narrative has gone wrong, and a few organizations have really done a good job of working with men to change gender norms. You know, it's very similar to working with men for family planning, or contraceptive use and gender based violence. Organizations that have done it well are those who have not done it by giving power back to men, saying that you can choose not to beat your wife or your daughter. It's about saying, or getting men to realize that beating your wife or your daughter is just not right. You know. And I think a similar kind of narrative exists for menstrual health and hygiene.

Alexandra: Okay. And I read about a company named Saathi pads which are created from banana fiber which is an abundant agro waste. Do you know this company? And if so, do you know if these pads have the same quality as the commercial ones?

Arundati Muralidharan: We keep very close track on all products, and we try all the new products that come. So it depends again, on what you mean by quality. Because what's the goal standard you're comparing it to? A self-help group produced pad is really quite terrible. It leaks in half an hour. That's not a good quality. So the Saathi pad you know, I tried their older version and, I don't know what they're doing now, but it was perfectly fine and it was absorbent. The only thing I think is that, because they were still trying to fix that technology for processing the banana fiber well, it would crack in the middle. But apart from that, it is a perfectly good pad. You have also Aakar innovations that also has a compostable pad, extremely comfortable. They also have a variation with biosap, great pad, definitely more comfortable than your whisper or your stayfree or others that you have. So yeah, I mean, I think it really depends on how you define quality. Like for me, I would prefer not to use the commercial ones. And I'm very willing to use any of these others because I think that if there is a component to it, that makes the pad just more natural, with less added chemicals and plastic, that's better for me, I'm also willing to try different types of cloth pads, you know, I'm very much a cloth pad user. So I'm going to experiment with the good, the bad, the ugly, the leaky,... I am an advocate of choice, but I really do think that you know, pushing just sanitary pads or cloth pads is not the way to go. So we have a huge group in India of activists who believe that sanitary pads are the devil, you know, that they're just the worst thing that could have ever happened to the

planet. And they think that we need to put women's health first. But my argument to them is that if you put Women's Health first, then let them choose. They have the brains, they know their bodies, they know the context in which they live and we let them choose what they want to wear! It's our job to provide them with information we should tell them "you know, this is the benefits of a sanitary pad, but these are some of the disadvantages." Tell them about the benefits of cloth pad but also tell them about the disadvantages. It's really hard to use a cloth pad when you don't have sufficient water. Or if you live in a state which has heavy rainfall and they don't dry. For part of The COVID pandemic last year I was living in the Himalayas, in my husband's home during the monsoon and it's a cold and hilly area. Monsoons are just days of incessant rain, it's cold, and it's raining. And I had cloth pad, and it just wouldn't dry, they wouldn't dry for three days. And by the time they were dry, they would have fungus on it, and they would have mold on it. And like, my God, I mean, how can you promote something in this environment where you don't see the sun, it's cold, it's wet, ... it's not possible! And it really made me realize that at one level, it's not right to say use sanitary pads but at the other level, it's also not right, just to say use cloth and, you know, care for the environment. We should let people use those tools. Sorry, you didn't ask that question but I feel very strongly about this, about the power to choose.

Alexandra: No it's very nice that you highlighted this aspect. Regarding the initiatives that are being taken, are they very fragmented? Or does the government and the private sector, for example, manage to collaborate?

Arundati Muralidharan: So yes and no. So I think that there are opportunities, and there are collaborations that happen between private sector and government, government and NGOs, NGO and private sector and then even all three together. But does it happen everywhere? And uniformly? No. But I think India has a very long history of development programs having a government and NGO interfere. So that's not new, like some of the strongest technical partners to government are the UN agencies UNICEF, UNFPA UNDP. And we work with several state governments as well as to other organizations like Agha Khan, Tata trust and others. So I think there are opportunities. Something that I learned about government is we can critique them, because there are so many things that they do that we think are not right. But instead of critiquing them, I realize that what they are looking for is solutions. So can we provide them solutions? So if it's awareness, if it's products, if it's waste management solutions, let's provide that. So the government is open to it, like the whole work that we've done on product standards, we went to the government agency, but they said, "listen, we don't know enough, so if you can put together a technical tool, we'll bring our technical people. And let's work together on it." The process took two years, but at the end of two years, this year, the Government of India has standards for reusable cloth pads and period panties. I mean, that is a huge achievement. And that has been done with private sector government and NGO collaboration.

Alexandra: Okay, great!. Thank you for all the interesting insights you gave me. I'm actually having a hard time getting people to interview with me, so if you have someone in mind who you think I should contact, it would be super nice.

Arundati Muralidharan: what's the kind of person you want?

Alexandra: I would love to have insights from NGOs, private sectors and governments. But so far, it's mostly NGOs that are replying and private sector and governmental institutions not so much. I don't really know how to reach out to them.

Arundati Muralidharan: So the government is very hard. Like even we struggle with government there so I think that's going to be a tough one, I mean, it's tough for us.

Arundati Muralidharan: I'm not sure about private sector again. They're not very open. So I'm not sure how... I mean, again, we've had huge difficulties reaching them.

Alexandra: Okay no problem! But then maybe if you know someone from an NGO that could give me some insights, that would be very helpful. Thank you so so much for replying to my message and taking the time to interview with me, it was very nice of you. .

Arundati Muralidharan: All the very best. Bye Bye

Appendix 5: Preeti Jangra – Lal Sakhi 07/06/21

Alexandra: Yes, so maybe for a first question, could you please tell me a bit more about what Lal Sakhi does to improve menstrual health in India?

Preeti Jangra: Well, Lal Sakhi is an initiative taken by me, my name is Preeti Jangra and I'm founder and director of Lal Sakhi's work. Currently based in Bhopal in Pradesh in India. And what we are doing is, since 75% of the population in India lives in rural and 35% in urban areas. The culture, the acceptance, the acceptability, the accessibility, the availability in urban areas, it's very high. But in the context of rural India, there is almost none. So, what we have taken as initiative is we have started a movement named as change agent. So, it has started from village Carfa? Bhopal Pradesh. . So, the goal of this movement is to find and train rural women on how to switch to the menstrual cups and how to use it. We have conducted that webinar that you attended. So, the main tagline was "My journey from Capra to menstrual cup", so Capra is a Hindi word which means cloth. So, in rural contexts, most people use capra, like homemade capra made from cloth which has already been used in house like the bedsheets cotton in clothes, so they wash it and then reuse the fabric during their menstruation. So, what we have done with Lal sakhi is we have taken an initiative which is called project Dharti. So, Darty is a Hindi word which means land or my Earth. So, Decompostable Hygiene management And Recycling Training Initiative which is the abbreviation that so that everyone can connect this. So, we have initiated this project a fight for Mother Nature, so that we are just saving the lives of women, we are trying our best to transform their reproductive health. So it's a big transformation, they are mentally free. It's also very economical as well you know, three to 400 bucks in Indian currency and it runs for eight to 10 years. So, it means a lot. So, what we are doing is advocating a rural demand for the number of rupees you are spending on your plastic base sanitary napkin on your capra. Sometimes you will have to buy cloth, because you need to have a number of cloth in your house. So rural women also used to buy clothes from outside. So it's also expensive. So, what we are going to do we are going to educate them that with a menstrual cup you can save money and can invest this money to eradicate malnutrition or for your health as well. So, ultimately you are saving Mother Nature.

Alexandra: Okay, great. And how do you go about doing that? Because I read that you have a change agent program. How does it work?

Preeti Jangra: Okay, so it works with the groups of women. Have you heard about the National Rural Livelihood Mission (NRLM). It's a livelihood mission where microloans, interloaning,

small livelihood activities used to happen. And so I usually went to any random village and I would do two or three group meetings. And then I used to talk about all the three products because we don't talk about tampons with rural women, because tampons are also a new concept and it's usually used in urban context in India, tampons is not very much popular in rural India. So, we just talk about only three products: capra, sanitary napkins and menstrual cups. We don't say "you will have to use a menstrual cup, you will have to use capra, you will have to use sanitary napkins". So, we are going ample amount of time, we are going ample amount of choices. Right to choice also should be there, right to information should be there, so it has to be on the basis of their choices when a woman uses cloth for example. So, there are so many problems. You will have to wash it, dispose of it safely, you know, children are also in your house. You will have to go through so many problems and you will have to spend money for it as well. But, if we talk about menstrual cups, there is nothing such, you can reuse it, you can, you don't need so many as well. So what we do is, it's based on your rapport building, it's based on your connectivity with the rural women or urban women who you are teaching, you're educating someone based on your trust they call someone they trust on because it's a very personal issue. It's a very sensitive issue. So, people used to assume it is made out of plastic, but it is made of medical grade silicone. It's very hard to talk about it in a community, in a group. Like if I'm talking with you personally about my periods it is okay. But if we are talking about it in a group in rural areas, it's more difficult. So first they felt shy but then on the same day, when I showed how it worked because luckily on that day I was menstruating, then they gain trust and confidence. Like if she can insert this inside her vagina, then we also can.

Alexandra: What are, according to you, the main barriers of adoption to the menstrual cup? What are, based on your experience, the things that restrain women from adopting them?

Preeti Jangra: From my experience, urban women are more worried about virginity. They are worried that the menstrual cup will make them lose their virginity. So, I have worked with both urban and rural women and what I have found is rural women are less concerned about their virginity, but urban women are more. And apart from this the main mental blockage is that it is made of plastic. And the second barrier is like "How are we going to exert it? Will it stay inside? And if it stays inside then what will happen with infections? Will it go upside? etc." And then there are groups of women who take extra attention at spreading rumors. Some women don't want others to use the cup so they try to deter others from using them. So you need to handle these situations accordingly. So there is a lot of social work, rapport building, your community mobilization, your trust, your attachment, your counseling process, your connectivity, proper communication should be there as well. So, yeah, the first month they encounter difficulties they say they cannot do it. Then the second month they call me to tell me that they cannot do it. We cannot do this because of leaking problems and actually it is because they are not inserting it properly.

Alexandra: Okay. So I was wondering whether infrastructures represent a barrier as well? For example schools which lack separate toilets or lavatories... Is that a barrier for them to adopt the menstrual cup?

Preeti Jangra: Not so much. Because, yeah, I accept the reality that in India toilets are not as accessible. But if you look at the past two decades, the number of toilets have been increasing. But I don't think that the menstrual cup is very much connected to toilets. If we talk about in the context of school the school timing is like five to six hours. Maybe menstrual cup and infrastructure is a little bit connected but not that much.

Alexandra: Okay I say this also because this is one of the barriers preventing me from using it. Because you don't want to go out of the toilet with your cup and rinse it in front of people. You know, it's still a bit of a taboo. So that's why I was wondering if it was the same in India. Another question I have is, according to you, what are the biggest gaps in menstrual health initiatives?

Preeti Jangra: The silence is a big gap. People don't want to talk about menstruation. Even the government is working on it, like taking some of the initiatives. But there is silence. That's why Lal Sakhi came up

Alexandra: I read that there was a governmental initiative in a municipality in Kerala where they donated 5000 cups. Do you think that donation is an effective way to increase the adoption of menstrual cups?

Preeti Jangra: So they have done this, but I don't think so. They have distributed it for free but I don't think that this model will work because, if you're getting good things for free you don't use them in a proper manner. But what we are doing is we are not going to give it free we are giving to rural women also in subsidizing like we are just taking 5% of the amount, at least 5% so that they have invested some amount of money. And for 400 cups, 20% money will come back and then we add more money. In that way they can feel that this money is their money, it is not the NGO's money, it is not funded by the government or any other agency. So, that connectivity should be there, otherwise the model will not work. If you are offering me anything free of cost, I will not be so convinced, but if I pay something then I have that connection that is different. That's why we are following this model.

Alexandra: And what do you think of the biodegradable sanitary pads? For example Saathi which is a company which produces them from banana agro waste and also bamboo fiber, do think that this is a good eco-friendly menstrual product?

Preeti Jangra: I think it is effective, it is eco friendly and it is effortless. So it depends on the efforts you want to put in to manage your menstruation. There are a number of people who are very lazy and they want spoon feeding. So, for those, I think bamboo sanitary napkins are a good option because for menstrual cup you know you will have to wash it properly you will have to sterilize it properly you will have to just keep it safe like right but for spoon feeders we can say that it is a good option.

Alexandra: Is Lal Saaki collaborating with other actors such as NGOs, governmental institution or the private sector?

Preeti Jangra: We are keen to collaborate but we have not collaborated yet because we are just two years old. So, we are having so many calls for collaboration, but we are just focusing on our model. First we can make our models so that we can do a proper study on that and design a proper course on that because acceptability, community, rapport building, and the principles of social work play a vital role in this process. So, like in urban areas, the information is not as correct either. They don't know how many minutes the sterilizing process has to last. So, first rapport building, second is brainstorming and then third is right information correct information. So these three gaps are there and we are trying to fill them as much as possible.

Alexandra: Okay, I understand. Do you have any other plans or initiatives that you want to launch with Lal Sakhi at the moment or are you focusing mostly on your current projects?

Preeti Jangra: Yeah. So, like you know, we have this project, project Dharti. And then we are also going to train rural women how they can just reduce the diapers use. It also takes like 500 to 800 years to decompose. So we are working on a program to support girls.

Alexandra: Okay, great. I think that was all the questions I had for the moment. But thank you so much for taking the time to meet with me. It's very nice.

Preeti Jangra: Okay. Sure. And one thing also, can you just share your abstract and concept not with us so that we can also get to know your research?

Alexandra: Yes sure, I will send you my thesis once I am done with it. And if I have any further question, can I send you an email?

Preeti Jangra: Yeah, sure. Anything we can check in. Okay, I agree. And anytime you can call me you can take my number and you can call me.

Appendix 6: Rajasi Kulkarni - Green the Red 25/06/21

Alexandra: Thank you so much for taking the time to meet with me so, maybe, to begin with, should maybe tell you a bit about my research. So my aim with my master thesis is to analyze how menstrual health in India could be improved with environmentally friendly menstrual products, and therefore I want to analyse some best practices to figure out how the access to these products can be extended and help improve the state of menstrual health in India. So from what I've read you are a menstrual health management educator, and you're also an activist, so to begin with, could you tell me a bit more about yourself and what you do?

Rajasi Kulkarni: So I would say that being a menstrual health educator is something that I do sometimes voluntary sometimes paid. And I've been associated with various organizations in the past. Since I've worked on several projects with them as a collaboration or something. And I've also been an active member of "Green the Red" community, through which was founded in 2016 and we officially launched our website in 17, but the group was formed in 60. So yeah, I've been working in this space for seven years. And my main focus lately has been working with people who we cannot access very easy, like, especially people in remote areas, people in tribal areas. That has been the focus of the past two years. And also, I'm more working with urban population than the rural and tribal people.

Alexandra: Okay. And so you're advocating for increasing the use of eco friendly menstrual product if I understood correctly?

Rajasi Kulkarni: Yes. So the sessions that I do are mostly general awareness about menstrual health, and then we introduce products as well. And in the products then we talk about all kinds of options, and including the reusable options. So we talk about what are the pros and cons of different products. And since I'm also someone who uses this reusable product, I also share my own experience, by talking.

Alexandra: Okay. And do you think there is one of these eco friendly options that is better than an other one?

Rajasi Kulkarni: I don't think that there is any comparison when it comes to the user products because again in reusable there is a variety of options like there are period panties then there are menstrual cups, then there are sponge, then there are this cloth pad. So I think one should have that agency to choose what suits best for them. That is what I try to do through the sessions. You should be able to make informed choice for yourself.

Alexandra: And is the government taking initiatives to push the adoption of more environmentally friendly options?

Rajasi Kulkarni: Oh, not government directly, but I would say in some places like in Kerala, some NGOs have taken the initiative to collaborate with government and then they pushed this idea that you know we should include Reusables in our MHM programs. So I would say it's not entirely common doing it, it's mostly in collaboration. And it's not like India has accepted Reusables as a part of the products like, the government has not put it out, anywhere. And then there are pockets of Maharashtra, pockets of Bihar, and even in Rajasthan where NGOs are working with the district administration or the gram panchayats to promote reusable products.

Alexandra: Okay. And I was wondering, do you think the private sector can expand the access to eco friendly products on their own or should they collaborate with the government or NGOs?

Rajasi Kulkarni: Private sector as in corporate you mean?

Alexandra: Yeah corporate companies that are producing eco-friendly products

Rajasi Kulkarni: So in India mostly people who are producing reusable products are not. I wouldn't say that they are companies, they're mostly these smaller organizations, most of them are not for profit sector. So the corporates collaborate with these organizations who produce it, and like as a part of their CSR activity so that's how they collaborate with these manufacturers and organizations working on sustainable options.

Alexandra: Okay, but you do have some companies doing it for profit, right? For example, I don't know if you've heard a company called Saathi which are doing biodegradable pads?

Rajasi Kulkarni: Yes, there are some, very few, very few.

Alexandra: Okay and the rest are NGOs producing them or are they importing them from abroad?

Rajasi Kulkarni: Um, so there are some which imports some materials some technology but I would not even say materials. I think Saathi? also import, to some extent, I guess. I'm not sure about Saathi, There is one brand called "Real relief", and their main organization is based somewhere abroad and then from there, they are importing few things, but the pads are manufactured here. With cups, you will find that a lot of international brands like the Chinese or even European brands and US brands, you will see that there are stockists in India who sell those cups.

Alexandra: Okay, but are there any Indian brands? Are some menstrual cups produced in India?

Rajasi Kulkarni: There are so many manufacturers in India right now. With the list that I collected last year of the manufacturers of cloth pads, cups and period panties that we found out like people were purely manufacturing are around 30 plus. And some of them are importing either directly the product, or some part I would say. So that's a very big number I feel like,

Alexandra: Yes, that's a lot. And also, how can for-profit companies selling eco-friendly menstrual products reach rural areas? Because it seems like they are mostly available online

Rajasi Kulkarni: So generally what manufacturers do is.. In India there is a very good network of Beauty clubs and client clubs and so on, so they are there. And also, there are people working in rural areas. So a lot of times the collaborative efforts happen, like, either the manufacturer gets in touch with these organizations. Different people get in touch with manufacturers that "we want to promote your product", "we want to distribute your products in inaccessible places",... So that's how that happens.

Alexandra: And is there some barriers, which prevents the adoption of eco friendly products according to you?

Rajasi Kulkarni: Oh, barriers I would say so. So you know the cloth is something that is still used in India. So even I used it as a teenager, and then I moved to disposables because I found it. But you know, going to college, different things wasn't possible. I could not change my cloths so I then opted for disposable option because then it was really convenient to use. If I had been introduced to reusable cloth pads, then I would have never changed to disposable options. So people are not aware of these options so that is something. So that's why people change to disposable options in India. So the barrier has been over the years that reusable options are not convenient, they're not comfortable. And advertisements have conveyed the message that cloth is dirty and that cloth cannot absorb more. So that's why reusable products have got shamed and that's why the comparison has been constant that disposables are better than reusables because infections bla bla bla. So of course, such things have happened and so now we are trying to help people realize it is not true, there are scientific studies, it is based on how you use it. Because we don't dry our underwear and our used cloth outside. That is why we can get exposed to infections, it's not because cloth is necessarily dirty or reusable products are dirty. That's why we are also trying to create awareness among doctors. In 2018 we launched this campaign on Green the Red doctry? Dot in? and through that we started to trained lots of doctors. We already have a doctor in our collective and she has been heading it. So what we did is we created awareness for doctors because doctors are the one who people listen to, and if they said if it comes from horse's mouth, then people will listen. So that's why we are creating awareness and now this year we saw that there was so many initiatives by doctors on world menstrual hygiene day where they spoke about reusable options.

Alexandra: Okay that's really great! And what would be the biggest barrier according to you? And are there others?

Rajasi Kulkarni: So, cloth is dirty, that is one thing. Another thing for menstrual cups is that it is something that has to be inserted. So again, virginity is something that is being considered, and not just in rural areas in urban areas also like people ask that, you know, "I will not introduce my 13 year old to cups because she is not married yet and she is not sexually active

so that is not good for her". So, like, even my friends who have teenage daughters they say similar things. Because of the concept of virginity. So that is one of the very big barrier, and I think that it is because we have never explored our own body and we have been never comfortable with our own bodies. So I think it stems from there and all the social structure it just supports that.

Alexandra: But how can you break that taboo for menstrual cups?

Rajasi Kulkarni: So we also share examples of people who have successfully switched to cups, irrespective of this, you know, myths, and beliefs. And we also talk about where exactly hymen is located, what is it what is its work. And you know what purpose it has, so we all discussed that in a very scientific way, and tell people that it really has a significant role. So when we share about it, it does help to some people but it's going to be a long fight.

Alexandra: Yes I can imagine. I saw that in Kerala, they donated 5000 cups. Do you think that donations are an efficient way to expand the access to eco friendly options?

Rajasi Kulkarni: Yeah. Okay. So, that is something we have been actively working on.

Alexandra: Okay. And are eco friendly options, affordable in rural areas for low income communities?

Rajasi Kulkarni: So affordability is a very relative concept I think these days. Because if we say that buying a pack of seven pads is for minimum 30 rupees in India. You spend that, and it's never enough, you will need at least 10 or 12 pads to manage your menstruation well. So we explain this math to people that you know 30 rupees per month, at least, and if you have like three women in your family or two women, the price is gonna go high. And so that is something. And when we explain that, once you switch to reusable products, you will see that you are spending like 200 rupees or 500 rupees or maybe 1000 rupees if you're buying a very nice cup for yourself, or if you're buying a set of cloth pads, which cost you like 800 rupees or something. So we tell them that you use them for, you know, two years, three years or if you buy a cup you use it for many many years. So like the cup that I use myself, it's manufactured in India. And I brought it seven years ago and I'm still using it. So I tell them that this is a big investment, and after that I have not been worried about menstrual products because I already have at home. So you tell the benefits in different ways, you explain the math to them, but we also tell them about the environmental cost. People think this is just me so how much waste I will create. So we tell them like if we collectively create how much waste we will create, and especially when it comes to rural areas we have to even more tell them because in a rural area, no one takes garbage. So it's either you know in your backyard or just outside the village. So, depending on context, we have to tell them, that product will fit or not fit into their context.

Alexandra: And are people in rural areas concerned about the environment in general ?

Rajasi Kulkarni: Yes, they are. They are not aware about how this is impacting the environment. So when they learn about it, they feel really bad. And there are some people who are very sensitive. A lot of times like especially tribals who will see they're very sensitive when it comes to pollution. Like, they may not know the word pollution, but they do know what pollution is exactly, so they do feel bad that plastic is seen everywhere, and they also feel bad when the animals choke on the pads, and plastic bags. So this is all very visible, and that has a very different impact.

Alexandra: Okay: And I read that one of the barriers to menstrual health is infrastructures because in some places they don't have separate toilets and laboratories and so on. Is that a barrier to using reusable products according to you? Because you need to wash them and have some privacy, I suppose.

Rajasi Kulkarni: So personally I feel that, to change anything you have to do privately, you need privacy, irrespective of whatever product you use. So I think it's not just about cups or cloth pad, it is also about generally having access to toilets. Sometimes I also feel that, this is something very personally I'm sharing, but we as urban people also enforce few things and we also sometimes are biased about what we watch, when we go to rural area. So since I also work on the research, I think that sometimes our views are biased. We go on the field with bias itself. We assume few things. So, I will not say that people have toilets, people do have toilets at certain places, but the concept of privacy is different. They may not have a "toilet toilet" structure. So that is something that is problematic, but a lot of times, there are makeshift toilets also. So like, even when I lived in the rural area myself, we used to access such toilets, but it was just a bamboo structure, the roof, there was no roof. So you use that to change your product or to pee. So such things are existing, or there are sometimes you will see that there is a square shape something, you will see a sari has been wrapped, and you can, go inside and maybe take a bath or something. So such structures do exist, but if you put them into "infrastructure infrastructure" they will not qualify in that.

Alexandra: But do they have access to water to clean their reusable pads and menstrual cup?

Rajasi Kulkarni: Yeah, so they have to carry water. Most of the times in such toilets, there is no water inside, there is rarely tap inside, so you have to carry a bucket, a tumbler or something to carry the water for your cleaning purpose. When it comes to cloth pads and also generally, a practice that we have seen in India, women generally wash their cloths at night. This is because at that time, the bathroom is also fine like no one else is going to use it. So they wash their menstrual cloth or change their products at that time is what we have seen.

Alexandra: Okay. and do you think that men should be involved in menstrual health issues.

Rajasi Kulkarni: Yes, yes. Yeah, yes, absolutely. Because then also, I'm not sure how it is in Belgium, but in India what I feel a lot of times, the toilets are never thought of thinking in mind that women will be using it. And it's the men who make decisions, how a woman storage will be. So a woman or a menstruator should be involved in deciding how it should be. So sensitizing them is very important and I think partnership of both, like, menstruators and non menstruators is important to create inclusive spaces. Because when you don't have running water, you have to first think if you have to carry your water inside the toilet. So this is something that is in rural areas, but in urban areas, most of the places we do have access but then, there is no place to keep your product, there's no platform or there's no washbasin or anything where you could possibly keep your cup or cloth pad or something while changing. So, or maybe a hook or something, if you have removed your pants and you want to just clean yourself and change your product. So, there is no such provision. And this is something that we as activists should actually promote about.

Alexandra: And are boys taught at school what menstruation is?

Rajasi Kulkarni: Oh, not much. Rarely, I would say. So past few years, it's been some people have started working. Some people were already working on it. Some NGOs have been working, but then it's not something that is regular I would say.

Alexandra: And then maybe one last question. I read that there are some decentralized production units which are run by women for women. What do you think of such business model? Do you think it's efficient?

Rajasi Kulkarni: Yes, yes. So even I've been working with certain organizations who do such kind of work. They do work, but the leadership needs to be really strong because these are small scale units. And if the leadership is not strong, then the issue will be that, you know, at some point, something will get stuck, and then nothing goes because it's decentralized thing. So you have to arrange materials you have to procure you have to keep track of things, etc. So though they're decentralized, they need equal attention, as you know, as the big companies and they will need,

Alexandra: So that when you say leadership you mean leadership from the people that are manufacturing the machine or within the women group?

Rajasi Kulkarni: Not so it works two ways I would say, not just the leadership of these women, but they also need to take initiative and do things, but also like they need to be empowered that they can do this on their own. I think there is some responsibility of these people who manufacture such machines that they should stay in touch with these women, because a lot of times what happens is they teach you for one or two days, and then they give you a stock of raw material that will suffice you for some x number of pads. Like this is talking about disposable ones, not so in reusable where some people work in similar fashion. But people who are supporting these women this groups, like whether you have given them a machine or if they have provided them with raw material. You know, there should be some more commitment than just giving it away. There should be monitoring, there should be evaluation of it that how it's going and whether they need some more help, if there are reports on it, etc. So, it's a continuous process, and it's a bigger commitment, but unfortunately in India, I have seen, I don't know about other countries, that people just give away something and then, you know, people don't care what happened next. So, yeah.

Alexandra: All right, I think that was all the questions I had. Thank you so much, it was really really insightful. So thank you for taking the time to interview with me.

Rajasi Kulkarni: Thank you. Will you share the report at the end?

Alexandra: Yes I can send you my master thesis once I am done.

Rajasi Kulkarni: Sure, sure. I would love to read your insights. Thank you so much. Have a nice day.

Appendix 7: Himanshi Narula - Uninhibited 03/07/21

Alexandra: All right. Um, thank you so much for taking the time to interview with me it's super nice. I hope you're well. And thank you so much. So maybe I'll just start with repeating my aim

with my master's thesis. So my aim is to analyze how menstrual health in India could be improved with environmentally friendly menstrual products, and therefore I want to have insights for many different types of actors in the menstrual health and hygiene sector. And so maybe to begin, could you explain who you are and what an inhibited does to improve menstrual health. Sure.

Himanshi Narula: So, um, I never did also started as a product, selling organization. When we started off. We thought that, just giving people sanitary disposable sanitary napkins would sort of solve the problem because we thought that this was the root of the issue. In India, at least. But then when we started working with the people on the ground. What we found out was that people who were using sanitary napkins were the same people who were taking the sanitary napkins from us, they were no new people who were sort of using the napkins, and then we went ahead in the community and we did the needs assessment we tried to talk to people and understand why they were not using. So big part of the problem was the stigma around menstruation as orderly process. So people just wouldn't talk to each other that they were having pages or if they were having any issues, mothers and daughters would have no conversations before their daughters would hit my knock, so like when their daughters would hit me knock it actually turned out to be a pretty traumatic experience for them. So there was a lot of silence and shame around menstruation like you cannot talk about it. In India, I think, as a country has a lot of traditions attached to menstruation, so a lot of people, especially in the country would practice exclusionary rituals like you had to stay out of the house for like five to six days while demonstrating you could attach anything, you had to eat a certain amount the food only, you can ask for more. So it really depends on the regions and the cultures and the country but there were a lot of exclusionary practices happening. So, what we understood was that we really need to address this silence that is there around menstruation and just working on products will not solve anything. Then we started hosting workshops around, okay what is menstruation, actually. So there's a huge perception that menstrual but just because it comes out of your genital area is impure. So, we also tried to address a lot of myths around those that your blood is not really impure it's just part of your body. And just because it comes out of your genital area doesn't make it everyone. So we started doing workshops, and then we started seeing a little change that people would then be more curious to understand, especially menstruate as they started expressing they started talking, They started sharing experiences, both good and bad thing since then we have moved to a completely behavioral change model than a product centric model. Because you also believe that that is a very myopic way of looking at menstrual health space. It is not about products, only it is so much of gender, there's so much about sexual reproductive health is so much about of discrimination. So all of these are very interlinked issues. So yeah I think right now what we do is we have a couple of programs but the basis of every program is how we can break this silence around menstruation. So, one of our key theories is that once we start talking about menstruation, we will be more aware of our needs, what are the problems, we will start seeking health care, we will start seeking more agency. So, just conversation becomes the starting point of a lot of impact that we look at in terms of like greater participation agency of menstruate is. So these are a couple of areas that we work with, and we don't only work with men's raters we, but we also work with men who do not experience a menstrual cycle. And we also experienced work with adolescent boys because now we've also understood that they are also part of the problem therefore they have to be part of the solution as well, especially I think, in the context like India where the family structure is very, very strict and hierarchy. Men usually hold power positions. So that's why I think we also work with them on the same things like, how can they build more empathetic and more conducive environment for man's Raiders, at home, and also

understand about their own bodies, their own sexual reproductive health. So, yeah, I think, in a nutshell, this is what we do at anonymity.

Alexandra: Okay, and how would you go about to raise awareness about menstrual health.

Himanshi Narula: Okay, so we have a couple of programs. One of our main programs is called period shallow so this is a community based intervention. So, we mostly work with low income under resourced communities. So we have our frontline workers. We have developed a curriculum on menstrual health and hygiene, and now also sexual and reproductive health. So it is like a four point module there are four sessions in this whole intervention. So they'll go into community they'll mobilize people, and then they'll have these four sessions with them. So this is the primary part of the intervention beyond that, we do follow ups, and our frontline workers always go to the communities. So there's the primary intervention, then we have a period fellowship through which we scale this community intervention so we work with different parts of India and we just replicate this module there. We have a helpline also, so we have a doctor and a psychologist on the helpline. So anybody who wants to access health care in a way, private anonymous setting. So it's a toll free number you can call the number and you'll get a call back. You can talk to our Certified Health line agents, you can talk to our doctors, it's all of this is free. So this is also how we work on the helpline itself there is a subscription piece. So, We have put a lot of our workshop content on that. So these are like one or two minute audios that you can subscribe to free subscription, and you will get probably two audios, a week which will be centered around information about menstrual health and hygiene how to identify infections, what to do about those infections, what is normal what is not normal, how to have conversations with people around periods of sexual reproductive health, how to allocate a budget for menstrual products. So there's a couple of things that we do within the helpline.

Alexandra: Okay. And do you talk about menstrual products during your awareness sessions.

Himanshi Narula: Yes. So when we were doing the community based intervention we should talk about four products. One was sanctuary dispose disposable sanitary napkins one was tampon. One was cloth bag, and when was menstrual cup. So, as an organization we are not inclined towards one product. So the way we look at products is because a lot of the people are not really able to make that choice depending on their context so we just go ahead and talk about the advantages disadvantages disposal mechanisms, about all these products, and we just leave them on the people, to make a choice according to their own context so we do like a mapping exercise you map your disposal system in your community you map the water system in your community, you map your financial situation you map the ease of using these products you know your body the best, so you understand which product you want to use. So based on a couple of factors, we just give the people the tools to make that choice. So a lot of people end up choosing cloth pads, A lot of people have switched to menstrual cups. A lot of people use tampons. A lot of people are comfortable with using pads. So there's also a stigma that is with using cloth versus are, because people think using pads, is the correct way and also using cloth is not really sanitary. Because earlier. In India, people used to use a lot of rags, old cloth, it's not really clean cloths for managing their menstrual flow also pads are not easily available in every area in the country. So that's why I think we also try to address the stigma that there's no shame in using any of the product, it's just your context that has to matter. And as long as you're able to maintain the hygiene while using all of these products, it does matter which one you use.

Alexandra: But then, you said you started with distributing products at the beginning. Do you still do that, do you pair it with the awareness or not anymore. Not anymore. Not anymore. and you think, because I see that a lot of like multinationals, distribute a lot of products. Do you think that's an efficient way to improve menstrual health.

Himanshi Narula: Um, I definitely think it's a valuable way to also look at the problem because this, there is a gap in accessing products and also awareness about the products like, even with bags we have heard so many stories from the community where people don't know how to use these products, and they end up using it like in a very different way than it is supposed to be. And then there's a lot of trauma attached to using those kinds of ways of using the products. So, I think, I do feel it's valuable thing to do that, just giving away products. We also partner with certain bad distributing interventions are just companies like we have partnered with Procter and Gamble, with their campaigns. So, there is value in awareness and just putting up these products, bridging the access gap. Having said that, I think we want to strongly believe that, unless there is enough conversations around these things. Just focusing on products will not solve the issue. Because I think just from experience, we have seen that, even if there is an adolescent girl who wants to use a pad. But she doesn't know whom to ask, like who can show her how to use a pad, and not everybody has access to YouTube videos or any other ways of getting this information and getting age appropriate and credible information. So, just the end up using it any way they can really manage. So, yeah, I think this is the way we can get unlimited.

Alexandra: Okay. And do you think that small scale enterprises could also help improve mental health.

Himanshi Narula: Definitely. I think small scale enterprises have really gone a long way in, not just bridging the gap in access but also starting conversations. Like in India, there was this one story that is very prevalent is this one man who started producing knives because he saw his wife having issues. So we have also seen a lot of small scale enterprises, just coming up and trying to address this issue about menstruation. So we do think that, that is definitely a space where impact can be created. As long as we're keeping the people who are going to be using the products in mind. So one issue that we've also seen is people end up creating products which are very relevant to the population. So as long as they are in touch with the people, and they're like, local organizations who know the communities better. I think it should be really okay that they're doing it, and we have seen impact happening, especially in local tribal areas where access to mainstream interventions is not really possible.

Alexandra: Okay. But then how do they reach rural areas because I, I feel like the access to like commercial menstrual product is not very high in rural areas, how can they reach them.

Himanshi Narula: So there is definitely this issue of quality, like mainstream menstrual products have a higher quality and the pads that are maybe produced locally in areas are not really. They cannot match the quality of say Johnson and Johnson or BMG, the passes that these companies produce. So I think there has to be some amount of collaboration between these two pieces also. Because I think in India, there are a lot of government schemes which gave out free products. It also goes and also to women, especially in areas where access is limited, but the adoption of those products is very less because people want quality and quality is achieved through less affordable products if I can say they are expensive. They are available in large medical shops. So I think there has to be some amount of collaboration. Maybe skill building of these small enterprises so that they can also produce and funding. So I think in

COVID we were able to see this happen a lot, because COVID really affected the menstrual health ecosystem quite severely. A lot of people actually came back and said they lost access to products, they lost access to health care during COVID, and it affected their menstrual health a lot. So I think the small scale enterprises, I think can really go a long way in creating that kind of a sustainable support system, especially in areas where access is limited but I think the larger corporations have to really step up and bridge this gap because they cannot do it themselves because funding is such an issue with small scale enterprises, yeah.

Alexandra: But could it be easier if they produce environmentally friendly options so like reusable products or menstrual cups and so on.

Himanshi Narula: Definitely, um, I think the only issue with these products is adoption so with menstrual cups or tampons or fashion products per se, like you have to put it in your vagina. There's a lot of shame attached to using these products because there's a virginity myth that if you insert something, you end up losing your virginity because there's a hymen and it requires that to be broken. So a lot of people don't use menstrual products and tampons because of that, even if they understand that it is environment friendly and also very cheap in the long run, especially menstrual cup because it can be used for like 10 years. So, I think it just has to be a very open conversations and people have to be given that choice. And I think a lot of the people in the low income communities don't really think of environment, because they always have to think about their economic situations first before they can think about the environment. So there's only so much budget that they can actually put towards certain products, especially I think in the communities that we've worked with we've understood that there is no separate budget allocation like usually women save whatever they can. They have to like cut expenses, and then save for, like, getting pads or any other menstrual need that they might have. So I think with products. It is definitely advisable that we use like sustainable reusable products. But that information, if we really want the communities to adopt this kind of practice, we will also need to understand the needs of the community, with lots. So even though cloth is reusable, in the communities that we work with nobody ever uses the cloth. So what they do is, once they've used the cloth, they'll burn it will not use it again, because they think it's dirty, so that's why there are so many myths surrounding products, their usage, the shame around it that I think we have to address. If we want to reach a point where we can say that people are making very conscious informed choices.

Alexandra: Alright, and what, what are their barriers to the adoption of these eco friendly options.

Himanshi Narula: Um, definitely. So, if you look at India, especially eco friendly options like reusable cloth pads or menstrual cups. They are the production is very less, because the demand for sanitary pads, and the production is so much more, and also the market for this is pretty privileged, so like, so many companies that produce these products, their price points are so much beyond the reach of the communities that we look at. So now what a lot of nonprofits have started doing is producing these locally. And they also give employment to the people from these communities they're producing their own cloth pad and just distributing it in their communities. So a big problem of this is about the narrative or the discourse around products. So the discourse around products affects the whole mindset of how people look at the products also and how they tend to adopt. so, like, in Prague popular media on so you'll always see advertisements of just pads. Like in India there is no advertisement about menstrual cup. There is no advertisement around cloth reusable cloth pads. So people just don't know that these options exist also. So whenever we have done workshops in

communities, people only know either cloths or sanitary napkins, they don't know about menstrual cup, they don't know about tampons. So whenever you tell them it's such a revelation for them okay this is also an option. Another point is that because these are not produced in a large number, they're also not available, like he remember metro cities I think if you look at it. Even tampons are not available in every medical store, You have to go to, like, huge supermarkets or like huge drugstores where these are available. So for local people, I think, in a district levels or at village level, just not there. So they feel like they'll have to travel so much just to get a product like that, or menstrual cups, there's online delivery but the delivery is not there in every part of the country. So, there are so many factors which affect this adoption of products.

Alexandra: Yeah, I can imagine this be hard to reach them, the rural areas, but do you see that there is like a push from the government to use more reusable options or eco friendly.

Himanshi Narula: Not really. So, in all of the government schemes also the focus has mostly been on disposable sanitary napkins, because I think the way the government approaches it is from a very hygiene perspective that you move away from cloth towards back. So, all the schemes or everything that they do. I think even with the relief measures that happened during COVID. The only place to focus on sanitary napkins, is also because the government still, I think, really doesn't know the piles of the people. When it comes to menstrual health because menstrual health is not looked at the focus area in India. So, there is no dedicated department with either healthcare or women and child to department that focuses mostly on menstruation. So now I think in the past five years, UNICEF, and the bigger organizations like water aid in India have really affected government policies, but I think we still have a long way to go, where the government itself, you know, starts campaigning for these environment friendly products.

Alexandra: All right. And do you think that multinationals will start producing reusable options or more environmentally friendly or.

Himanshi Narula: Definitely, I think, if you're able to create the demand for the products. We will definitely see that happening. We are seeing some of it happening through like mid level companies now that they are putting cloth pads or menstrual cup at the forefront. But most of the bigger corporations who like colds and 80% of the market, they are still very focused on disposable sanitary napkins. So I think for them also. I think they also need to understand the interventions that work in these spaces. So if there is this shared learning that happens, they are also able to understand the what is the issue and what are the opportunities in these spaces. I think once we have this kind of a situation. I do feel that the companies will start focusing on environmentally friendly products, it's still happening in the privileged section of the society, like now we have seen this wave of moving away from like plastic based products and just moving to more sustainable reusable products, but it is still a very privileged section of the society, because their needs are very different than the needs of the community. So I think if you want to really affect the rural, low income marginalized communities. I don't think there is a lot of opportunity there just needs to be tapped into.

Alexandra: Yeah, and to be tapped into. According to and inhabited you need to link it with awareness. Yeah, definitely. And I'm just checking my other questions. Yeah. And do you think that this small scale should also work with awareness.

Himanshi Narula: Definitely. I think from my past experience we have understood that small scale organizations, II, especially they're based locally. They can create a lot of impact,

because they become the influences. So a lot of our impact has also been achieved because a lot of our frontline staff is from the community. So we recruit people from the community because they understand the coordinates better and also people like to listen to them because they, they have a shared experience with them. So we sort of become the third party or the outsider. So things that we are not able to influence, it's always the people who have experienced the same issues, they are able to influence. So in awareness we, our partner organizations who are all these days, locally, they have helped a lot in spreading the word about an awful lot of the programs that we do.

Alexandra: So you, you, your frontline workers, like the influencer, how does that part work, how do you recruit people to influence.

Himanshi Narula: So, what we really do is when we map communities to have maybe also map influencers in the community. So community, sometimes they can be people who hold certain positions in the community, just by virtue of their experience or things they have done for the community, sometimes there are other NGOs who work in the community, and then workers are stationed there. So, when we try recruitment practices we always look for people in the community who can work with us and who also stay there. So, this is how we actually recruit. So first we understand the community managers understand who are the influencers in the community, or can be really source people from the partner organizations. So it's very rare that we recruit people who have like a lot of gap in the contextual understanding of. So, most of like, I can say 95% of our frontline staff is from the communities and they share similar context.

Alexandra: Okay, that's, that's interesting. And then the last question. And using that there is among the eco friendly menstrual products do you is there one option which is better, according to you to meet in India or.

Himanshi Narula: I think there is no option which is better per se but I think if I can speak from a very contextual understanding of the space. I feel with the products which are insertion products. We usually have to be very cautious when we also talk about these products because there is a whole cultural context to these products. And I think there's a lot of gender that comes into play. Whenever we think about introducing people to anything like a menstrual cup. Sometimes they will be objection from the family, towards using a product like this, because it's just the idea of, you know, inserting something in your body is too unfamiliar. In that sense, if you compare it to a reusable cloth, because people have always used it, and then they had to switch to sanitary napkins. I feel like this is like an easier way to introduce environmentally friendly products, we can definitely move towards menstrual cups. Also, but I feel if you compare these two, there will be less challenges, if we start off with reusable cloth. Okay,

Alexandra: Great. I think that was all the questions I had for the moment. Thank you so much for all the insights, super interesting. Thank you so much. No, I think you're really it was, it was great talking a little bit more about how you improve mental health. If I have any further question Is it okay for you if I send you an email. Yeah, sure. Okay. Right. Yeah, and I can send you my, my research once I'm done. Next, I would love to. Okay, thank you so much. Okay, all the best for research. Thank you. Have a nice night. Bye

Appendix 8: Mayuri Battacharjee – MHH 03/07/21

Alexandra: I'll start the recording then. And just to make sure you say you are working for splash but you prefer that I don't mention them.

Mayuri Battacharjee: Yeah, yeah, exactly, I would like to be because I work all semester, apart from splash. I have been working on nice to help before splash so I think I can just call me like a menstrual health practitioner or an actor or something, whatever. Yeah.

Alexandra: Okay, perfect, no problem. Um, so as I mentioned, my aim with my master's thesis is to analyze how menstrual health in India could be improved with environmentally friendly menstrual products. Okay, and so maybe to begin, could you tell me a bit about your experience as a menstrual health practitioner.

Mayuri Battacharjee: So you want me to talk about the education or menstrual health, including everything I mean, think about products and infrastructure, that kind of thing. Would you like to hear,

Alexandra: Maybe about the products and infrastructure and so on like what you have done so far, related to menstrual health.

Mayuri Battacharjee: Okay, so your thesis is on products, right, because I want to know that, yeah,

Alexandra: Yeah lots about products and see how, how the eco friendly options can be adopted in, in India, if any, this could help improve menstrual health.

Mayuri Battacharjee: Yeah, so the thing is that when it comes to products there is wide. Lay misquoted statistics which say and it goes around and goes around flying around which says only 12% of women in India, use a hygienic method it is used in various even by, you know people who have been working in the menstrual health sector they have coded this statistic but this is I feel it's a wrong assumption because it was based on a data which was not. I feel. I mean, you cannot really, there's something called Zombie statistics because you don't know that. What is the original source and what was the how the data was collected, but this data goes around for years so the trap person data I think it's, it's not wrong. I would rather depend on National Family Health Survey data which says that more than 65% or I don't remember. Right now the correct statistic of this year's survey but it says a quite like nearly 70% of women are using sanitary napkins, I mean, and I feel that and from my experience of working in rural and also urban areas, I would say that products have become aspirations. A lot of women are able to buy sanitary napkins and also being due to recent movies or popular culture which are highlighting Bad's or, you know you've heard of the movie called Batman is a very, very famous actor. So there has been a push on, on sanitary pads so, and apart from the big brands, they're also locally manufactured products which out. So it's not that it is out of reach, or something, I would say that more than the product use more than fancy buys being accessible or not or expensive and what is the problem is right now I think COVID Facing the Challenge. This poses, mostly in urban areas, but from my experience, I've seen that girls want to use pads because they have seen the ads in TVs and they aspire for it. They think that that is the right way and and ads have, you know, demonized, cloth, because they have said that okay it's a it's a dirty thing move to sanitary pads, you know your status will be higher, that kind of a thing which is a kind of a harmful Narrator why because cloth, the narrative should do the right narrative should be is any kind of product can be harmful to your health. If you do not use it. Same with cycling if you're going to overuse a band not change it after you know for you know,

four or five hours like we say four to six hours, it becomes also unhygienic, so it's not about how you're using cloth or, you know. So, I believe personally on informed consent, you know informed choice that a woman should be educated on products whenever we are doing sessions, so it might, in the past experience and even currently we do and we follow the philosophy of informed choice rather than pushing one product as you know, the one. Unfortunately, and so government programs such as sanitary napkins which are being pushed, and it is also the easiest also because you have ads doing the work of, you know the advertising, and that amount of advertising does not go into eco friendly options are talking about cloth pads or menstrual cups. These options so definitely I say that India is a great fit for us. I feel bad right now I think wherever is doing business and make money, they will make good money here, but I feel that we have to somewhere. Talk about eco friendly options and governments have to state governments or some state governments, if I remember correctly I think Kerala, they have to remember the city. They had this wooden menstrual cups in the city of protesting in Kerala, that there are a couple of states which recognize the value of eco friendly products but most of them. It's just push on saggy pants. No, I, I think that that needs to, we need to rethink on that because environment is also a factor.

Alexandra: Yeah. And so how, how do you do you raise awareness about that, Are there things that are already being done.

Mayuri Battacharjee: There are a lot of correlations between the red, or these kind of organizations which are in environmental advocacy they are trying to raise awareness on eco friendly options, and they have been doing sessions, that there is a strong movement for that I would say that there is on social media. There are various Facebook groups and also green, the red or the winner is one coalition that I know I'm sure there must be others that I don't know, right now, but they have been doing sessions and villages and they're quite strong in certain parts of India. So, what I have done in the past and right now what I do is always been presenting a basket of options. I know that there are barriers to equal funding cut back on this perhaps being conducted. So I personally feel that it should be other user should be at the forefront, the domestic rater should be at the forefront of any kind of product dimension so quite often we just been seeing that women are interested, a woman. I've seen me 10 years back and when I showed them our purpose and they were quite interested in one of them had a smartphone and she had internet connection and she quickly, did the YouTube search and she found the video it was in Spanish and she said, I don't understand the language, and it was quite interesting that if you talk to them about other products. some women can, you know, will do their research project right to find out more about it. We spoke about the economic aspects that this will go on for a company lasted for more than five years and the environment by the disposal for the disposal is not a problem and I just thought about the team that that beauty just cleaned it up properly. So they were quite interested, and we saw this mostly in women who were mothers and who had been sexually active. But of course, when, when you talk to young girls who are not married or not, who have not had any kind of sexual activity they find it a bit scary when said something like that. But prospects. There is an acceptance but again I say these like on Qatar Bombay in slums, it becomes difficult to manage backpacks because you don't have the space to try out properly, especially in India we have got both dry weather and humid I live in a very humid part of India where we have closed stick time to dry. So, and that is why, if you want to advocate for trackpads and some simple cabinet say. First, it's going to be difficult for them to wash it in community toilets. And because quite often have drains which, you know, if you are outside you can see that the blood coming out or something so they have this hesitation. And where will they dry out, because there's no space to dry. Right, so it becomes difficult but I know that there are organizations, which say that in some

ways it has not been a challenge but from what I have heard, then women artists tend to use it and they find a place to be really in a city, they find it really easy because they just have to wrap it and throw it in the nearby, miss. A Dustin, so yeah I say hi, we'll use that we have been trying so I personally believe it should be the user should be at the forefront and we should give all the information, and about every startup that is out there and I do feel that with current interventions if there's also progress from dotnet, or let's see bigger companies are also getting into the perception for change and let's see more people attempting this product.

Alexandra: And what do you think is like multinationals or like Procter and Gamble and so on they, they're willing to sanitary pads do you think they will develop reusable options and eco friendly options in the future or.

Mayuri Battacharjee: I'm not sure about the reusable pads option but I remembered it. I think always someone had to develop it. Okay, I don't remember where it started, but it's not fun in India, I saw it in some state in the US or somewhere but it was some multinational company but I don't think they push that product. So, yeah, I mean, I don't remember, I but I do remember it was some multinational but it's, I don't think it's available in India so I'm not sure what multinationals doing it because they have a very good business case and the market is great and part of this accepted, and there's so many women right now who are using their product so it's quite, maybe they will shift to eco friendly side disposable napkins or use biodegradable materials are less plastic or less of those chemicals are have have like cannabis high under this high end luxury sanitary pads which are available in India which tend to be biodegradable but I think green direct did a kind of a study and be used on these pads and they found that they were not willing to have rescues of plastic, when they were trying to compost it at home but. So yeah, I'm not sure we're currencies, entering the menstrual cup or accidental, but the thing is, because we have successfully, kind of, you know stigmatized cloth is something that is not good or unclean, it was I don't think much national surveys are taking that up I feel right now, maybe future it will change but right now, the way we have, they have gone about it. Is it difficult for them to do it.

Alexandra: Okay. And do you think that small scale enterprises can can be a solution to, to improve menstrual health through eco friendly products.

Mayuri Battacharjee: There are some organizations in India, I'm sure you've done as part of your research examples of sexy were who were being the pioneers in making cloth pads in India, and having the designs are really out there and they're, they're the sort of source fads and center there are a lot of these markets but I know that Uber has done good business in rural areas wherever they were, but because they combine their product interventions and education and also other interventions, it's not just the products. I know that there's, there was a company called shamoto when maybe you might have found them because they were based in Kolkata. And it was run by I think. Yeah, it was run by an American entrepreneur who had settled in India, so but they shut down business recently because they were not making enough money for it, so maybe if you have not interviewed with, I think Megan. Megan, so maybe Maureen, I'm not sure whether she will get the interview but it'd be good to ask her that why the business did not was not sustainable because she had involved that remember she didn't want the community to make that it was a new generation project and they were doing a lot of educational activities. They also had a website and I will say use that product is pretty good, but they have to shut down the business because it was not working out so yeah so there are these things I know that people there are some people, you know the disposable pads or they

call it the biodegradable disposable pads and also have. They also sell backpacks to sustain themselves so it's quite definitely, I knew that people were already promoting friendly options,

Alexandra: but for them to be a viable solution they have to, to pair it with awareness, and such things.

Mayuri Battacharjee: Yeah, exactly. And that's what I've seen like the top companies, because they're very famous and that are so strong they combine, they do have the next business I guess they combine awareness generation or have they offer workshops on sexual sexual and reproductive health. So it's not just their promoting that alone. We are also runs, other programs towards, You know, push their cups in various programs so yeah I can imagine it's quite challenging for hairs right now who are making cups and stuff that didn't get right to market it in India right now. And, and is it, how can they market it in rural areas because they are like the distribution is quite hard I can, I suppose. Yeah. Yeah, because when I was living in rural areas I was approached by people who were making their product and they were selling it, they were saying it was such a down by 30%. You know, we can have this, they have this programs where you know, if a person in urban areas who can afford the product, they buy one, then they donate another cup to someone who cannot afford it so they had this together cropped up programs and donated programs. I think this is a model which is supported by a couple of other organizations that you buy a product. Let's say you can afford it and it goes to someone who is underprivileged woman so they've been trying to find out that they are trying to get some CSI brands. And, but the bulk of the time that they want to charge at least a nominal 15 rupees or 100 rupees from from ministry, just because they see that it could ensure accountability or ensure that they use it because if you give them for free, people will take it for free but you can use it or not, and they wanted that okay when we sell this to you, to any woman at a reduced rate we would like to talk to you after a few months about your experience because it'll help them find a program so they have been trying other ways that they have. One thing I must say that Lucas has sustained. All these years, they must be doing something right in their business that they have sustaining, despite being like, despite India being quite tough for them. Yeah, cups.

Alexandra: Yeah, it must be it must be quite tough. And I'm taking my questions. And what, what is according to you the most efficient way to break the taboo related to mental health.

Mayuri Battacharjee: I received the first education does a lot of education and the dream is to happiness with health, or a comprehensive sexuality education program in schools, but the state governments or education departments quite often. Don't do that. Because it's there are taboos related to it and also it means giving extra time to a subject so they don't suppose quite often struggle with getting this time to talk about menstruation or a complete comprehensive sexual sexuality education program so my dad is one way to have these programs in schools, and having more awareness sessions, involving everyone, loving human people like religious faith leaders who are actually the people who tell women that you are in your during menstruation. So if you can get some spiritual thinking this film knows that okay. It's not okay. And if you're, if it happens, it's a dream to start doing that because quite often it's the religious leaders who oppose this step also, I mean I think you've heard about the sub Ramallah case in India so there was religion versus the rise of the ministry woman so I feel that, apart from the traditional ways of spreading awareness, they should, we should be reaching out to people, and we're in terms of media, they're doing that by they're doing a lot but I really feel that it's time to engage in religious thinkers, as in the community about constriction debatable.

Alexandra: Yeah, okay. And also I read that there are some decentralized production teams which are employing women, women who are pretty synthetic removing like the bad man. Business model do you think that's a business model which could help improve mental health.

Mayuri Battacharjee: It is a great livelihood option. It's a good program. It's a good business. By the thing has mentioned that it's not just about products and when we focus on only this class and do not take appropriate education programs, then it becomes a big challenge so I know that a lot of organizations, which mean the least sell the lights to make speeches. They don't do a great job at education awareness they have a very basic module and they will go to a community say okay this is what you do this, I mean this is what my spiritual is not by the spec. But I think should be more than that. So that needs to change. I mean, I understand that of course in a business you need to raise business you need to sell your products but then you're only focusing on the products because there's also toilet infrastructure was things I mean, it's a lot of hard work and I really feel that same products is actually, it's hard, of course, but it's the easiest part of the mental health, because it's easier to build this and get get funding for four units per month, so you can do that. But again, I know that there are a lot of there are these groups, certain groups who have brought in this band who were bad making machines, but they do not have did not know how to market their products because and then they have to compete with the supply chain of people like p&g and Unilever, and it becomes difficult for them because you have to compete with companies which are doing great advertisement. So, how do you, because what is manufactured in these more units is can never imagined packaging with the International packaging, and people would think okay this is an inferior product so that is something that they also face and I am not so sure how, how to deal with that, I mean, to be honest. And, but they are sustaining I know people who are sustaining with their brands local brands, because there is still a market but I think multinationals are also improving their supply chains and they're also, they understand that it is a product that people can afford and they want so they will also make inroads in places that were not cheap, so I'm just thinking that what how would these small scale units, compete. I know that this but doesn't want to compete with them. Maybe they just leave it open their business, the way it is. But again, it will be difficult, I guess, to which cases are reached by.

Alexandra: Yeah. Yeah, that must be really hard because I wonder how the small scale enterprises can reach the same distribution level as as MC ends. So that seems to be a very big change. But so for you. The product is the easy easy option. But what are the key aspects of menstrual health, that should be worked on. Other than products.

Mayuri Battacharjee: Addressing the stigma, addressing the lack of education on unnecessary health in general or section, sexual and reproductive health, and also infrastructure. Toilets toilets. And now I would say that that's becoming a popular options challenge that you have is this. That's something that CPAs in India haven't figured it out that how to correctly dispose this century sanitary pads which are used, and there are some cities in India which are during segregation, but the rest of the cities don't have that waste, segregation is anyway a problem. Metro waste, segregation is a fact.

Alexandra: Yeah, yeah, it must be super hard to, to handle with such many like women in India, a lot of waste. And then, I was wondering how many like you should like menstrual health initiatives, involve men as well, to break the stigma

Mayuri Battacharjee: should involve men, and there are programs, I believe, which are there in India which have done it, but there is if you want to do it in a community it's fine but if you

want to do if you want to do it in a school, it becomes a challenge is parents they object to it, that could be wire, wire, my first learning about this the boys and the boys. So there are these mental topics, involving boys in these programs and interestingly, A couple of years back I think I was doing a session for boys and the NSM imperfecta. And we're really talking about Miss beforehand, and we're talking about how it was how they saw everyone's needs and academically done there were a couple of boys who came to me and said that, okay, all of you NGO says come and talk to us about pays me comes and talks to us about our bodies, I want to know what happens to me, and nobody none of us really progress for voice, There is a lack of sexual reproductive and progress the boys need to get involved, or we feel that they'll just manage on their own or not in both men and now in a healthy way. So, they want to know is that because they're curious, they're going to give it and they would be interested to know. Come on, we should also speak to them about their body as well. Yeah, but that that is something that I have heard of programs that involve men in menstruation, but I have my doubts that how interested would be medically to not talk to them about their bodies, I mean, I would put myself in that place and think that if in a class, someone would just come and talk to me about me reproductive health and not really talk to me about my female reproductive health because I'm a female. I wouldn't, I would not be interested after one part of that so it has to include both, and it will be really great to involve men into, of course, but don't have to dress separately.

Alexandra: Yeah. All right, I think I've covered all of my questions. Oh, Thank you super super much for the interview. Yes, I had a lot of nice insights. So, it's very nice. Are you recording the meeting I Nazis everybody. Oh, yes I did with my phone because I don't have space on my computer so

Mayuri Battacharjee: yeah okay. All right. All right. All right. Okay, I hope, who you are when are you supposed to submit get this

Alexandra: have to submit it on the 25th to my supervisor but officially to the university on the 10th of August. So quite soon. Alright, and then I'm done. Yeah, Lester. Thank you. Thank you very much. Okay. Okay. Take care. Take care. Bye.

Appendix 9: Richa Malik - The Happy Turtle 01/07/21

Alexandra: All right. But thank you so much for taking the time to meet with me it's really really nice. So my aim with my master thesis, as I told you is to analyze how menstrual health in India can be improved with environmentally friendly products. And so from what I've read, you were working in FMCG and then you moved for to like slow consumerism and you started the happy turtle can you tell me a bit more about your journey.

Richa Malik: So there was a little bit of a gap of diving instructor in between, which was what has been assessed to us so consumerism, but as pretty much the same, I did. I'm an engineer turned NBA and I did work in FMCG for about six years, a little over six years with the same giants that we all now blame for plastic pollution, Procter and Gamble and Unilever, and sadly I didn't care as much about the plastic pollution that we were causing at the time of selling those plans, but I decided to take a career break and I relocated to Indonesia in. 2016. Yeah, she's having 65 years ago now. And while working with Indonesia I'm sure you've come across that in your research side in terms of marine plastic pollution and it's one of the top few countries, and that's not really surprising when you go diving there as well because you end

up finding a lot of bits of marine plastic pollution lots of packaging underwater. So it started with chasing one turtle away from a plastic bag but then beach cleanups day cleanups and so on and so forth. You keep realizing that every week you just picking up more trash and it's not, it's not ending it's like a never ending cycle right. And then we started finding a lot of packaging of the brands that I used to say, so it's pretty much karma come around full circle. So I figured that, and there's not many people who died is about what six 7 million people who die around the world. So I thought, let me put my MBA design better use versus selling plastic, so I decided to stop diving came back to India and that's when I started to happy. That's why it's called the happy turtle as well, because he will decide I figure turtles are happier without plastic. So that's the story of the heavy turtle the aim that I started the happy doddle with was to focus on the consumption part, because I was personally also very sick of just picking up more and more trash, and I realized that at the time we don't stop all this wasteful consumption, we're just going to be cleaning up stuff and there's no end to it. So that's where the concept of the plastic footprint calculator came in and that's why, almost all of our products are reusable alternatives to plastic instead of being a single use product made out of something, claiming to be eco friendly or so and so forth. Within attention to the LCA impact as well so all the products are made in India they made a lot of them are made by artisans by hand so that there's less machinery involved. We use sand drying methods instead of artificial drying methods to avoid using heat and artificial electric and electricity for those artificial heating machines etc. And basically that's the level of attention to detail the menstruation part, the menstrual products part was something it was more of a project that I had been working on for about two years in the happy Reuter before we launched our products, and the intent was again the same that a lot of women in India especially, are not used to searching for menstrual cup, and they're not comfortable with the idea of a menstrual cup. So there needs to be an alternative for them, which is easier for them to use, which doesn't cause them, the embarrassment of, you know, how menstruation is basically still a taboo in India. So it doesn't cause them the embarrassment of drying a product that looks like a sand nap on the same dry line that they will dry clothes on and so on and so forth. So that, so a lot of, I would say, I wouldn't call it research as such because we don't really have that much money to spend on and correct research but a lot of information gathering pressure was there to understand how we can go about addressing the same issue that you're working on your thesis.

Alexandra: Okay great, and I read in the in the article as I as I told you that you said that by degradable and degradable pads are often like greenwashing in India, can you elaborate on that.

Richa Malik: Um, so there's, I don't think a lot of these pads are available outside India which is a good thing. But sadly in India, there's a lot of bioplastics these pads that are now that have now come about. So what these pads claim to do is that they're saying that we're using. Banana fiber or bamboo fiber etc. But that's not the only thing that they're using, because the top sheet is still a bio plastic sheet the waterproof sheet at the bottom, that's either pluck your plastics or that's bio plastics again. And in India, there's actually a lot to also provide a wrapping sheet with a sanitary napkin napkin so they have to put a, you know, plastic wrap around it that anybody, while they're on the move, they can wrap up the sanitary napkin and that and discard it. So the intent was poses less of a hazard for the waste collector. But even though sleeves are made out of either to classics or bio plastics. So these products are not really plastic free waste collection in India is not so, sorted that you know that you can get that you can rest assured that all of these bio plastics pads are not getting this Carter with normal plastic bags. They will, because even if you imagine, even if you imagine the best corporate offices in India, right, and if somebody has switched to these bio plastic bags. She will also discard the same

pad in the same receptacle that somebody else's discarding a plastic bag. So at the end of the day it's not reaching the intended end of life scenario where you want it to reach an industrial composting facility that's not happening. And it's not, and if it doesn't reach an industrial composting scenario it's going to land up in a landfill where it's going to end up releasing more methane and then, then your normal plastics as well. And it poses the same health hazards, etc. I have not found TSS studies on bioplastic related pads I don't know if they exist, I don't know if they've gone through the level of studies that pads like whisper or, which is basically the name for always in India or Stayfree etc have gone through and having worked in those companies I know the standards that those pads have gone through, and you can't find those standards for these plastic bags, so you don't know if they're good for health if they're bad for health if there's kind of a reaction bioplastics in itself is a nascent technology right and people don't know, people don't even know what the product leads when you're eating food out of it. And here people are promoting using it as a sanitary napkin or as a tampon. So it's a lot of that's where the green washing comes in and they charge about two to 2.5 times a premium for these problems. Yeah, which anyway makes it unaffordable for the, for the administrator was anyway not getting pads that isn't expensive.

Alexandra: Okay. And do you know if there's any like 100% compostable beds out there in India.

Richa Malik: The ones that claim to be 100% compostable are Sati and I think one more sparkle, maybe spark yeah sparkle I think

Alexandra: That's a car innovation as well like the NN D pads are they compostable and the pads on the banana fiber ones right. I don't think so I think it's a wood bolt.

Richa Malik: Oh, no, I don't remember problem so we usually look at the brand names when, which some of our followers centers that have come across this product is eco friendly etc and then we look it up and then I end up finding the same bioplastics, etc. Yeah. It's the same issue.

Alexandra: Yeah. Um, and so you said that with a happy turtle you you commercialize products is that it. Yeah,

Richa Malik: So we have, we have products and we have consulting the footprint calculators for free that's not commercialized at all. And that's basically the starting point but the products yes they're sold online, though, when it comes to the sanitary napkins, we have a campaign that we started which is called Summon, which basically means just like in Hindi, where the idea is that when people are shopping online, they can basically add a salmon kit which kind of becomes like their donation. And what we do is, with a donated kit, we ship it to our implementation partner in Bihar, Bihar is one of the states in India with the lowest penetration for sanitary napkins, we send it to them, and they distributed once a month to one of the villages that they have picked out or that their work that they worked in, and these are reusable menstrual kit so they're made out of God, a certified organic, but then there's a separate waterproof sleeve. The kits are very easy to wash they don't look like a sanitary napkin when they're on the dry line. And you can very easily see how clean the pad has become on all sides because a foldable pad so it's not a it's not a bad with layers so you can see the analysts, it's a foldable patch so you can unfold it and you can see how clean it's become and put it on the timeline and it looks like a handkerchief instead of looking like a temporary napkins, it takes away the embarrassment for the women washing it as well. And they don't have to pay for it. So for them it becomes a cost saving because a lot of these women, a lot of the households

in poorer states of India are living on a tight monthly budget. So when they do have device and sanctioned access they don't have a lot of money for it and the more administrators, they have in the house, the more of budget it is for them. So, what they end up doing is they end up buying the cheapest product, they end up finding which is not at all an eco friendly one. And most of the times it ends up being a not very thoroughly tested product they will not buy a whisperers or a safety, those products are expensive, they would end up buying a local brand, which is where you don't know if it's been tested where you don't know what is the TSL stress, you don't know what is the hygiene level maintain at the factories, etc. But that's what they can afford so they end up buying that. So with the free kids at least helps them that for the next few years, they're not spending money on buying, you know, sanitary napkins for the household. What also helps, is that what we realized with our drives is that a lot of women were using cloth pads earlier. So they would make your pads at home out of oil saris and all sorts of cetera. But they switched to the plastic ones because they would be these campaigns in the villages where people would come in and tell them all the cloth pad is not good and it's not time for you for you want to start hygiene for you. Here he was this last couple, they will give them one or two packs for free, but then after, after two months they end up, they have to buy that pattern because they've been drilled that fear into their head that no it's not good for you to use cloth and it's not good for you to use a reusable product, etc. So, we've seen those challenges come up. Because, and they used to use clubs, so which is very surprising for us so it's easy for them to adopt it around the kit, when we give it to them because they tell us we are very used to using cloth and washing it etc. It's obviously superior to the class products that they were using because we do provide a waterproof sleeve separately so they don't have to worry about leakages and stuff. But the surprising bit is the amount of misconceptions that are drilled down into their head around a reusable is not good and oh no you should use our plastic products etc. They don't even know about biodegradable pads, at least in the villages and stuff. They're not heard of it. Most of the biodegradable pads right now are selling online in India, and most of them don't have certifications. Even if you look for 1708 or even look for even like even if you refer vingcard Okay compost etc you will find that none of them have standards. Yeah, those are preconditions for the standard so.

Alexandra: Okay, literally. And then I think like the sanitary pad companies they, they try to make them switch to like plastic based sanitary pads because of hygiene. So do you also raise awareness about how, like, you should wash the cloth is like property.

Richa Malik: Yeah, so when the being distributed the kid. The implementation partner that it's a small youth led organization called Allah, they actually do a proper workshop so there's also a booklet of sauce and instruction booklet with the kit. But even in spite of that booklet and the booklet that has like pictures and stuff in it instead of a lot of text because a lot of these women country, but they do explain everything that okay so you wash it, you have to soak it right after you change it and then they show them how you can wash it etc. Before handing them the kit, and we do take their name and number down and stuff so if they have any questions and then there's a follow up etc so we can answer that.

Alexandra: Okay, nice. And how, with which products you are the, the reusable sanitary pads made of the ones that you make.

Richa Malik: Um, so the, the foldable pad so there's two parts to the pads, one is the foldable pad which is separate. Actually, just give me a second I'll just go and get the product and then it's easier for me. Okay, nice.

Alexandra: Sorry I'm being a very lazy person today and working from my bed as well.

Richa Malik: So this is the plan basically which unfolds into literally like a cloth sword. This is made out of God, certified organic cotton, and we sourced the material from a person who provides us with the certificate, so that if, you know, just in case we need to provide a certificate anywhere that's available as well. So, the way the pad works is that you just fold it up. And then it has these two wings that you can then use to clip it on. There is a separate waterproof sleeve, so this is basically made out of scrap cloth. That is basically cut applaud that. That's that the women at the SMG get from tailors and from factories that make clothes etc. The cloth is cotton, but inside this the sleeve. There's a third layer inside which is a PDU layer. So, which provides the waterproof part, that this is the only plastic in the entire part but there is no contact with this actual plastic, and when, when somebody's just starting the pirates usually the sleeve gets worn out, so you can easily get the plastic layer out, and it's just it's just not glued on, so it's easy to recycle the cloth separately and up to layer separate the pad has the sleeve has these holdings, books, I would say whenever you want to call it. The idea is that this becomes your waterproof by the pad the folded pad, then you just tuck it into the sleeves

Richa Malik: To get you basically tuck the folded pad into this leads. And this becomes your overall sanitary napkin. Okay. Yeah, that's very ingenious. And this you put onto your underwear and then you can clip it so there's those are like similar to like how you wear a bra there's like, adjustable buttons available with some women they might want to close it a little bit loose with some women they might want to close it a little bit tighter. So we provided two depths of the buttons and with which you can adjust.

Alexandra: Okay, nice. And is it comfortable to use. Yeah,

Richa Malik: So we've gotten it tested for about two or three cycles before we launched it by a few consumers, and they found it more comfortable than the other parts because I don't know if this is clear in the, this is kind of like a cotton fleece. Oh yeah, it's not rough cotton it's basically that soft cotton face, so it feels very soft when you're wearing it. And then when you change the tide the only part that you actually have to change is the pack, you don't have to change the waterproof sleeve every time. And you basically put this pack in cold water for something and then you wear the next one. Okay, on the same theme, and they provide them with. So there are three sizes that we have, we provide them with four of the medium ones, the pads, and we provide them two of the large ones which are more for the night and for heavier days, etc. And we provide them, I think three seeds or two of the medium sleeves. These are slightly smaller. one of the lots. Okay, no. So yeah, last for a whole cycle like, yes, which basically if they're not able to dry the pads for two days they at least have enough dropouts to last three days. Okay, that they get six pads and three seats with each other.

Alexandra: Okay, really nice. And I was wondering do you think that multinationals will develop eco friendly alternatives to their pets. No, no.

Richa Malik: I think they might switch to bio plastics at best. Because whisper recently launched an aloe vera on the top sheet sort of a version to the Donaldo sanitary napkins, years ago when I used to work in PNG they launched. Courtney field top layer which was basically a softer pad boosted plastic multinational companies will not move away from the super absorbent polymer less crystal for the US, which basically provides the absorption. So, and, of course, that those crystals will make your entire pad non recyclable as well and cannot delete compost. So I don't see them shifting to definitely not shift into reusable options, hopefully they

might, I don't know some DECA organization decides to launch menstrual cups. But I don't see them launching reusable pads, because it's a different technology altogether versus what they've invested in, so they've invested in huge plants and machinery for making the visible pads, and you can't make reusable pads on those machines. Yeah, there's less sales right, It's less repeat rates and.

Alexandra: Do you think that in the long term it will put them at a disadvantage or not.

Richa Malik: Now, because in India sadly the awareness call for sustainability is by Legasov as deep as it is in the west right now. Plus, looking at the governance laws and the changes in the environmental laws in the country. There's no incentive for any organization right now to change their products. Okay. I don't see changing for at least another decade or two.

Alexandra: Okay, so do you think that, like, small scale enterprises can provide a good solution.

Richa Malik: Yeah absolutely and they do as well there's, we're not the only ones in fact who make reusable cloth pads. There's quite a lot of small scale organizations that make cloth pads have different designs. Some of them make the LED ones, some of them make similar to this foldable pads ones but their thoughts about logic is different. Some of them make the follower pads in a way that the waterproof layer is stuck to the same pad itself and so on and so forth. But there is at least. Last I remember there's easily about eight to 10 brands, small brands, which make reusable sanitary napkins. And then there's a lot of NGOs who make these reusable sanitary napkins, which they do donate anyway. Okay, I see them changing the face, especially in terms of rural menstrual health because that's also where bigger organizations will not reach because they're the lowest price one that the offer is still not affordable for that.

Alexandra: Okay, but how can the small scale enterprises reach the rural areas,

Richa Malik: So I think it'll have to be a way in which people stop clinging on to the brand name, that, Oh, it has to be my brand versus somebody else's, which is where we've in fact shared our sanitary napkin designs with a couple of organizations ourselves okay if you want to make it and you want to distribute it locally, please do this is how you make it and these are the sizes and so on and so forth, because we can't reach every local area we have right now we reach in one place. We keep getting requests that can you donate in our area regional status. But we can't we don't have the operationalization or the capacity or capacity nor the capitals. So we basically give them the technology that you know this is how you can get it made. This is what you need to do. And please, be the torchbearer yourself instead of waiting for other organizations to come in. But I think it's quite possible because we've seen it happen, there's, there's a very good system in India of anganwadis which are basically, these women in smaller villages etc who take care of kids who also help advise women on health care and everything, and where, at least in some of the states like in Kerala, etc. The government themselves have tied up the anganwadis with a lot of organizations for donation of either menstrual cups or reusable sanitary napkins. So if the government takes such initiatives, and they're not taking these initiatives with the big organizations themselves, that they can leave initiatives with smaller players on their own. and usually they take it up with NGOs, etc. So, with those efforts. I think the reach is much better because the Reach for rural programs is usually better when the government steps in it's not, it's not helpful if it's private companies try to do it on their own because they go there once they counted as a tick mark and then they just assume that okay now the person will buy the bag to see I think if you look if you look for, I think it was. Yeah, I think it was Canada pre pandemic that they did up donation right. And they did a reusable cloth

napkin donation drive as well, which, it wasn't like a one time guy because more of an education program than providing the alternatives.

Alexandra: Okay. So according to you, like privates, small scale enterprises need the help of NGOs and governments, to be able to reach these rural areas. Okay,

Richa Malik: In fact our beds are also made by a self help group women in another state, so not in VR and up. And then these women they make these bad for themselves and for the women around them as well. So we've told them, feel free to make it, and not just give to us to sell, but you make it and you give it to people around you who can buy it at whatever price. So, even the ones who are making it naked for themselves as well, because they're comfortable with us.

Alexandra: Okay, that's all very interesting, I'm checking if I have other questions. And do you think there are some barriers to the adoption of the reusable pads

Richa Malik: Instead cities Yes. In cities definitely because there's a lot of women who are working who are on the move, who expect the menstrual hygiene products that they're using to be easy to use, easy to switch, easy to wash or reuse etc, which is a challenge with reusable sanitary napkins, not challenged with cups. Yeah, but, of course, like a lot of like a lot of my own friends are not comfortable using cups I keep telling them and I'm like, I've been using it for years prior, and so on and so forth. I've managed to convince two of my friends, because they're not comfortable with the idea of using tampons so for them switching to a reusable sanitary napkin I understand the challenge is usually mixed consumption at their end so they're like yeah we can use it when we're at home we can use it when we can just soak it directly right when we're changing it, so we can't use it when we're traveling, which is quite a valid concern. But in villages, we've seen a better adoption like even with the drives that we've done one a lot of them do have women in their own households who were using cloth napkins before. So it's not a new product for them it's something that they, they knew was being used by women in the household, they stopped using it because somebody came and told them that it's not good and somebody came in so called educated them on the new products available, etc. And it's also a little bit of an aspirational product for them, that we use in the same product that when in other cities use and so on so forth. But adoption rate is definitely higher because they have help at home, who's used it before, who can guide them about it. And also because it saves them money, it's a very simple math for them that okay we're getting this this is going to last for three years. And I'll end up spending the same amount of money in five or six months on my pads, so that it saves them a lot of money. But, yeah, in terms of cities I don't I, I'm not sure how. Unless and until you start coming up with options where you know you can keep the pipes or like an entire day soil, and it still won't stay, because it will stay. If you leave the if you leave a soiled pad. Leave it to dry out and then you soak it and stuff it will stain a little bit, it becomes harder to clean it out. So those challenges remain I think product innovation should catch up, but I don't know if the adoption rate will be that fast because women have gotten used to using plastic bags, which is why they switched to these biodegradable products to begin with because I think I want to do something good for the environment, and I don't want to change my habits. So here's a product that's claiming to be good. Sadly, in India, we don't have strong laws on bio plastics and we don't, I don't see them coming up for the next few at least five to eight years, easily. I think I did unless you lead the way on the new bioplastics lawns, etc. The adoption in India is very very slow on these products, so they continue using them, they're like yeah, it says it's using bamboo fiber, and they don't even know that bamboo fiber is not sustainable, they just think of it as bamboo. So it's bamboo fiber and bamboo

sustainable so bamboo fiber must be sustainable. So they started switching to these products, and it's, it's just, I don't know it's just an easy switch for them, then it's well intentioned, but it's the lack of information and the lack of regulations that then promote all these products.

Alexandra: Yeah. So, bamboo fibers are not sustainable.

Richa Malik: No, it's not to do with, there's a lot of water to convert to basically to make fiber out of bamboo it uses a hell lot of water, bamboo fiber is not made in India right now, it's made in China. And then the fiber gets imported to India, then they spin it into a yarn or a cloth and then they make products out of it. So there's a logistical footprint, cotton in India, in fact, when it's grown, it's actually grown on black soil, which is basically alluvial soil which doesn't leave a lot of water. So when you read all these ACF and carbon footprint studies and water footprint studies for cotton agricultural research institutes in India have released their own studies which show you that when it's grown on alluvial soil, and when it is the organic cotton which has grown on these alluvial soil it doesn't use a lot of pesticides and it doesn't use a lot of water. So, it is actually sustainable but as compared to bamboo fiber which then comes from China. Banana fiber is a good option in India, because there is a lot of banana waste in India. But again, banana fibers still picking up a pace slowly in India as an option. And sadly, they've started making disposable plastic based pads out of it. I think there's one company which is making reusable cloth pads out of it, which is again based in the south, I have to remember the name, I can message anyone once I remember it. But yeah banana fiber was a good option because it's local, it's made from agri waste, it doesn't use as much water as bamboo as bamboo fiber does. But yeah bamboo fiber, especially for when you're talking about bringing it to India and using it I think there's far more sustainable options available here.

Alexandra: Okay. Yeah. And maybe one less question more regarding the multinationals are they like is the competition very high for because I read that only like 36% of women in India have used sanitary pads so there's still like a lot of room to grow but is it then, like is it very competitive, or not so much.

Richa Malik: Um, so it is competitive. The 36% number that you see is basically the penetration that they look at so basically any woman who has used it even once a year. They counted as penetration and 36% I think would be the overall number. Urban penetration is obviously higher it's somewhere in the 40s but rural penetration is very low for sanitary napkins, so to say. So, which is, which I think is good in a way because they're used to using cloth or they made products of the naked home or they use plain cotton, cotton wool. But the sad part of it is that women in tribal areas and women and I think I just found a bizarre, one of these two states. They also end up using anything and everything that they can find like there's a lot of menstrual hearts that, that, that's a concept and villages where during the menstruation actually shipped to them so that they don't even stay in the same house. And these hearts are not well provided they're not safe, they're not very clean as such it's basically free bleeding in those hearts. So they need to be given but they're not. And I think one. There wasn't there's an IAS officer who may basically intervened and one of the tribal areas in. I am going blank on the state. In one of the states where she actually provided for a better, better menstrual heart. So instead of asking those women to change their habits to adopt a new product to the right are used to doing this, that's fine. Keep doing this, but do it in a safer, more hygienic manner, which I think is a better way of solving the problem versus, You know, shoving it down their throat or forcing them to switch their habits or fortunately use products for which they have zero waste disposal methods in the villages. So, those kinds of solutions are there but I got competition wise I see these Dan going like I know this for us to have these direct to consumer programs where they

used to have these village programs where women would go with a lot of these products and distribute them for free like one or two packs for free and get these, you know, educational sessions, etc, which are, which is the money that the brand spends on building at bottom of the pyramid and so on and so forth. But they've not been able to move in, because the 36% number that you're quoting was around 33 34% When I was an FMCG just five years ago. So within five years the number has moved over two to 3%. Clearly these activities are not what's going to make a difference what's going to make a difference is government interventions, and the brands can keep trying, but the, but sadly it is done the fighting amongst urban share and they're fighting amongst themselves in terms of the gets more share of the disposables as the conversion is still very slow. Even in cities, I had remember user experiences where you would go to a woman's household where, you know like the court fancy LCD LED TVs the car lots of jewelry lots of money and everything, but the woman is still using cotton, or she's using and when I say cotton like the actual cotton wounds and stuff something that piece out of it and he was that, or she would be using cloth, etc. And she would have never used or bad or she doesn't know about it or she doesn't want to use it or she can't even she doesn't even talk about it. We don't apply this in the house and stuff. So and it's, it's common, but I think where I think I think it's a good thing that they're not able to move that needle, because if they were able to able to move that needle, then we will have a far bigger problem of sanitary waste than we already do.

Alexandra: Yeah. Okay, I think I've covered all of my questions, and I said they would last 30 minutes, so thank you so much, it was really, really interesting. I think a lot of interesting insights that you gave me.

Richa Malik: Like, I hope it has, happy to answer your questions if you have them, and I'd be happy to connect you with Shalini Jha as well, who is the founder of alpha, which is a which is our implementation partner. So they actually work on driving menstrual health awareness in Bihar, both in the cities and in the villages, so she might be able to give you a lot more insights than oh

Alexandra: Yeah that would be super super nice. I would love that. I connect to my LinkedIn profile with you. Okay, and share yours. Good. Okay, perfect. So nice thank you so much Richard was, was great. I hope the study comes out well and I actually actually used your plastic calculator before the interview. Yeah, I did. Yeah,

Richa Malik: I did plastic free July as well so you should look at reducing your Yeah, we had a good score I was quite proud. Yeah.

Alexandra: I said that I was in the 10%, which were about eight or nine kilos, I think, yeah, something like that, and that's awesome.

Richa Malik: Nice. Good. I connected with Shalini Jha, and happy to answer any more questions if you have them. Okay, thank you. And, again, I'm sorry about the misunder delay,

Alexandra: Don't worry. Really, no problem. I take care, bye bye.

Appendix 10: Shalini Jha Jha – Alharh 11/07/21

Alexandra: So my aim with my master thesis is to analyze how menstrual health in India could be improved with environmentally friendly menstrual products. And therefore I want to collect insights from people on the field. So if I understood correctly, you have launched almost two years ago, a menstrual awareness campaign, which is called Alarh and with this project, you have currently reached more than 700 schoolgirls and more than 500 menstruating women in vulnerable communities? And how do you proceed to do that?

Shalini Jha: You're right. Glad that you've gone through the silent chakra work, you know, if you fail to know that. And so the two things that our campaign majorly focuses on is menstrual awareness, and menstrual equity. So we started off the campaign in December 2019, primarily reaching out to school going door to door and conducting awareness sessions with them. With regards to menstruation, the stigma, the myths and misinformation around it. And also addressing the social aspects of it, which is often missing from the curriculum of the schools. It's mostly just biological, and even when it is biological, you know, you don't see representation of trans inclusive or non binary inclusive terminology. So all of that we mixed together and created a module and then reached out to school going adolescents with events sessions, that's how we began. But the pandemic hit about four months later so the activity completely halted. But at the same time, we also realize that we needed to intervene differently as well. And that's when the second part of the campaign came in, when happy turtle reached to us. So we collaborated with them. And since we were receiving a lot of requests from across the state, and across the districts that we work in reduced access to menstrual supplies, we then collaborated with the Happy Turtle. And we tried to, you know, crowdfund this dryer, which is called semaan, which essentially roughly translates to « dignity ». And we tried to crowdfund an amount equivalent to 100 plus kits of reusable cloths which we distributed among economically marginalized communities over here. So that is how we mutually work. And of course, we use our social media extensively, in terms of awareness, in terms of connecting to more people collaborating, and just trying to do more work in the space of menstruation

Alexandra: Okay, and when you were distributing the happy turtle pads, did you also raise awareness about how to use them and so on?

Shalini Jha: Yes, absolutely. Have I not shared the social media link to our page with you? I'm not sure. I'll just share those social media links with you shortly after the call. So we have a series of videos and photos on the drive as well with the whole process of instructions on how to use the products and separate information regarding menstrual awareness . It is properly documented so if you want I can send it to you. So yes, we did do that. And, you know, frankly, speaking, I believe that since we are the privileged lot here, when we go on field, we do go with certain assumptions, own assumptions, which I guess we'll be able to talk more in the course of the conversation.

Alexandra: Okay, and do you talk about the different menstrual products which exist during your menstrual session in schools ?

Shalini Jha: Yes, we do. In fact, I'll just tell you something interesting which happened when I did my first awareness session. And at that time, I have a background in social impact domains to awareness as such. I'm a literature graduate. And it was quite a new field that I wanted to step in. So the first session that we did was with , sixth and seventh graders. And the teacher asked me to show her the module that I was going to present during the awareness session, and the module mentioned menstrual cups. So she specifically said that I shouldn't be talking about this particular product. Because it's an insertion product. And you know, there is a

widespread social stigma of associating penetration with the loss of virginity. And that product, according to her, was not well suited for students, especially teenagers. So that was something interesting that happened. And I did mention about that product nonetheless. But I think it was worth a shot. So we do focus on trying to enable menstruation so that we reach out to to make an informed choice. We do talk about products and all sorts of products really. Yeah.

Alexandra: And I think I saw on your website that you also distribute pads? How do you do that? Do you collaborate with multinationals or other NGOs? Or how do you distribute these pads?

Shalini Jha: So we did three or four distribution drives in the past, all of which worked differently. So the first distribution driver that we did, it was at the start of the company last year, which is in 2020. I think around June, we did our first distribution drive. And how we did that was we conducted an online competition with students, and the registration fee that we collected was directed towards funding these kits, which had sanitary pads. And in the second drive, we received a donation from an organization that is already working in the menstrual health domain. And the third we've done it with the Happy Turtle. So we've crowdfunded the whole drive. Yeah.

Alexandra: Okay. And do you think that social enterprises could play a role in improving menstrual health in India?

Shalini Jha: Oh, absolutely. I think that when we talk about enterprise, especially small and medium enterprises, which are mostly the kind of enterprises that make menstrual products, here in India, and I think the market size is very less when it comes to reusable or sustainable menstrual products, I think it's as low as one or 2%. So I think that the small and medium enterprises manufacturing sustainable menstrual products, particularly, are very important, in my opinion. This is out of my little experience but I most of the people that I've spoken to, founders of these enterprises, or entrepreneurs in general, most of them were women. And when I say women, I mean, of course, I'm not like generalizing the whole idea of menstruating people only as women. But these are mostly people that I've talked to, they identify as cisgender, women, and people who menstruate. And they took up the cause. And they started manufacturing these products or importing these products from other countries. So that was very interesting. I also happen to attend a talk by Stonesoup, the founder of menstrual cups, and also other reusable menstrual products. And this particular point was very interesting for me when I was trying to understand the market for reusable and sustainable products. And I think, in this context, these enterprises play a very important role because it is closely connected with the SDGs as well. Because they generate employment, they create reusable, menstrual products, reduction in pollution. And all of that combined, I think they do contribute to making sustainable cities in general, although their contribution might be really small at this point in time. But I'm sure that it will be. Yeah, and I do think it is very important.

Alexandra: Okay, great. And how can these social enterprises reach rural areas with their products? Because they don't have the same reach as multinationals, for example?

Shalini Jha: Yeah, actually, that is something that I'm exploring myself. And I recently had a conversation with the founder of speech. Actually, my friend had that conversation. I was a third party there. But it was interesting what he had to say and maybe I can send that conversation if it is saved somewhere. So he mentioned that in terms of investment in Siemens product like menstrual and in season are doing it. It's mostly social enterprises making these

products and selling them and trying to reach out to a marginalized populations and so on. And he said that it's not because the repeat is higher, it's not because of that but it's because the market size is low right now. Maybe when people create a demand for it, then you see multinationals coming in this domain. When it comes to reaching to rural areas, or areas that are at the margins, and so on, I think it is mostly NGOs which are reaching out, or very, very socially center initiatives. But for social enterprises, I'm not really sure. One model that I've seen being replicated across the country, are self help groups because they are government subsidized, and pad manufacturing units are set up. But other than that, at least in my district, I haven't seen a lot of social enterprises coming in and just NGOs and socially centered initiatives.

Alexandra: Okay. And are these self help group efficient? Are they a good solution according to you

Shalini Jha: Yeah, I think it also generates employment. And also, I think that there is an encouragement of entrepreneurial skill set. Because most of the people that I know who set up these facilities, whether they are nationally operating or locally operating, they do give a sense of empowerment to these women, because in most cases both the employer and the employees are mostly women. And a lot of them then go on to also establish small or medium scale products of their own, or start doing something of their own. But I think this I won't say statistically speaking, because it won't hold true, perhaps, but I will try to get some data on it, because this is just an observation that I've had, with my limited interaction with facilities that work locally. But I think we have to look at the larger pattern and see if there's some statistical data available to be studied statistically.

Alexandra: Yeah. Okay. And what are, according to you the biggest barriers to the adoption of eco friendly products ?

Shalini Jha: So I think I can give you anecdotal references with what we have seen on field. So we've done two drives till now. And in both the drives one particular experience came out, like was highlighted was that we went to Eros told us that we believe that flow, or anything that has to do with clothes, in ML for color is and this was a constant question also brought up by our own followers, or the audience members on our social media pages, that « Is cloth hygienic enough to be used as a menstrual product ? » « Wil it cause infection ». And a lot of people we reached out to on the field, have the same question. We asked them « What did you use before ? » and a major portion of these menstruators used cloths before they switched to disposable sanitary napkins. And when we asked why they did that, one reason that they cited was because previously they used to use old cotton saris to meet the crowd, just call them up and use them as a as a method of menstrual protection. But now cotton has also become expensive and not very easily available. So that's one. And the second thing we were told by people who started using disposable pads is that all the marketing and everything going on told them that disposable pads are much better because they have less chances of causing infection, which cloth does. And that's why they also switched. So probably, the ripple effect of somebody else using a product and then...So these were the two reasons that came up. And you know, we tried to tell them that can be a hydroponic menstrual product if cleaned properly and dried properly and so on and it can be financially sustainable and environmentally friendly. So that's one thing that we noticed. Another thing was about menstrual cups. And I had been a part of a research project that we were doing around menstrual cups and accessibility. And all that research report is yet to be published. So I can't give away major details. But I can tell you this, a lot of respondents did mention about insertion and the discomfort associated with

the idea. Even as we work with the dollar sense, most of the volunteers that we have in our campaign are mostly school going students. So when we talk about menstrual cups or when we disseminate the information about it, one thing that comes up is « we need our parents permission to switch to menstrual cups. » And often motherd are averse to the idea of something that has to be inserted inside the vagina, because it causes loss of virginity. So that is another thing that we've seen with regards to menstrual cups. There are also questions about safety and quality of the product when it comes to menstrual cup, because it's a very new product, there's not much to explore, and you won't see TV ads about it, you won't see government advertising it or anything or you won't find it in government medical centers, mostly it's disposable pads that you find. So the credibility is very less. And so people do have questions about safety : « will it harm me if I use it ? » and things like that. So these are some of the observations that we've had working with people around menstrual health and talking about products.

Alexandra: Okay, great. And then also, I feel like most initiatives target schoolgirls. But do they actually have the power to choose which menstrual products they're going to use? Because like, you just mentioned that they have to ask permission to their parents to use the menstrual cup. And I guess they also need the money to buy these menstrual products so are there initiatives which target mothers or other people than school girls?

Shalini Jha: Yes. I actually did. Number one, its population foundation of India. And even we have tried to include mothers in the conversation before. In fact, we might have a session this month itself with mothers of adolescent girls that we reached out. And you're right, I think when we reach out to school girls, the consent of parents becomes an important factor in choosing products, especially like menstrual cups. And so it's important to include parents, teachers and other stakeholders in this conversation. I agree with you. But I think that it's also important to do this paddling along with the information to school going girls because they have the information to make that choice. I will tell you about this one volunteer that we have in our she's currently in 11th grade, so 16 years. and get away with even doing the special menstrual cups and she said that she really wanted to try out this product. And her mom said you don't insert anything inside your vagina and so on. And then, you know, with the help of her elder sister, who's about my age, 24, she ordered the menstrual cup. And then once it came, she used it without telling her mom. Now I'm not advocating for that. But you know, she went through and then she told her mom that I just used a menstrual cup, and it's the best thing ever. And I spent about 1000 rupees, so I can't return it or anything. So she just said « I spent a lot of money on it. So let me keep it » as short because he can convince. So we weren't asking other volunteers to do this. But it's quite interesting, because, you know, they'll find the loopholes, and we just like, work around ways to just get that agency of choice for themselves. But I will agree with you that it's important to include feelings in this conversation. Because ultimately, you know, we're sitting in a corner, we're on a zoom call, and we discussed making an informed choice of switching to a reusable menstrual product. And then once that call is over, once that session is over, when they go back and talk about it to their parents, and we hear no, it kind of defeats the whole purpose for talking about it.

Alexandra: And then you also involve men and boys in the conversations ?

Shalini Jha: Yeah, I was about to add that point in the next question. So, you know, to be able to undo social conditioning of so many years, I think more than just 90 minutes of session with school going adolescents as well as to include other people that they interact with. So non menstruating come into the picture. There was actually a non menstrual who approached us

first. So there was a non menstruator who came up to us from the school that we did our first menstrual awareness session. And he said that « you know, I really want to be a part of this campaign, because I think that non menstruators should talk about it. ». It made me so happy when he did that. And right now, we are actually launching an initiative that has to do with non menstruators which is doing awareness around menstruation with them. We actually launched an Instagram video series only and specifically for non menstruator readers. Because you know, there were questions coming in when we started our social media page about how to deal with situations that have to do with menstruation. « So I know that menstruation is biologically based. But I don't know how to behave when somebody is having a menstrual cramp? Or if somebody is PMS around me, how do I deal with that? » So we created a video series basically targeting non menstruators. And we also try to spread the sick biological information that often may not read, accurately, enough simplified way into books that will non menstruate as a reading along with menstruate. So that's how we tried to do it.

Alexandra: Okay, nice. And what's the most efficient way according to you to break the taboo surrounding menstrual health?

Shalini Jha: One thing is, of course, questioning it first, and making people feel normal when we have conversations around periods. I have a lot of stories to share. So like, one thing that I can remember is, I think it was my second or third session that we were doing with students. And when the session ended (it was a 90 minute session) And when the session ended, a menstruator said that, « you know, this is the first time that I've heard the word spoken out loud » or repeated itself is a euphemism. But even that you famous, she said, When is the first time I've heard something like this? And I just want to say thank you, because it'll mean confidence to be able to use that word. And her follow up question to that was « it made me think that I'm not allowed to worship, what I'm not allowed to enter a place of worship, in my home or outside my home by like menstruating. And I am not comfortable with that. So what do I do? » And I did not have a simple answer, that nobody can give, like a short, simple answer to something like that, because it is your social conditioning. And it takes more than just a small simple step to break that. So I said that it's important to ask questions, it's important to feel normal to have this conversation in the first place. So I think that would be the first thing that I will say about breaking taboo is to have the conversation, because only then will the conversation go beyond just talking about feelings and more about the taboos that exist, the restrictions that exist when it comes to menstruation and so on. Another thing is, I don't know if this is controversial, but to be rebellious. Even I wasn't allowed to do certain things on my own menstrual period. And I think launching the campaign had my story to it in the sense that I had to use years of menstrual stigma myself, I am suffering currently with a number of conditions associated with menstruation. And I said that, if I continue to just go by the rules, which are not a question for a long period of time. If I don't read them, then it's going to be difficult not only for me, but also people who are younger than me. And I think that somebody has to be clean. So you know, I can solve while the Buddha is there is that we don't worship a lot of people do not enter places of worship when they are bleeding. And in my household also the same thing used to be followed. So, this one time, I told my mom that you know, where is the who said this to me? And my mom went quiet. What do I say, my open minded if I can use for the lack of a better term? So she said, Yeah, you kind of move somewhere. So I should I said so can I and then and she was about apprehensive about the idea. But we slowly had more conversations around it and administrator she did empathize and sympathize with my experiences because she'd gone through the same. And then ultimately, she did warm up to the idea. And now I do go to places of worship while I'm bleeding. So what I encourage is conversation with people around. So we don't necessarily have to, you know, lift the torch and

walk down the streets. And in no way I'm downplaying people who are out in the streets and products, because that's important. But also just basic, small conversations with people around us meet our mothers or fathers or other menstruating or non menstruating members of the family. I think that can go a long way. I believe in the power of conversations, in breaking the rules, because obviously, a five minute conversation, we cannot undo something that is so internalized, something that has been going on for centuries. And so it will take more than just 5 minutes conversation but sustained interventions in forms of regular conversations, and normalization around the idea of periods, I think that will go a long way.

Alexandra: Okay, that's very interesting, and maybe a more general questions : what are according to you the biggest gaps in the menstrual health initiatives?

Shalini Jha: A very large gap is that most initiatives don't include transgender men and non binary folks in the government, because you won't see any data on transgender or non binary folks. And also initiatives because a lot of initiatives damad as a women's health problem, or a women's hygiene issue, and so on. And it's not just women. So I think that's a major gap that we need to address. In fact, we just had a conversation like a couple of men's who have conversation on our Instagram page. And yeah, I mean, that is how we realized that. And mostly when we talk about them, we try to represent the voices of people who do not identify as women. I think that is also an associated gap when we talk about transgender men and non binary folks, and I'm guilty of the same. But you know, we're trying to be more inclusive, we're trying to give space to people who were not given the center stage and conversations around menstruation. So yeah, gender inclusivity, I think is a major gap. Second, that's not just the case of India, I think that is also a global issue very much an issue. The second challenge I think is, people see the solution to menstrual health and hygiene related problems, only with products. So only with distribution of products, they feel that a job is done, by one way and distribute sanitary pads among 50 menstruating women, my job is done. I think that would obviously be a flawed perspective, in my opinion. Because 15 interventions, and more than just a product to solve problems around menstrual health, or menstrual hygiene. Definitely conversations. And a lot of times, I think that when we go down on the field, and when we talk with people at the grassroots, or people at the margins, we often come with a lens that « we know more » or « we know better », because most of the entrepreneurial initiatives you will see come from people who are privileged. I don't think that I'm statistically incorrect. So when we go down, we can come with a privileged lens. But I think it's important to encourage leadership into itself, rather than just going as a hero or a patron and just trying to do ourselves, trying to make ourselves the center of the conversation. So I think when we talk about people who need a bit of more hand holding, I think that the leadership should come from the community and the grassroots and that will go a long way in making menstruation a non issue because, you know, these are communities that are important, but I don't think that it is all the time necessary to have an outside intervention is important. I think that these people are capable of doing it by themselves. That is something important when we talk about challenges or in understanding of menstrual health.

Alexandra: But how can these grassroots initiatives be stimulated, because I guess otherwise it wouldn't be a problem if grassroot initiatives were popping up everywhere ? So how can we make it come from the bottom?

Shalini Jha: Yeah, I hold on to this as an expert, because I was still learning myself. But I think one thing that we have seen is when we have these conversations, you will see the response yourself, like when we are speaking to people, or when we are working with people at the

grassroots. It is a topic that elegance, like menstruation, you will see that when you have conversations, people will themselves respond. Like this one time, when we've gone through the drive, you know, we have this assumption that we will not receive any supportive response. Because it was primarily like a male dominated or non menstruating dominated area. And when we went there, we thought that we will not receive a response. But actually many men's leaders came up and they said that we wanted to have a conversation like that. We wanted to have an initiative like that. And we said « you do it and we're ready to provide any kind of support, if we can advance to the level of saying the prizes. Were you know, they're not just initiatives ». They're not just self help groups, but they're also enterprises. They're also like, generating some degree of profit as well as catering to a social need. So yeah, I think I agree with that. And perhaps I think I will not be able to comment more because I don't work with the GS, it's only an observational comment that I'm making, reading somebody who has an experience of working with SHG is we will be able to respond to this better.

Alexandra: I think I have covered most of the questions I had. It was a very, very interesting discussion and you really provided me with good insights.

Shalini Jha: Sure, I loved talking to you as well and I was so happy when Richa told me about you and the pieces you've been working on, because there is also a gap when it comes to research and I think we need more people to be working on this issue, to be studying this issue, and I'm so happy that you're doing it and more power to you really. Send over your thesis whenever you finish it.

Alexandra: Yeah, I will send it for sure. I will probably finish it mid August and then defend it at the end of August. So I will send it to you.

Shalini Jha : Sure. I would love to read it and all the way. Thank you so much for this conversation. Bye bye.

Appendix 11: Tarun Bothra – Saathi 18/06/21

Alexandra: Thank you so much for taking the time to meet with me. I actually chose to analyse Menstrual Health in India after having discovered Saathi through the Solar Impulse Label. After that I got really interested in your company and I already wrote a paper about it for my Regenerative Economy class. Now, my aim with my master thesis is to analyse how Menstrual Health in India could be improved with environmentally friendly menstrual products. And therefore I want to present some case studies about the best practices and also analyse the barriers to the adoption of these products. My first question is, at first I saw that you developed banana pads and then later you started commercializing bamboo pads as well. Why are you using different raw materials?

Tarun Bothra: Our company is working with a lot of material science and basically we wanted to see how we could make fluffier pads and how we could make cotton pads and other materials so that is why. They are both menstrual products but they have different thicknesses.

Alexandra: Do both have the same quality as the pads you can find in the shops?

Tarun Bothra: Yes, so they are of the same high quality standards of any other commercial pads which you can buy in pharmacies or grocery stores, but I cannot name the brands as you are recording.

Alexandra: Where do you source the bamboo?

Tarun Bothra: We work with farmers, we work with a lot of farmers across India to source these raw materials. Especially natural products which come from farms.

Alexandra: I read in an article or in one of your Ted Talks that at some point you were considering doing decentralized production but then you did not do it because according to you it is not the best strategy to increase the access to sanitary products in rural areas. Could you elaborate on this please?

Tarun Bothra: We actually started back in 2015 as a decentralized model but we realized that there are other such models which are out there. But the problem with these models is that the self-help groups which are running these production units do not have the kind of investment and infrastructure to run these models. They are hygiene products, they need to be very very clean, made in sanitary conditions but in villages, whether it is India, Africa or any other countries, with remote locations, you will not find such enclosed infrastructure. There would be rains, a lot of water nearby, too much moisture in the air which is going into these facilities which creates fungus and this results in non-sanitary products. So why would you switch from a cloth to a sanitary pad which already has bacteria in it? Because a lot of people in these decentralized models use SAP, so super absorbent polymers which absorb moisture around them. So imagine if there is an unsanitary place where the raw materials are put openly, not properly enclosed,... So no proper conditions to store them in sanitary conditions. We saw these models which were rapidly spreading across india, causing more issues. But even if you are able to make it sanitary and clean and so on, the problem becomes when they have to go to market, they do not know how to sell, there is no space where they can sell it. So operation cost over the year is high so the model is not as profitable as a commercial company. So we switched from a decentralized to centralized model.

Alexandra: Okay, that makes a lot of sense. And then you also have the 1 million pad project, how is it working? And is it successful at the moment?

Tarun Bothra: Yes, that has been one of the most successful programs we have ever launched so far in southeast Chearney, where we started providing free pads across India, specially, starting with Chargan, providing pads to rural women through NGOs, without any cost, with our profits from urban areas. So that's what we have been doing, and it's been going great, we are adding more and more NGOs every day. Going forward, right now, we have a strong network of 28 NGOs, we work with day in day out. And then another 50 buys when needed and they are helping us go through rural channels and rural India.

Alexandra: Okay, nice. And do you also try to raise awareness when you donate the pads?

Tarun Bothra: Yes, so the 1 million program includes everything. It is mainly based on safe sanitation. So when it comes to one million pad program what we will do is we will go and look at a particular area and assess the needs. So it could happen that, let's say, people have money, but they don't have access to a safe hygiene space in schools. So you cannot change your pads in school so you would not go to school, or your workplace does not have separate

toilets for women. So that happens a lot in villages where you know, there is only one toilet to be used by male and female and this creates a lot of problems for safe hygiene space for women. Now, we will see what is needed and how we need to intervene and who is a partner we will be needing. So, there are companies which make toilets, portable toilets, so we'll connect to one, ask them to fit a toilet and then our part becomes when menstrual hygiene comes in place. We will install vending machines, provide products, provide awareness programs, do workshops in schools in rural areas and help self help groups. So, depending on what is the need of that area, we will curate a program, accordingly, instead of going in a blind sighted program where usually a lot of people would do that and just distribute pads. Now, a lot of women have pads, they know about pads but they are not able to afford them. A lot of women would not have awareness about it. A lot of women would not have access to a safe space to use them. A lot of times we have seen that there are villages where women do not have access to undergarments. Now if they don't have access to undergarments they cannot use pads, so it becomes useless to give an individual product which, even though is useful but it's not usable. So we will go and look at what needs to be worked on, because we don't like to waste money on just blindly giving pads and circulating them. A lot of times they don't use it because you didn't tell them how and why to use it. They would also not tell you that they don't have access to undergarments for instance. They will take the product, and see if they can sell it to make some money back. So yeah, as you go in the area, do surveys and see what is the requirement.

Alexandra: Okay. And I was wondering, Is the government taking initiatives to push the adoption of more environmentally friendly options?

Tarun Bothra: Well, yes and no. Because the government is a big organization, they need a lot of support. They cannot just keep on spending on one particular product because health care involves everything from adolescent care to all women 's health care to care for other sorts of diseases in rural areas. So yeah, they have launched a product which is so called biodegradable, I would say,

Alexandra: Oh yeah, is it the Oxo degradable pad?

Tarun Bothra: Okay, that's why I'm not commenting on it properly, but it's not, it's not what we are making. You can not call these products 100% compostable product, it does have plastic in it. So yes, there are policies which will push greener products from government sites like the "zero effect zero defect" policy which says that manufacturing plants which are 100% sustainable would get additional benefits and certificates from the government. Then Swaach Baarat is Clean India is an initiative where they are pushing less plastic. Government recently banned all single use plastic across India. So there are programs which are pushing people to move towards more greener options, directly or indirectly. But yes, if you ask if there is a program which is entirely focused on feminine hygiene, not really per se, but every department has something, especially child and women welfare department have MHN programs where they push awareness. But the government cannot always work to make the product available, right? It is the second largest democracy so imagine if you have to give to, let's say out of the 650 million Indian woman, half of them are menstruating at any point in time, which means 300 billion pads, every month. If the government has to provide this amount of pads, I think it is not financially viable for them because governments are usually loss making entities. They are run based on taxes but there is income variation in India. Not everybody is making as much money so does not get as much tax everywhere. So to run one such program, it would take time, but I think yes there are policies which encourage it. There are organizations like UNICEF

government ministry of women and women welfare, which has taken initiative to push it in certain areas, and looking at those programs, whatever the outcomes are they would like to replicate it multiple places.

Alexandra: Okay, great. And then, what are, according to you, the four or five most important barriers to the adoption of your pads.

Tarun Bothra: Well, I would say the general barrier for any menstrual product is awareness. Right. People need to know, because there is no policy on disclosure of materials, or to use society claims. We use 100% compostable materials and we say in detail what material we are using so banana fiber or bamboo fiber, we claim it. Not everybody is claiming, especially bigger FMCG companies because they know the moment they start claiming, people will know what chemicals they're using and customers would not appreciate it. So yes, awareness about the product is the biggest roadblock I guess for any adoption of products. When you're fighting with FMCG companies, which have tons of marketing budget which will make movies ads posters, banners, to make their product more appealing. While, if you are small, then it takes time for you to actually outreach to such a mass population. So yeah, I mean awareness, availability becomes a problem in terms of that. Other than that, I would say, spending capacity because our products are often not affordable in rural areas, so there is so much that we can do as an entity. Like, if I have 100 Women who are paying premium in urban areas. I am only able to donate 200 women in rural areas. Right, that's how I can make a sustainable business model, I would not be able to get to 200 women because I don't earn that much money by selling 200 women at a premium cost. So scale could be another issue in terms of adoption of these products considering the market is price sensitive in India. I would say a lot of people would not even buy those plastic pads because they are expensive, let alone purchasing eco-friendly products.

Alexandra: Okay. And do you have other barriers in mind? Is taboo a problem or not so much?

Tarun Bothra: I mean it covers it all, right. Let's say materials with taboos and because a lot of products are recommended by family members. For an individual, especially when it comes to products like medicine or hygiene or contraceptives, either your father or your mother would be telling you, and whatever they are using, you will end up using that. Unless you make your own choice or you are completely independent. And by the time you become independent you are adjusted to a certain product which you have been using for quite a while. So, that awareness and then taboo, there are certain religious facts which would also cause some people not using it, like they should use it for so and so reason because they are foreign products, they are not natural. Their thought process is right behind it that they are not natural, but not using is not right. Go find a natural alternative to use it, but they just kind of ban using it. So there are a lot of.. I cannot find the word I want to say.

Alexandra: Is it the word stigma you wanted to say?

Tarun Bothra: Stigma is there for sure. It has been there for generations, I would say the thought process behind not using these products is not hysteria but something else, I can't find the word. I am sorry. Right now, it is that it has been there in the culture, not using products, so that has been going on, and for that to change, awareness programs are not perfect. You have to reach out to them and then various multiple ways to get it so yeah stigma around it and taboo around it is also a problem.

Alexandra: And are you trying to tackle that barrier?

Tarun Bothra: Yes, we do. So if you look at our Instagram page we think out loud about all these things. We don't hide the blurred blue color or green color we just make it red. And it is blurred right, whether it is a medicine, or whether it is blood coming out of your veins. Both are blurred and if you can see the sight of red blood when it comes to medicine, why can't you see the red blood when it comes to menstruation. So, we are boldly speaking about it, we are not shy. We especially want this to become part of study as well as a curriculum. So, comic books are something which we try to put to kids, comic books at an early age, especially when it is read by both boys and girls. So they're very engaged because their minds are like blank books, right, if you tell them that, you know, talking about such things is not wrong. Just like sex education is part of curriculum, menstrual health should also be part of curriculum. So, that is something which we also have been working on, to put it in a way which normalizes menstruation from a very young age. So somebody who is growing up knows that a woman goes through the cycle every month, that it starts at puberty and that it is something we can talk about,... So yes, that is something which we try to do with comics, through interactive sessions with people like videos,...

Alexandra: Okay, great. And then how do you try to raise the awareness about your products, because I can imagine when competing with huge multinationals it must be quite hard to find your place?

Tarun Bothra: Better we put it simply out there right, it is a better product. When it comes to your health. It's just a better product. It is also a better product for the environment, the community, and health as well. If you're conscious about your health, you choose it, and the rest is taken care of by us anyway. So, yeah, we differentiate it. Simply saying what is plastic, what is not plastic, what we have, what they don't tell you they have. So, we put it out there in a post where it shows what kind of pollution, plastic pad causes, and what impact there is if you switch to natural,... So the whole idea is to simply tell them more about the product. that this has these materials this is how it is made, this is what you do. And if you know it, then you know it is better. Few people know how chocolate is made. The only thing you know about it is that there is some cocoa and sugar but the moment you know that there are farmers who are being enslaved in order to produce cocoa then you would not eat that chocolate brand from tomorrow. But if I say that I have a chocolate brand which is fair trade. It is taken at a fair price point from farmers who are independent of us, we don't own the farm, we don't enslave them or anything, and the chocolate is equally good as any other chocolate, then you will eventually switch to the better one. So, it's simply to be able to reach somebody who is conscious, right, that yes, you do need to eat chocolate, you need to use a pad. If it is almost the same cost, and it's just better for everyone, not just you, then why not switch to that product.

Alexandra: Alright and then I had one last question. I read at some point that you were considering partnering up for a disposal waste management solution, is that something that you were able to do?

Tarun Bothra: Yes. We have done it in certain areas. What we are doing right now is still developing a technology which is independent of anybody, because when you become dependent, it can become hectic if we want to scale faster. So we are trying our products as currently compostable but it takes time, it takes almost six months to make them compostable. What we are seeing is that there are ways they can be locally composted. Multiple corporations can actually segregate this waste, but because technically it is considered as biohazardous

waste, because it is a human waste, they don't sort it out. It still goes into the same garbage stream as your food waste or your plastic waste from your house being thrown out. So yeah, we are still working on it because it's such a large system to crack through to be able to segregate very limited quantities of products out of such a huge amount of waste is difficult for some systems. So in some places it has been implemented in cities where the population is very small, around 100,000 people, and where it can be easily identified. But in some places where there are more than 15-20 million people, it is difficult to actually implement the system because the sorting has to be done by individuals who are throwing away the trash. It cannot be done by the garbage pickers because it becomes too difficult for them to actually look through that small thing in such a big pile of trash. So, yeah, I mean installing an additional bucket in every household has a cost implication of its own. So not every municipal corporation would agree to doing that on day one. And next time, will happen.

Alexandra: Okay, great. I saw that you have a subscription model on your website. Why do you have that and is it successful?

Tarun Bothra: Just to be able to give more, I guess, products to individuals in one go and at a better price point, simply makes business sense for us. All right, we'll be able to sell, reduce operation costs. Okay. I have some questions of my own for you. Where will you be publishing your thesis?

Alexandra: It will be on an online portal where all the thesis from my university can be found.

Tarun Bothra: If you can share with us the copy of it once you are done finalizing your thesis. And who else you have interviewed for this thesis? Like are there other companies you're looking at?

Alexandra: It has been quite hard to find interviews, since I'm not Indian myself and I'm contacting people through LinkedIn. You are the third person I have interviewed and before that I interviewed the WaterAid and also a smaller NGO called LalSakhi which is trying to push for the adoption of menstrual cups in rural areas. I would like to interview other environmentally friendly menstrual products but I'm still searching. I've contacted a lot of people but not so many are answering but I've contacted menstrual cup companies, reusable pad companies...

Tarun Bothra: We are actually going to launch a menstrual cup soon. There are other products which will be coming in the next few months, which are sustainable, and which have a similar ideology as our banana process, which is to make environmentally sustainable products.

Alexandra: Okay, really nice! And if you have any idea of someone that would be willing to do an interview with me, I am all ears.

Tarun Bothra: Yeah, that's what I was asking, maybe I can look into it. I am not sure I would be able to request other companies who are competing because, well, they would not agree to my request because we are technically enemies haha. But I can look into seeing people who are into the space, either in awareness, or you know, spreading words about menstrual hygiene or in any other way.

Alexandra: That would be super nice!

Tarun Bothra: Yeah, so I'll look into who is in touch with us. You can actually look into talking to Goonj, which is an NGO which is into cloth pads. That's somebody you can talk to and then I'll talk to my sales team to see who isn't part of the network who actually helps us. But there are a bunch of engineers, which helps us, also in the awareness program. So if there is somebody who is willing to talk to you on topics

Alexandra: That would be super great. Thank you so much for your time. It was a very insightful interview, and I wish you a great day.

Appendix 12: Jaydeep Mandal - Aakar Innovations 04/06/21

Alexandra: Thank you so much for taking the time to meet with me. So, the aim with my master thesis is to analyze how menstrual health in India could be improved, and especially with environmentally friendly menstrual products. Therefore I want to analyse best practices and also analyze the barriers to the adoption of these products. So to begin with, could you tell me a bit about how Aakar innovation started and how it has evolved since?

Jaydeep Mandal: I have been an innovator since my childhood days and I have worked with multiple organizations. I landed up with an organization called National Innovation Foundation and Honeybee network. They work for grassroots innovation, redefining what people from villages, who do not have educational degrees like us but who face challenges in their daily life, by coming up with solutions. It could be from different fields like product machines, farming practice, medic, herbal medicine or something like that. So I was working with them and I found out that there's so many innovations being scouted but which were not getting commercialized. So I looked at that and then I shortlisted some of the innovations which I could work on commercially. So one of the innovations was, I don't know if you have heard about the Padman story of India? He was basically scouted by this organization, National Innovation foundation first and that's how he got national award, and then he became famous. Anyway, so I was tasked with trying to commercialize this machine. At that time I had no clue about menstrual hygiene. And in fact, when I look back now and see that my own home, like my mother or my older sisters, had never used sanitary pads and I used to see those clothes hanging around, and I never really asked what they were using them for. When I was finishing my MBA, I started it as a college project. And there, we had his machine, the Padman machine which was set up in the foothills of the Himalayas, as a pilot unit. So there, when I started interacting with a woman I figured that it's a very big challenge and in religion especially. We interacted with the doctors also she told me that there are a lot of infections that happen because of this. They use unhygienic practices like old cloths, primarily. I got intrigued by this topic and then felt like there was a need to do further work on that. Although that machine didn't work for us, because the Padman machine failed. We reached out to him and he was not interested so I, I took off, took this up as a challenge because I had been an innovator, I had some background working with innovations and innovators, so I traveled across India to check out other machines whoever people are working on this and also check out people, there are a few projects in Africa. I couldn't go there but then I got to interact with the teams which are from MIT in Boston and other, one of the sweetest students from university who are also working in Kenya. So I figured out like they were all making pads somewhat similar to that padman guy pads and those pads are not good enough in terms of the basic requirement of a sanitary pad which is like, let's say, the absorbency, the retention, the comfort, no leakage and the design aspect. So I figured that there is a standard for sanitary pads in India by the government, it's called the

Bureau of Indian standards like FDA in the USA. So I followed that and then fit those basic requirements of the pad, and then I worked for them to make a machine, which can make the pads which adheres to the standards. So it took me another year and a half and then finally I came up with a manual machine, which makes pads which adhere to the standards. So we went to the villages and we felt like women and girls are not that mobile so they may not need that wings in sanitary pads or extra protection for that matter because it added cost and then also wastage of materials. But then I was proven wrong. Girls who are in the villages they play around, fool around, go to schools and they also need that extra protection, technically, and secondly they also see television ads in the multinational brands and then they perceive themselves to use the same product. So we changed that machine, added the wings and then from there on, we sent a semi automatic version of the machine, and then now we have an automatic version of the machine then fully automatic version also to make pads. This all started in 2010. Around that time we registered Akaar as a company and then in 2012 I went to Afghanistan to with Aga Khan foundation and they're in a province called Baghland and I was working with a woman in that province to see that what is the status of their menstrual hygiene there and what would be the issues there and how we can tackle it. So after doing that one month research like custody I presented my outcomes to the other authorities, like our senior people and they told me about the challenge of disposal of sanitary pads. For example, an Indian scenario when someone, a woman or girl, is using a sanitary pad in cities the pads go into an open dustbin. Now, there are many times animals like dogs or cows, they take those pads out and then tear it apart and create a mess in the street. Now obviously it doesn't look good for city dwellers and obviously not good for the environment, but if you imagine the same thing happening in a village scenario, where everyone knows each other. If a woman is menstruating and there's a lack of a disposal so she just puts it in the backyard and then there are animals who can take it out in front of the house. So basically the entire community get to know that someone from that house is menstruating. So, this is actually a very big social challenge. I've seen it happening in many villages in India where women have stopped using sanitary pads because of this disposal issue.

Later on, after I came back from Afghanistan, they said “unless you have a proper solution to this problems we won't introduce this product to this community because Muslim communities they already have many restrictions, and then they do not want to add another challenge on top of that by introducing a new product”. So I came back and did research for six months and then in 2013 we came up with the first compostable sanitary pad, which means the product will disintegrate and become part of the soil within 90 to 180 days in composting conditions. And so till date we are the only certified compostable pad manufacturer in India. So one should understand that there is a difference between biodegradable and compostable. So these days we are often getting misled by many companies who are working on this. Biodegradable means anything which degrades naturally you can call it biodegradable. But unfortunately part of the definition is that there is no timeline attached to that, which means it can happen in five days, five months or even 500 years, you can still call it biodegradable. So, going by that all sanitary pads are biodegradable but it will take 500 years to degrade, whereas compost and compostable means like within 90 to 180 days it will get composted into manure in composting conditions. If the conditions are not met, it may take maybe a year or so ,depending on the temperature, moisture and all, but they won't go beyond that. These materials are made out of natural sources, primarily. So, these are all safe for human beings and animals and all. Otherwise, there is also something called oxo-degradable, where the materials disintegrate very fast but then it remains as microplastics in the environment and animals can eat it and they can die and come to our food chain. There's a reason why oxo-degradables are banned throughout Europe, and it is being banned from America. Unfortunately in India, and this part of the world, it is still going on, and companies are also taking advantage of that. So what we

make is fully compostable and we made it back in 2012-13, when no one really had talked about the green products in the hygiene industry as such.

Today, we went on and then we also set up mini factories, micro enterprise as we call them, where women work there to make pads and then we support them in terms of supplying machines, supplying raw material, providing training and ensuring that they're making quality pads and also supporting them in terms of selling the product in the market. On the other hand in 2013 we also started another organization called Aakar social ventures, which is basically the nonprofit arm. And this primarily works on education and awareness around menstrual hygiene, and we have developed a behavioral change and communication program. And this focuses on menstrual hygiene but we cover up sexual education, maternal health, life skills, gender, all of these topics. And these are also focused not only with women, but also with men and boys, cultural, religious leaders and all of that. Few things we follow there, providing this curriculum in the villages is that, first of all there are lots of myths and taboos around menstrual hygiene in India, also across the world. But in India these are related to the culture or the religion of the people. If you say anything against that they think that you have come to talk against religion or the culture and they do not really try to get that point and all they do pretend they listen to you but then don't follow anything. So instead of that, the path we chose is to talk about science. So "what is a menstrual cycle? This cycle can last between 20 to 21 to 35 days. What are the different stages between that? Why is menstrual hygiene important?". In the villages, for men and women, having kids is very very important. But then they do not know that menstrual hygiene and childbirth are connected. For them having kids is important but menstrual hygiene is not important, periods are not important. So when you make that connection, that if a woman is not menstruating they cannot have kids, or if they're not following hygienic practices, they may have complications while having pregnancy and they may die, there we connect those dots with them, and then those dots. Then men start to understand and then they start giving importance to the topic by either giving money to buy products, or even supporting them not to do things which are otherwise imposed by the religion on the culture. So we do it in a different way like talking about science rather than talking about the taboos.

On the other hand, when we talk about solutions, we talk about three things. One is a bucket of choice, then informed choice and freedom of choice. A bucket of choice means that there are different products available in the market which you can use during the periods. Start with cloth. It has been used in India for many many years, hundreds of years. Per se it's not a better product than like any sanitary pads or tampons or anything but then people who cannot afford anything else cloth is a solution. But they need to know what kind of cloth they should use, and how they should wash it, how they should dry it, what type of cloth and all of that. Similarly there are sanitary pads, disposable pads, and compostable pads. Then there is menstrual cup, there are tampons, there are now period panties, there are disks but we do not go to that length at this level because it's a very new product. But we talk about all the solutions and every product has their merits and demerits. Menstrual cup is kind of the best solution in the market now, but then again, it is not good for very young girls, because of the body structure and the vaginal structures and all. Similarly, not many girls are comfortable using it although you can wear it for longer hours and all. It is also about the comfort and similarly for tampons which is a very good product in terms of comfort as you can go swimming with it but then also tampons come with the TSS syndrome. If you insert a tampon and forget about it, you can even die. There is the super absorbent pulp (SAP) in tampons in some cases, although it is banned now in many countries, that also leads to further that because in a woman's vagina that apart from the menstrual liquid there are many other liquids which are there. If you insert highly absorbent tampons, it absorbs all liquids, not only menstrual liquids, and it makes the vagina dry, which basically leads to the TSS syndrome. That's why you should not use tampons for longer hours,

but then again, it is a good solution for people who like swimming or people who are into gymnastics as because of the kind of clothing they're wearing, they cannot use any other product. So what I'm trying to say is that we try to give information which is scientific and unbiased. When we do awareness, we do not promote our own products, we say "these are all the bucket of products. We are giving you right scientific hygienic information, unbiased information to you. You have to make a choice.". Basically that means the informed choice, you have the right information and then from there, you can make a choice which is connected to the last part which is the freedom of choice, which means like, so now you have the freedom to choose any product, any brand you want. We also say that in a single period, which may last between three to seven days on an average, you can use different products. Let's say, if you are traveling, maybe a menstrual cup is the best, maybe at night sanitary pads are the most comfortable people say, maybe if you're going swimming, you can use a tampon,... So it's not necessarily that one has to use only one product, one can use different products also, which is also something which no one really tells in this market now. Whoever says whatever product they just talk about their thing and say that their product is the best, and everything else is shit, especially the people who are now selling the cloth pads and menstrual cups, they talk about this a lot, that they are the only solutions and others should not exist in the market at all. But every product have their market and merits and demerits. Consumers can choose whatever product they want to use or what brand they want to use, or not. And this depends on many factors like their convenience, the comfort, the price points, what price they can afford, and many other socio economic factors, availability and access of the product like x is what products. I can talk about menstrual cups and things like that, if that is not available, there is no point in talking about it. So, similar to that, we do these two things and I think yeah I think you've asked one question, I can keep on talking about the product in detail, but then if you have any other questions that may be different I can come back to that.

Alexandra: Yes, I was actually wondering where you source the raw materials for your pads?.

Jaydeep Mandal: Yeah so, currently we custom make this material like bioplastic which we use as a back layer. It is a mass product now. The core materials still come from Europe only, so from Germany, Italy,... We have a couple of partners there who supply the granules and then we convert it into bioplastic in India, with another partner which makes the plastics for us. For the other materials, we are the first company to come up with a bio superabsorbent (SAP) which is made out of sodium polyelectrolyte and this a chemical polymer which is harmful for the body. Simple example, you must have seen babies wearing diapers and then they have rashes issues. So the core reason behind these rashes are actually this super absorbent polymer. Now, our body, our skin actually has moisture, and then the moisture actually keeps the skin healthy. And if you take out the moisture out of the skin the skin becomes dry. So that's what it does when a baby is wearing or an adult is wearing a diaper. So it is supposed to take out the urine per se. Now, because it is covering a larger part of your body, the entire area which is covered by the diaper, the moisture is being taken out, and that's how the skin becomes dried, gets reddish and then gets irritation and skin infections and many other things. The multinationals will again sell you like creams and powders and many different things on top of that so they will sell one product and then create a market for another three. And that's all going on, although I mentioned that SAP in tampons have been banned 20 years back by US FDA, because it's a product which goes inside the body but super absorbent in diapers and pads are not banned yet, because it is external to the body and so it is not regulated that way, although it is proven that it is harmful. And the same SAP is used in sanitary pads in lower quantities and 60% of women who use commercial sanitary pads, they face the challenge of skin irritations and infections or rashes and all that. Majority of the time they do not talk about

this outside because of the taboo which is there. Secondly, sometimes they do not relate to this, which has happened because of this challenge of superabsorbent because they feel maybe the undergarments are not good or they are not maintaining their own hygiene. So that's how it is happening, so we introduce the first time the bio superabsorbent, which is made from natural sources which does equally good work, only it is a little less absorbent than the multinational pads but it still works absolutely fine. So in a menstrual cycle the liquid which comes out of your body is only about 80 to 90 ML liquid part along with the tissues. So, and then this period happens between let's say three to five days. Even if you take three days in a single day you are not the liquid is not more than 40 ml per se. And then another science is that you should not use sanitary pads or tampons for more than four to six hours, because once the liquid comes out of the body there are chances that it can create bacteria if you use it for longer hours. So connecting that thought, you do not need a sanitary pad, which can be used for more than four to six hours, which absorbs up to 15 ml or 20 ml. So, going by that science and logic and also you. We keep absorbing Say what 30 to 40 ML at a max in pads and which is done absolutely fine by super absorbent. So that's something which we make locally.

We also use the wood pulp for our cotton pads. This is not made in India. As of now it is primarily coming from Canada. There is, again, some activists out there who are talking about the bleaching process. The bleaching process which is used across the world in the hygiene industry is safe. There are no dioxin challenges there. But the dioxin can come out if you're using chemical super absorbent and you are incinerating or burning it. That time dioxin can come out from the super absorbent not from those pile vaccines so there is a misconception there. So we are using that

We have also worked on indigenous material like hyacinth, gagal, banana fiber, jute, to make pads that are being commercialized slowly well in our units in India and also in Africa where we worked extensively in about 8 countries

Alexandra: Okay, so if I understood correctly, your bio absorbent is made of locally available products such as banana fibers and so on?

Jaydeep Mandal: Oh no, those are used as alternatives to wood pulp but the absorbent is made out of cellulose materials that is also locally available. Yes it is made locally.

Alexandra: Okay. For the products that you have to import from Germany and Canada and so on, does it drive the costs up a lot?

Jaydeep Mandal: Um, see, yes. Like bioplastic unfortunately, although the demand is going up in India. No one has taken the plunge of setting up a factory here, but the raw materials are available. I mean I'm seeing the core materials like so generally like bioplastics are made out of corn starch and poly lactic acid is one of the key materials and BPAT is there. These are the core materials to make these things and they are available in India but then someone needs to put in that investment. So some steps have been taken forward. The partner we work with, it's a German organization but then in India. So earlier the granules were not made in India. Now the granules are made in India, but the core materials still come from Germany. So that is one step forward now the granules are also being made here but then like the next step is to make the raw material of the granules also in India, that is something which we are talking to them and then eventually they want to do that, as the scale goes up. And for the wood pulp which comes from US and Canada, I just said we have been working on indigenous materials for many years now. In fact we are the only company which has worked with so many indigenous materials. Now, the step which is needed to commercialize it, is to again put an

investment, because to manufacture this absorbing pulp is also another industry altogether. So we are looking for partners who can put in money to fund that investment so there are some talks going on right now. We have done a data pilot scale and it has worked fine, so that is the challenge of using them. And as soon as we can do that, obviously it will reduce the cost, but also because the pine node which comes from Canada is done in a very very mass scale and it is used for across the globe in the hygiene industry, the costs are also high but then it also at a level which has been managed by the industry so standards. So, our interest used to go for the indigenous materials which is, we are in the part on that I can see that, maybe in the next few years, we should be able to commercialize it. We are running a few units which are on indigenous materials now in eastern part of India like jute and also in Africa with water hyacinth, but then we are trying to have a commercial unit on that to make the pulp.

Alexandra: Okay, that sounds really nice. So maybe it's because I've almost run out of time. Could you perhaps name the three most important barriers to the adoption of your pads, according to you?

Jaydeep Mandal: When I look back like 2013 when we launched compostable pads and we were selling in villages. There was hardly any awareness of compostable or degradable things. But in recent days with the pandemic and the climate change and everything so that thing is getting surfaced and the young generations and the millennials are more prone to using green products. So, that's how, over the years, the interest in using green products as safe products per se is going up. So, it was a big barrier which is slowly getting fixed.

Secondly, like, I think the biggest barrier that we face right now is actually the opposite. Basically people should be aware of the truth in terms of the norms or the regulations or like quality.. So if you go to let's say Amazon in India, almost every company which are selling sanitary pads in Amazon they claim their products as biodegradable organic and all, which are all fake products, they're all Chinese products being sold in India by rebranding it. Now people are not aware of this because they are not researchers and all, and they get into the trap of these companies and even end up buying products at a higher price, although they were all either the same plastic product, or the oxo degradable which are even more dangerous. So that's a challenge which we are facing. Like only about five months back we launched our product in Amazon. Earlier we were only in villages because we felt that there was a larger need there, but then if we can sell our product in commercial space we can add some extra money and we can redeploy the money in the villages for giving free pads and giving education to them. So now every product we sell in Amazon, a portion of the money goes back to the villages where we are giving education and supplies at free cost or affordable cost. And then these pads are also made in village production unit which gives women livelihood to the women in the villages. Now, having said that, we are getting very good response from Amazon but then, because we are not the first comer there as in the last two, three years there have been other companies which have been selling things, although these are all fake product, but then people buy into it so we need to market it more. And then we attract to raise funds for that. We're getting interest from European and also American market Australian markets also so we are eventually going there to sell our product, which is in the process. We are talking to many companies for expansion so the second variable was this, we need to market the product and talk about the product in the right manner with the features so that people are aware of the things which they should know like if they're looking for green pads, what are the thing they should look for ? certifications and all that, but none of these people have certificates. But then, they're just selling it, the marketing plan, without knowing the frauds they are doing.

The third one I would say is always key like so the refunding is something which is always, any company like us are dealing with. So we are trying to raise funds and we are looking for larger

funds now to expand our work internationally in commercial markets like US, Europe and other like that. So as soon as we get funding we can expand. And we're also expanding our market. So apart from sanitary pads, we are also getting into diapers and panty liners and all because. Diapers are polluting much more than sanitary pads. Sanitary pads are used only for four or five days in a month, whereas diapers are used for like between zero to three or four years 24/7 by kids. So that is actually polluting more, but because it's babies, people do not really talk about that much. And that awareness is there even in Indian village you go, you may not find sanitary pads but you will easily find diapers there. So, that's something which we're working on because it's all also based on similar materials, and we have done the prototypes of it so soon we're going to launch it thus expanding our product range. So I would say these are the three major ones like.

Alexandra: Okay, perfect. And maybe just one last question. Since the adoption rate of sanitary pads is extremely low in India, do you still feel that you're in a very competitive market, or that you have a lot of room to grow and there is not so much competition between the different producers?

Jaydeep Mandal: Yeah, so there are two scenarios. If you talk about villages there are lesser competition because as I said, in India about 60% of woman are still not using sanitary pads, so there's a huge market left out so that is also true. But at the same point of time you could talk about the commercial market of the urban markets where actually large number of people are using pads. Now, there's a very tough competition so all multinationals are present and then there are also local players who are there. So there we differentiate ourselves with three things which is what our product stands for which are the three basic pillars. Firstly, the health dimension. So the product we are giving health wise is actually the safest pad, because we are dealing with have harmful chemical , plastic, etc. and also it uses super absorbent polymers which leads to vaginal rashes. But we have a certified product which uses only natural products so it is the safest product in the market. Secondly, the environment angle. We are giving a product which is certified compostable which becomes manure within 90 to 180 days. So that's a green product which is good for the climate and environment and everyone. The third one is giving back. So when we sell a product in the commercial market, a portion of the money is going back to the villages for giving free pads and education there. So these are the three things we are putting across to the consumers, and so far it has been taken well. We are well established at this point but we still need to market more and reach out to more number of girls and women so that they get to know. If you visit today Amazon India and search our brand, you will see that most consumers are giving very positive feedbacks of our product. So they started speaking themselves on that and that's how we are also growing like month on month basis we have grown about 60% in Amazon, which is a great sign but then we need to put in a lot of marketing money to expand this so, yeah, we're looking forward to that.

Alexandra: Well that was a lot of super interesting information. I want to get the nnd pads to Belgium now

Jaydeep Mandal: We would love to do that and if you are planning to visit sometime in India, you can visit us here, too. I can show you our production.

Alexandra: That would be amazing! Thank you so much for your time It was really interesting

Jaydeep Mandal: Thank you have any further questions you can also drop us a mail or we can set up another time also.

Appendix 13: Dipesh Delia – Fabpad 22/06/21

Alexandra: My aim with my master's thesis is to analyze how menstrual health in India could be improved with environmentally friendly menstrual products. I thus want to understand the barriers that environmentally friendly products are facing. So, could please tell me in the first place why you started this company in the first place?

Dipesh Delia: We started Fabpad, because we thought there was a need for a pad which was sustainable, affordable and available for women and girls everywhere in India. The reason why we started Fabpad was for the need of sustainable product. As you're aware, in India, a lot of women do not have access to menstrual hygiene products firstly, and secondly, they use whatever cloth, or unsanitized fabric or makeshift cloth during their period days. So we wanted to create a product that could help them to switch from those unhygienic options to something that they could afford and use and wash and something that could be durable over the period of four years. So that's when we started the company Fabpad.

Alexandra: Okay, and was it hard to launch your business? Were there a lot of barriers to enter the menstrual product industry?

Dipesh Delia: I'll give you some stats. So, only 12% of women in India have access to sanitary napkins in the country, 23 million girls drop out of school when they start menstruating. Now 90% of the users use disposable pads, which actually creates a staggering 113,000 tons of menstrual waste annually, and 90% of the market share is held by P&G and HUN? which manufacture disposable pads. And we always believe like just how COVID hit us, similarly, the impact of global warming and single use plastics is gonna get us one day. So, we wanted to make people switch from disposable pads and other products that they were using, which will makeshift products, any cloth that was available at home to something which was more hygienic, yet affordable. So when you ask me about barriers, obviously, the mentality, for people who are using disposable pads, it's not easy for us to make them switch to a reusable pad, because the convenience of a disposable pad is such. That is one of the barriers. The other issue is that in rural areas it's a stigma, I mean you cannot use your pad and dry it in the open, because your pads are not supposed to be drying in the open, so that's one of the challenges. But there are a lot of organizations that are working on this front and in the last couple of years, there have been a huge awareness that has been created by different organizations. I do see that there has been a huge shift in people's mentality, and we are probably three or four years ahead of time, but by 2025 I believe that, number one, menstrual hygiene products will be available to a lot more people, overall. And secondly, a lot of people will switch to reusable options, because the impact of disposable pads made of plastic is enormous, and a lot of people in urban areas are getting environmentally conscious, especially in the southern region. So I do believe that in a few years, there's going to be a huge change and we are noticing that day to day on our e-commerce sales online.

Alexandra: Okay, are you selling your pads on other distribution channels?

Dipesh Delia: We are only online but we are in talks with having it offline as well, but it's a distribution network that has to be created, and that's our plan for 2022.

Alexandra: And is it hard to create that distribution network?

Dipesh Delia: See, reusable pads have very few players in India right now. I mean, companies that are manufacturing reusable sanitary products are limited to about eight to 10, so no big retail chain, or or shops will want to occupy that shelf space with reusable products, number one. And number two, awareness, and how to use and care is a big part of reusable products. If you are actually getting into distribution setup for this you have to back it with a good sales team that can make people aware of the product and teach them how to use and how to take care of it. I mean, we are about 140 crore people in India. So 1.4 billion people. In my imagination, about 60 70% of India don't know a product like this exists. So to create that awareness is the main thing.

Alexandra: I see. And when you said that you wanted to create a network of distribution channel for 2022 it would then be with smaller retailers or independent shops?

Dipesh Delia: So our target is to be available at every mom and pop's stores like every small stores should have our product, and we are going to back it with enough sales team, so that we can create that kind of awareness so that people know about the product. Even if the sales are slow to begin with, I am sure that our efforts will get us the awareness that we are looking for.

Alexandra: And how do you produce these pads? Do you have a centralized manufacturing unit?

Dipesh Delia: Yes, yes. So basically, our company is by the woman for the woman. It was founded by my wife Sweetie and one of our very close friend and they are the founders. So, it is our mission to keep the production of the pads completely by the woman for the woman. So our production is centralized, we hire semi skilled people, woman from rural areas nearby, state, and we train them for a couple of weeks, and they manufacture the product for us, so it is completely centralized.

Alexandra: Okay, great. And I was also wondering because I read an article which said that reusable pads and sanitary pads are classified as miscellaneous items and not medical items. Is that still true?

Dipesh Delia: Yeah, it is not considered medical items. But the Bureau of Indian standards (BIS) has recently made standards for cloth pads specifically. So if you look that up on Google or something, you will find that they have come up with this list of standards that a manufacturer has to comply with when manufacturing pads.

Alexandra: Okay. And are there other legal aspects that you have to be wary of?

Dipesh Delia: There's no real legal aspects. But our product specifically has been tested by a third party like SGS, and we are approved for anti bacterial properties, anti microbial at pH value, and things like that absorbency, leakproof, ... So all those things have been tested. So basically our emphasis with products is for it to look and feel and function like a disposable pad, yet it is reusable. So one kit lasts for up to four years. So we've spent a lot of time on r&d and we've perfected the product to a certain extent. And it meets all the parameters that are required by the testing agencies.

Alexandra: Nice! And regarding the suppliers, is it easy to find the products you need to produce these pads?

Dipesh Delia: Yes, so it's a multi layer product, so there is a top layer, which comes in contact with the skin. Then there are several layers of fabric inside to absorb, and then there's a layer of leakproof fabric, which we call the technical fabric. So, since we've been into manufacturing of garments before we started this company we have strong tie ups with suppliers all over India. We don't face any issues in procurement of raw materials as such.

Alexandra: Okay. And does the government take some actions to push, environmentally friendly options according to you?

Dipesh Delia: The government as of now is not. So basically, there are no taxes on sanitary products, so that's a major policy by the government. The product becomes more affordable to the menstruators. So that's a benefit that I see. Otherwise, obviously, the government wants a Clean India, right, so this is a part of SWaCH Bharat in Hindi. So this is a part of Clean India, if you're not creating a staggering 113,000 tons of menstrual waste, then you are a part of that movement. But there's no advantage to manufacturers like us by the government, or there's no real push from them, or there's no real push for consumers to consume reusable products, it's just that it's something that's a personal choice.

Alexandra: Olay so there are no subsidies or things like that available to your company?

Dipesh Delia: No there's no subsidies, not yet. Like I said it's a very fairly new segment in India. It came in the US before, and other countries but the reusable products are as early as 2013 in India, so it's just been seven, eight years, and the acceptance of the product has just recently increased. If you would make a graph you'll see a spike coming up from 2020 onwards or 2019 onwards. And it's a lot to do with education. A lot of the population are not that educated in India. So, this product also requires a person to have that sensibility or understanding about the impacts of single use plastic versus the reusable products. We are penetrating, I mean there are several organizations that are doing a great job at distributing the products as well as creating awareness about the product. Slowly but surely we are penetrating into a substantial number of people, and it's just a matter of time. And, again, a long way to go.

Alexandra: Yeah, I can imagine. And do you sell mostly to urban women or do you also reach rural women.

Dipesh Delia: So we have two kinds of setup right. There's one that we tie up with NGOs, non governmental organizations, where we do a joint fundraiser, or a lot of times they have funds. So we subsidize the pads and give it to them. They buy the pads from us, and then they distribute it in the rural areas. That's one way we are operating, and the other way is ecommerce online sales where we are selling on different platforms like Amazon and Flipkart and an our own e commerce website which is under construction.

Alexandra: And if you could name, the three most important barriers to the adoption of Fabpad, what would it be?

Dipesh Delia: The three biggest barriers, would be trying to make people understand about the product, I mean the acceptance of the product. Although we have the scale and the volume, we are not being able to manufacture at that scale or the volume, because the product is not

widely accepted yet. So that's one of the biggest barriers that I've seen. Apart from that, I don't see any other issues. So it's a movement, it's not a commercial thing. It's a movement, wherein you have to create awareness, A and B back it up with sustainable, affordable, good quality pads, so that people can make a decision to actually switch to a product like a reusable pad.

Alexandra: Okay. So for now, would you describe your pad users as being people that are very environmentally conscious?

Dipesh Delia: Absolutely, absolutely. The two reasons why people would use a reusable pad, number one, either it is affordable to them, because it's cheaper in the long run or number two is environmental friendly. So the people who buy Fabpad are definitely I'd say about 80% because they're environmentally friendly and 20% because it works out cheaper in the long run.

Alexandra: Yeah, but I guess that the initial investment is bigger than for disposable pads. I imagine that buying a Fabpad is more expensive than the monthly disposable pads. And do you explain that to women in rural areas, that in the long run it's more advantageous?

Dipesh Delia: Yeah, yeah. So basically, if you do the math, although the upfront cost of Fabpad or similar products is higher, it works out cheaper because, depending on the durability of the product, we claim that Fabpad lasts for up to four years or 100 washes. And if you take the average of eight to 10 pads that needs to be used per cycle, that's about 96 to 100 pads per year, or say 120 pads a year. So, the cost is actually 150% cheaper when you use Fabpads, and we explain this. So we have an on-ground team that goes with the NGOs to the rural areas so we tell them we teach them about the advantages of using Fabpad, because it is more affordable.

Alexandra: Okay. And it's not a question related to Fabpad that much but are menstrual cup gaining as much traction as reusable cloth pads?

Dipesh Delia: Well menstrual cups are slowly getting traction, especially with the Gen Z. But my personal opinion is that for menstrual cups to be adopted in India is going to be a little more challenging than reusable pads, because the entire idea of inserting the cup is not taken very well in India yet. It also requires a lot of awareness. It also requires a lot of, "how to use" and "how to take care of it" and "how it's not harmful for you", etc. So there's a lot of work that's required for menstrual cups to actually penetrate into the market also. But having said that, there is a huge number of people who are also using menstrual cups.

Alexandra: Do you think that the lack of infrastructure represents a barrier for cloth pad users?

Dipesh Delia: I did mention that there is a stigma around drying in the open, and also lack of infrastructure in the sense that, on the move, they might not find a proper space where they can change the pads or wash the pads. So that's definitely a challenge, but for that we have another product that we've recently launched, which is a foldable pad, which looks like a handkerchief. So basically flaps over eight times, and it has a leak proof layer in that. So if that is washed and dried in the open. It's hard to say that it's a pad. A lot of times, just going to pass like a handkerchief or something like that.

Alexandra: Okay, that's very smart,

Dipesh Delia: So there are ways around things, it's just about applying them and then trying your best to make a far reaching impact.

Alexandra: Yeah. And I don't know if that's confidential but how many Fabpads did you sell this year in 2020.

Dipesh Delia: We've just recently started and let me just tell you that it's growing every day. We are seeing good sales. We have some strategic partnerships with NGOs. We also do fundraisers with our partners, and it's a sensitive topic in India, people are sensitive about this entire menstruation. So that is absolutely normal. So we are trying to spread and make people understand that it's just a process of the body, and it's absolutely normal. And we are trying to do our bit to remove the stigma, any stigma that's associated with menstruation, and we do see that people are not rigid, the mentality is changing. It's a good place to be in if you talk to me in commercial sense. Although the market size is very small because the majority is by the big players and the disposable pad manufacturers, it has a great scope.

Alexandra: Maybe one last question. Do you see biodegradable pads as a viable alternative to the disposable ones?

Dipesh Delia: There are a lot of manufacturers that are already selling biodegradable pads. So it's a good option. I mean, people would switch from disposable pads to biodegradable pads and a lot of people have. So I definitely think it's a good option. And maybe in the future you will just have biodegradable pads. Now, what's in a biodegradable pad, no one knows. I mean it's a way of marketing it, it's a way of saying that they are biodegradable. I have not done much research on it, but I believe a lot of new companies in India as well, are already (XXX) and it should be doing well.

Alexandra: Okay, because I was thinking maybe like, if the whole Indian population start using biodegradable pads. It still needs time to biodegrade so like if everyone use biodegradable pads waste will still start accumulating.

Dipesh Delia: I mean I don't know how long it takes for a biodegradable to decompose, but I know that disposable pads can take up to 500 to 800 years, whereas our reusable pads decompose in weeks, two to three weeks. Also, you cut down on the number of pads that are there, because you don't have to keep buying them one kit can last you up to four years. So then, the volume is the game right, I mean, the population of 1.4 billion people, no matter what pad you're using if you're disposing it every day you're still creating that waste then has to decompose somewhere.

Alexandra: Okay. I think that was all the questions I had. Thank you so much for taking the time to interview with me, it's really really nice.

Dipesh Delia: There is one last thing, we have a project called Pad Ma, which means mother of pads. They are the Superwoman of Fabpad and they are an integral part of our organization. So like I mentioned, the stitching and cross stitching and completing of the Fabpad are done by them selling and distributing we are planning to do by women. So, spreading awareness to the communities that they work with, is also done by women, so it is a woman centric organization. And we also donate one pack for every 25 pads sold to economically disadvantaged girls. So that's our way of giving back to the society.

Alexandra: Okay, wow, that's really nice. But, do they produce the pads entirely themselves or do they have the help of machines as well?

Dipesh Delia: No, no, that's all machine made. It's all sewing machines right, so you need an operator. So every operator is a woman.

Alexandra: Okay. All right, thank you very very much, and I hope you will have a nice evenin

Appendix 14: Sujata Pawar – Avni 06/07/21

Alexandra: So thank you so much for taking the time to meet with me super nice. And so my aim was my master thesis is to analyze how menstrual health in India could be improved with environmentally friendly menstrual products, and therefore I went to analyze some like best case practices and analyze the barriers to the adoption of these products and so on. So maybe to begin, could you tell me more about what Avnei does.

Sujata Pawar: Yeah. So, first of all I would like to congratulate you for selecting this topic because, you know, we need a little more work to be done a lot of more work to be done on this topic so congratulations on that. And I would want to hear your story also maybe later on, of how did you get to this topic. So AdaBoost Agni basically started about a year back exactly or your back, we started last year in August, so it's July now so it's almost, we are completing a year. It started basically from my personal experience of using certain products that are available in the Indian market. And the fact that I was not really very happy because rashes irritation, this is very common, and I am a pharmaceutical graduate, by qualification. So I was able to make a lot of sense of the research that was going on globally around the kind of chemicals and plastic that are used in general disposable pads. So when both of these points together i i started evaluating certain other products and certain other alternatives that are available in the Indian market and I landed off us on using cloth pads, and that is an I like the experience of using them. So that is how the journey of me began. So we developed a clock back, which has an anti microbial technology embedded and we selected specific fabrics to make it stain free, Because that is a very important problem with respect to prospects, and also of course, giving all the benefits that one would expect out of your strategy. So this is our flagship product and when we started with the beta with a range of menstrual products around the eco friendly categories. And along with this what we also do is run a bunch of education campaigns, and that is something that we are just starting out, education campaigns in terms of, you know, having we have a board of experts on our panel, which are doctors gynecologists pediatrician who help us reach out to individuals and we conduct workshops with them. For and talk about. One is about general menstrual health. If we talk to parents very young parents we talk about, how do you talk to your girl about periods, first, first period conversation. So we do a lot of educational activities across the age spectrum of menstruating women, tackling the problems that they face during that phase of their life. So these are the two key activities that we do without me at the moment, it's more about products and educational activities.

Alexandra: Okay, nice. And was it hard to launch your business. Were there a lot of barriers to the entry of avenue into the market.

Sujata Pawar: I would not say there were a lot of barriers because one important thing is access to products, or even this kind of education material is so low that the market is huge for any new entrants if we were to even pretend brands want to enter after me. Even that they are going to face any barrier to entry because the market is massive.

Alexandra: Didn't catch the last phrase, I think, can you hear me. I can hear you. Okay, I didn't hear the last phrase he said the last sentence.

Sujata Pawar: The last sentence that I said is, with respect to the access. There is a lot of untapped market that we have. If you just look at the statistics and facts and numbers close to 18 to 20% of menstruating women in India are using any kind of sanitary product, which is a small, it's 10 that says 20% So the rest 80% is still untapped. We have a huge market to reach out with our products. And if we and by and large, these 80% of women at the moment are using cloth, for all practical purposes, but something makes generally available at their home. So we have very big opportunity to reach out to them and take on cloth pads to them so that they don't have to shift to a completely different product they it's easy for them to upgrade from one cloth to a modern day cloth pad.

Alexandra: Yeah. Okay. And is it hard to compete against the big multinationals.

Sujata Pawar: So it is difficult in terms of, you know, reaching out to audiences, But competition wise if you really ask me I think they are in a, in a much different game than what we are into the kind of audiences that we are attracting at the moment are mostly eco enthusiasts, or girls and women who want to shift to alternate products, who want to shift to menstrual cups, want to shift the cloth pads themselves, or there are women who are facing some issues like rashes irritation already, and they are looking out for an alternative solution. So, the customer base is sitting already sitting in, in those baskets where these big brands are already promoting their products. It's just that for a lack of alternative, they are using those products so once we present the alternative to them, it's, it's easy. The only issue that we face is about awareness, we have to talk a lot about the products for them to understand them then accept the products. So we've added, otherwise I'm not I, we are we are competing into different markets completely.

Alexandra: So, can you the biggest barrier to the adoption of the product, if I have your product is the awareness, because the lack of awareness of how it works or what kind of awareness, do you have to do.

Sujata Pawar: Radical forgiveness a product like this exists in the first place, because most of the countries received at least in India there are just two or three major brands that are available with pasty free, big, giant brands like this. Most of the women are aware of these brands. It's just that they are not aware of the alternative products that are available in the market, that there is a cloth pad that there is something called as a modern cloth pad, who just functions like regular sanitary pads or that there is a tampon available that there is a menstrual cup available. That is one big chunk of population, the next bunch is where people are aware, they know that such products exist, but trying those products is a big challenge to them it's maybe a psychological barrier or maybe financial constraints, not from somebody to buy a menstrual cup was \$10 or something is not that easy. So then once you are aware of the product, then there are other barriers that come into play.

Alexandra: Okay, ideas, which barriers are these, which come into play afterwards.

Sujata Pawar: So one is, if you're aware of the product, you don't know how to use it, you don't know the right way to use it, you don't have access to those products, not a lot of tier two cities or tier three cities in the country they like lower than urban population, they don't have access to products like these in retail stores. The products haven't reached there, or they don't have access to online shopping for obvious reasons. So even if they're going away, they're not able to buy the product, if they are able to buy them but these products are very, very costly. So

when I talk about a cloth pad. I'll set a backhoe for cloth pads and something like five to \$6, which is a big investment for a sanitary product right away. When, so. So, that is the next challenge. So these are the two main challenges I would say access and write information to try out the product.

Alexandra: Okay. And you are currently commercializing your, your cloth in urban areas, and are you planning on trying to reach rural areas as well, or. Yeah,

Sujata Pawar: so we have a kind of a hybrid model, we I can say, one aspect to it is that we are directly reaching over open women, direct to consumers via marketing channels social media. The other bit is reaching out to rural women via alternate channels, and they can be via government institutions that is via nonprofit organizations who do a lot of donations, or reaching out to corporates to do these donations via them. So it is mostly a bit. We are not directly doing donations in rural areas. We are reaching out via some business partner, who takes care of the expenses for these products and they themselves manage the donation. And that is how we are reaching the rural areas.

Alexandra: Okay, so at the moment, small scale enterprises need the help of governments and NGOs to reach rural areas. Yes, it can be. Yeah. And how do you produce these beds.

Sujata Pawar: All are sourced in bulk. Most of them are from India only. And then we manufacture these bags, I would say they are actually used by women in self help groups. So because. So, we are able to manage that we have quite a few self help books. I say there are women who no stitching at all. So we have improved them to do the stitching. And so part of the process is happens in the factory where they cut the fabric specifically in those shapes, and then we provide these fabrics to the women so that they stitch the final pad and then they share it with us.

Alexandra: Okay. And do you have several cell phone groups that are spread out.

Sujata Pawar: We work with three at the moment for the kind of volumes that we are working on. We have three that's how we basically started with one then now in a year's time we're already at three. So as we build up the volume of the product going on we will definitely adding more self help groups.

Alexandra: Okay. And did you have to do a lot of training for them and do you have to do like a lot of follow up for the quality and so on with these help self help groups.

Sujata Pawar: Yeah so training was essential in the beginning, because all the three sensor groups that we've been working they have, they did not make pads. Before that, it did not have any experience of making sanitary pads. They made some other products so the new stitching, but we had to take train them on exactly how do you stitch across what layers and with respect to the quality, half cost detail, we have to make sure that the stitching quality is at par. But the fabrics are provided from our end only. So, with respect to the fabric, the quality control is already taken care of and they just get the fabrics and then we have to look at the stitching is done properly or not.

Alexandra: Okay. And I saw in an article that you worked in collaboration with a Danish firm to elaborate the products. How did that work.

Sujata Pawar: So, what we do, right, we have a antimicrobial technology embedded so this is a technical collaboration that we have utilized their technology to make our pet antimicrobial.

Alexandra: Okay. And did you have to buy that technology or was it.

Sujata Pawar: It's, it's not, it's like a license kind of sort of an arrangement where we've taken their brand name, and incorporated in our brand name so it's it's a picture, it's what I would say it's a partnership where we're using their brand name. That actually doesn't, you know, we don't have to then pay for anything else.

Alexandra: Okay, that's, that's cool. And then that's that fabric it dries very fast or.

Sujata Pawar: Yeah, so these are technical, texts, mostly racing Indian brands, A lot of them use cotton real cotton. So the reason that it is available here, but there are two main challenges of using cotton one is, it retains teens bloodstains, and the second being, it takes a lot of time to dry. Not everybody because we're talking about a salutary factor. Not everybody is only able to try the guys out in sun, because that lack of access to sunlight, also in some places, but then because it's a sanitary product, putting it out in the sun is a little challenge for somebody. So, these two main challenges, we were facing with cotton fabrics so that's why we've created fused blended tropics, to help us embed the anti microbial technology to make them stain proof, and then that they need little water less water to wash and they dry quickly as well.

Alexandra: Okay, and is, are these fabrics than more expensive than than cotton. Naturally then activity. Oh really. Well, okay, yeah.

Sujata Pawar: So we're saving a little money also there. Because cotton if you really ask me is up, it's considered as a premium kind of fabric and if you want one the cotton to absorb and retain a lot of moisture, you need to treat it in a particular way so that it becomes absorbent. Now when we talk about this level of treatment, it becomes very costly. So if we did fabrics, PLA polyester and cotton blends, they're actually cheaper and give you better results in terms of the efficacy that you need out.

Alexandra: Okay, yeah, because actually I was looking at all the pads and even in Belgium because I wanted to buy some and I would really want to buy the Ave one like they seem to be very than the other ones.

Sujata Pawar: Looking forward to reaching out to other countries as well we just sent out into Singapore. Oh yeah, yeah. What was my other questions. Um, and so your distribution channels are online, or online. And then the main channel channels. So are you continue. Go ahead.

Alexandra: No, I was just gonna ask you if it was online or if you had also like brick and mortar shops where you could you sold them.

Sujata Pawar: So our major channel of sales is retail is online at the moment, we did start getting into brick and mortar, last year, around November December, we made some inroads, but then the situation of COVID COVID protection really wasn't and brick and mortar the entire business model is a little lacks right now, so we couldn't really feel that up, but yeah, we have an intention of getting into it as soon as they open up. Because sanitary pads as a product, and this scrub pad is not the only product we have. We also have conscious disposable pads which is like organic cotton disposable pads, we also have menstrual cups. So, putting if we if I talk about the entire range. We have a lot of scope in the retail market as well miss out on that. It's just that we are waiting for the situation to improve and then we'll get there.

Alexandra: Yeah. And so you're also producing menstrual cups.

Sujata Pawar: Yeah so menstrual cups is something menstrual cups and the organic disposable cotton pads is something that we are not manufacturing ourselves, we are getting manufactured from a third party Mr specifications. So, and both of them are again manufactured in India.

Alexandra: Okay. And the menstrual cup. Can you source the raw materials of menstrual cups in India, or does

Sujata Pawar: This raw materials are all sourced from India, when was the silicon, the silicon that we have one thing is not only available in India. So exposing the raw materials from the European countries only, then making the copy.

Alexandra: Okay, and, and do you see a lot of people trying menstrual cups, or is it a bit harder to

Sujata Pawar: To make. It's, it's, I would say, a lot of people actually want to use the menstrual cup, big it's a big rage, or in terms of a very aspirational appealing product because it gives you a lot of convenience and then more changing of pads and all you don't feel the bag outside. By having said that, A lot of women are facing troubles trying them out for the first time. One mean there's a lot of psychological barrier of inserting something like this and in a country like India, there are a lot of taboos related to young girls or unmarried girls, inserting products into their vagina. This is not a really very comfortable topic. But having said that in urban areas we see a lot of women going for a lot of educated women who have traveled the world and so when these barriers are not but they of course interpenetration is, I won't say will ever happen as big as it is to sanitary pads. Always remain the main product widely available and accepted product, at least in the Indian market.

Alexandra: Okay. And do you think that multinationals will start developing cloth and menstrual cups and more eco friendly alternatives or they will snap on producing a disposable plastic base beds.

Sujata Pawar: See now it's gone so this question I will actually have to think like a multinational company and since I've worked in multinationals before. It does not make a lot of business sense for multinational companies to enter into products like these unless there is huge volumes. So volumes one and the second the cost of manufacturing is less. So unless both these two situations are comfortable for them. It is difficult for them to enter into markets, and

these products cloth pads and menstrual cups. There is a big amount of reusability into a product is not a very frequent purchase product commercially doesn't make sense for large corporations to enter into enter into this so it definitely can happen, it's not that it's not a possibility it can definitely happen. The only thing is volumes have to reach that level. And we actually see some big pharmaceutical companies so I know of a couple of pharmaceutical companies who are very good with women's health products. They have menstrual cups, as a part of their portfolio. So, what I see is slowly and steadily brands are trying to get into it. But first, not in a very big way, it's just a portfolio product that is just there.

Alexandra: And do you think that small scale enterprises could truly help increase the adoption of eco friendly menstrual products.

Sujata Pawar: Yes, that is actually what is happening. And just like any other country it's the smallest way enterprises only who are actually leading this wave of eco friendly products across sectors, it's not just menstrual products but if you ask me baby products or skincare products or any anything else that you use in any kind of an eco friendly product in India we see a lot of small scale enterprises emerging, and they're doing really well. Okay,

Alexandra: Nice. I'm checking if I have other questions and to think of covered, or maybe just how, how do you raise awareness of your about your products. Do you do that on your social networks or.

Sujata Pawar: Yeah so, raising awareness we try a bunch of things one is social media because it's really very powerful we can put out videos, so we do a lot of videos demonstration videos explanatory videos about why such products are essential. And we do them on YouTube, Instagram, Facebook, there are a lot of communities in build communities on Facebook so we approached them to talk about products like these. Then there are a lot of women. I would say women who are doing certain businesses from their homeland businesses. So, we also can approach them because they are adept at selling products. And because this is a product, it is majorly used by women, it's easy for them to sell. And then the biggest activity remains PR, which is basically taking help of media and doing a lot of press releases or doing guest articles on media platforms. So that is something that we are trying to do at the, at our level, and I don't I don't see any cloth, any other brand, which has a cloth pad and talking about the cloth pads so in such a big way in the media, at least in the Indian market. So that is one way that we are trying to ride and maybe emerge as a leader something in that sector.

Alexandra: Okay. Thank you. I think I've, I've covered all my questions, so if you have any don't hesitate to shoot.

Sujata Pawar: So I, I just have a couple of questions, how did you, You know, arrived at this topic for your theses.

Alexandra: Well, I also realize that the menstruation is a source of a lot of environmental problems here as well, I mean the people who are also still using mostly sanitary pads and plastic based products. And I recently did the switch to menstrual cup. But then it's not really, I don't know, I was actually supposed to go to India for my exchange semester this year, I was supposed to go to Calcutta. And so I thought it would be nice to kind of link the two and to be able to do interviews when while I'm there, I thought it was nice to link the environmental aspect

but also the social aspect because there's a lot of taboos around menstruation India and it's, I think more of an issue because, like, the center beds cannot reach rural areas and so on so it was really I wanted to be able to link both social and environmental aspects, but then exchange got cancelled, so I'm trying to reach, reach out to people through through LinkedIn and so on. So when when is this going to get completed your masters. It's, I have to send it in, in mid August and then I defended in September. So in India, we're able to manage talking to any other time. Yeah, I talked to Sethi. Yeah, I car innovation. Yes. Fab bed. I think that's all for the companies and then I talked to some NGOs and and people they're active in the menstrual health area. Okay,

Sujata Pawar: So I thought I could give you the kind of information that you were seeking,

Alexandra: Yes yes really was really, really insightful, so thank you, thank you very much. Thank you for connecting it was a pleasure talking. Yes, it was really nice. Thank you have a nice day. Yeah, same for you. Right, bye.

Appendix 15: Kathy Walking Walking - Eco-Femme 16/07/21

Alexandra: So my aim was with my master's thesis is to is to analyze how menstrual health in India can be improved with environmentally friendly menstrual products, and especially by social enterprises, and therefore I want to present some case studies about companies social enterprises that are already doing it. And I want to analyze the barriers that you're facing and that the adoption of your products are facing as well. So I read a bit about which you started in 2010 is that right? Yeah, yeah. And was it hard.

Kathy Walking: Slowly yeah but yeah we say 2010

Alexandra: Okay and was it hard to launch your business? Did you face a lot of barriers?

Kathy Walking: You know, nobody had really commercialized cloth pads in India. We were the first to really do that. There was another small organization that was sort of trying to promote cloth for menstruation, but it was not even known as an option, I would say. And so yeah, we faced obstacles. I think the main thing was that, the government had launched a national scheme where they were promoting and freely distributing disposable pads to girls, and there was this sort of bombardment of messaging that you know a modern woman should use a disposable napkin and on TV, there was a very aggressive advertising and so you know there was a big push to kind of convert the country to disposables. And so when we would come in with this cloth idea we definitely had pushback. But it was mixed, you know, there were certainly people who were certainly curious about it as an approach and I think once they saw the product and understood the rationale for it, they were open. But at face value, I would say there was a basic hesitation about cloth. For starters, because the perception that it's dirty and it's unhygienic. Then there was a basic lack of understanding of what a washable cloth pad is and how we offered design elements that you know could enhance the experience of using cloth. And then I think there was just a whole sort of, you know, pushback from people who had really embraced the whole disposable narrative, especially organizations grassroots who were, you know, very much interested for example in buying the machine that Muruganantham

had created to include the sort of local livelihood and get women producing napkins and of course government was saying “napkins napkins” so there was a lot of skepticism about why we’re sort of trying to turn the clock back and make women go back to this primitive practice of using cloth. So that was really strong in the beginning and there was, I’d say, quite a lot of resistance. But you know, it wasn’t universal. There was some resistance, there was some openness and we sort of realized pretty early on that if we went with the low hanging fruit and didn’t try to bang on doors that were tightly shut and worked with people who were receptive and open we could sort of slowly move things. And we weren’t in a hurry, we weren’t sort of trying to rapidly build a business or anything. I think, the way it kind of structured itself, was that we had this sort of hybrid social enterprise idea and this kind of commercial and non commercial side. On the commercial side, we found that internationally, it was kind of easier actually to sell pads than it was in India. So we just worked with the customers that were open, which were more in the West. But in an odd way, that also fed back into building the viability of the product in India because when people understood this wasn’t just a product we were trying to, you know force onto Indian women but it was actually a product that had international acceptance and it wasn’t just some kooky idea that a stupid foreign is sort of trying to impose on Indian women. So we just pursued what was easy and natural and as the market grew internationally, slowly we had adopters in India. This took a long time, but gradually it started to pick up pace and what we found was that people would approach us eventually once they had a positive experience with the product commercially. Often we had people reaching out individually and saying “look we love what you’re doing, how can I help?”. So this was how our ambassador sort of concept developed. And this really worked very well because these became really volunteer marketers; people who would speak on behalf of cloth. And then, you know, there were more and more organizations that started to understand the problem in India of sanitary waste and disposal, and I’d say more environment at the beginning. So there were organizations that started to pick this theme up like “Green the red” was one but there were many with various names and incarnations which were basically trying to promote the idea of sustainable menstruation, cups and cloth pads and they were not particularly brand affiliated at all. They were just organizations interested in getting the conversation about sustainability out there in the world and in India in particular. And so they also obviously helped our cause as well. So I would say that in the beginning it was really tough. But we were patient and we weren’t in a hurry and gradually it picked up and now I think at least people know about sanitary waste problems and they understand why reusables are important to think about. And it’s a mission that’s really overtaken the brand I would say. So today our work is a lot easier, we don’t have to sound like weird voices in the wilderness speaking about something that nobody really thought about before. There is much more visibility today, so that’s it’s a bit how the trend has changed over the years,

Alexandra: And from what I’ve read, in rural areas, many women still use the cloth, so isn’t it easier in rural areas to get the cloth pad adopted?

Kathy Walking: Yeah, yeah, so that’s a good observation and I think that’s true. I would say that we find less resistance and hesitation among rural and low income women than we do in urban and I think that’s mainly because of the cultural perception of purity, which I think is quite an entrenched mindset, especially in more upper class cast women who have been really steeped in this ideas that menstrual blood is somehow an impurity. And so, put bluntly, they’re not as comfortable with the idea of getting blood on their hands, whereas, in rural areas, I think there’s not such a pushback around the idea of menstrual blood. I mean that idea is still

prevalent, I can't say it doesn't exist, women do still have the belief that menstrual blood is impure. But it's not difficult to kind of break that idea down, it takes effort, but not impossible. So there is this sort of mindset of impurity, but also I think quite frankly, one of the biggest hesitations is this idea of the drudgery of washing, that it's a lot of work and we're really busy, we don't have time to scrub a cloth pad. This is a common pushback from urban women, whereas in rural areas, it's like, you know they're not that averse to hard work. So even if it's not hard work, the perception is gonna be hard work, and they're like "whatever we anyway wash things and all that" so they're more willing to give it a go at least once they understand what the concept is. And, especially, what the advantages are, and I think there's really obviously three, I mean environment is one but I think even more compelling for rural women, it's the health and economic advantages of using a reusable product. So, you know, they understand that. Of course when you explain it, when we did a price analysis they can see that reusable product will save them money. And secondly, when we talk about the ingredients of disposable pads, when they understand the plastics and also the chemicals which are in it, it all makes sense because many of them are getting rashes and allergic reactions. So they're kind of like joining the dots and going "this is why" and they're actually quite happy to choose and try a cloth pad. But it takes that time and that conversation to sort of convey all those information points.

Alexandra: Is the price of reusable cloth pads are a barrier for rural women?

Kathy Walking: Yeah, so this was a big challenge also in the beginning because, in a way, what we did with rural women and communities is that we just started having a lot of focus groups and conversations to understand their practices, what they were using, why they were using it, any obstacles they face what they'd liked about cloth or disposable pads,... So we spend a lot of time, and we still do when we work with new communities or partner with organizations, we really try to encourage them to take the time to understand these ground realities before just coming in with the cloth pad thing. And anyway, I think you've probably realized we've always advocate for informed choice with never just pushing product. So we sort of realized that the willingness to pay was really going to be something to figure out, and that even the commercially priced pads would be too expensive. And, you know, that would be a barrier. But the real challenge for us was, how do we price them, and what sort of financial model, you know? Do we look at things like easy monthly installments? Do we reduce the price? Do we subsidize? ... How do we do it? And in the end we settled on a sort of subsidy model. And social enterprise model enabled us to direct funds from our commercial profits towards offering cloth pads at a subsidized rate. And then the big question was, you know, how much to subsidize? And you know, we did a lot of trials and honestly we now even have decided to keep it within a range so it's somewhere between say 60 to about 100 rupees. The cost price for us is about 100 rupees so we sell at the low cost price, which means we are subsidizing. But it's surprising that women were willing to pay. We've wanted to make cloth pads an affordable and accessible option and not have women blocked by the price. So it's something that we felt was worth it, and we haven't been able to really figure out a better way of doing it. And then of course, we find organizations that do fundraise and do offer those sort of subsidies themselves, but at the end of the day, we do see that women are willing to pay approximately what they would spend on disposables over say one year. Now, of course with the cloth pad, you can use them another year or two or three, but because their perception is still like " Oh, maybe it'll only last me a year", they pretty much trust that it will last them up to that. If you price it beyond a year investment in what disposables would cost, they're not so

sure it is worth it for them. So this is sort of what we learned and got out over a lot of experimenting, I would say.

Alexandra: Okay, interesting! And how do you produce these pads? Do you have a centralized or decentralized model?

Kathy Walking: Well it stays centralized you could say. We work with the producers and not ecofemme employees. We work with four local production units which are more or less sort of NGOs or micro enterprises, women producers, and they're organized so they do produce together in a single location, it's not like they take the materials home and stitch it home for us, that's important and also it's efficient to do it like that and it also ensures a certain kind of quality management. It's easier to make sure that the pads are produced in a clean environment. But at the end of the day we contract the production through these local units so we've fixed a per piece rate and commissioned certain number of pads per month so we have these relationships with these producer units.

Alexandra: Okay. So are these NGOs producing your pads decentralized models which hire women from low income communities and so on?

Kathy Walking: Yeah, yeah, I mean it's similar like there's four of them and I've got profiles about two of them on the website I'll just direct you where you can have a look at some of these stories a little bit more. And the two others I think their profile are actually not NGOs. But the one that is an NGO, "Village action group" it's a small local enterprise actually. And similarly I think "Clothing connections" is another one, you know. So yeah, you can read a bit more about it, it's an interesting model. We get approached a lot, you know, about production and "can we train people in how to do it" but here the problem is usually economic because, as I've just explained to you, if the willingness to pay, is less than the cost price, it's loss making. And then, it's not really viable as an income generating project so you know Ecofemme can do it because we have other revenue streams from our commercial pads but honestly for a lot of, you know, grassroots NGOs who are also looking at combining this sort of cloth pad idea with a livelihood, it is very difficult to make it work financially. They actually had to figure out a sort of way to supplement the income and I explain that also if you look on our "In Action" page, There's a section called "Pads for sisters" and if you scroll down there's a section called "Producing a cotton pad", and you can read more about it there on why it's problematic, why it's difficult,...

Alexandra: Okay, nice, I'll have a look at it after the call. And so you also commercialize your pads internationally on e-commerce platforms?

Kathy Walking: Yeah. Um, we have our own online shop and we wholesale directly to international retailers, So they buy it from us, we ship to them and then they do the marketing and sales on their end.

Alexandra: Okay. And then I saw that you do a lot of awareness and education about menstrual health is it essential to do it as a social enterprise or can social enterprise succeed without doing it?

Kathy Walking: Well I think it depends on what the social enterprise is working on but if you're working in menstruation I actually believe it's pretty essential. Because I think there is it this

huge lack of knowledge, I mean really India population is not well educated about menstruation, so the lack of understanding and knowledge about what's happening in the body is staggering actually, especially women's bodies and women's health, it's a big black hole. So I do think it's really really critical and certainly when they see how women are responding to this kind of education you know you really have a feeling that you're providing some really long overdue information. Like they even don't necessarily understand the link between fertility and menstruation, so this has huge implications. So I do think it belongs together anyway. But I think in particular with a cloth pad because it's not an acknowledged product it's still new. I don't think you can, you almost can't sell a cloth pad unless you have that kind of education as well, and I'm a really big believer as I said earlier in product choice and, in fact product analysis is one of the core strategies and they're also on our "In Action" page at the bottom of that I did have a couple of videos there that actually talked about how do you do this product analysis because I think this is really critical to helping women understand why would they even choose a cloth pad. You know what are the issues with disposable heads. Without product analysis, it's like the default setting is to buy a disposable pad, and honestly the adoption of disposables these days is really high, like, you know, 10 years ago everyone talked about 12% of women using disposables but we know now it's well over 70% of urban women using disposables then about 50 percent of women in rural areas you know women from low income backgrounds. So that's massive adoption in a really short space of time, massive, and it's probably even higher, quite frankly, I mean it's so difficult to really know precisely, but this is what one fairly reliable study has indicated. So I guess you've got key data around menstrual health?

Alexandra: Yeah I've read quite a bit on it, but the websites are saying different things so I have to find a reliable source.

Kathy Walking: Menstrual health alliance of India is pretty trustworthy. I think they're a good clearinghouse for all this kind of menstrual related initiatives in India and they've got their finger on the pulse so I would really try to do that.

Alexandra: Okay I'll do that, thank you! And you talk about informed choice and doing a product analysis. Do you consider also selling other reusable or eco-friendly products such as the menstrual cup?

Kathy Walking: Yeah we do. In fact, when we do product analysis we're showing products like a menstrual cup, like period panties,... we include these products in product analysis and menstrual cups, we actually have a tie up with a company so we can offer subsidized menstrual cups if women choose to use it. Still very few women who were choosing a menstrual cup there's that fear about insertion is remains, really a barrier but it's an available option and we offer that option. And period panties too for that matter. And also when we do, we do a lot of training of other organizations too so we often provide them with product kits so they can do this sort of product analysis in their communities and we always include all these products as well, but sometimes they have to source it directly, if there is an interest in these products they'll have to sort of get those products from the suppliers. But cups and cloth pads, we can often provide

Alexandra: And you do these awareness and education session mostly with school girls or other communities as well.

Kathy Walking: Both women and school girls so in fact if you look at the data in our “In Action” page. There's a thing called an interactive partner. And there, it's not even fully comprehensive, but it gives you a fair idea you see the green pads icons are “Pads with sisters” partners so these are essentially women where we work with grassroots partners, and have a more commercial like subsidized pad scheme offering, and the pink pad icons are our “Pad for pad” partners, and that's where we do the free pad gifting which is sponsored by our international customers. And each of those pads tell the story. So you can kind of click on them and, you know, you'll get a little backstory sometimes, which is often told in the partner's own words about what's the situation they're working in. So, we you know we're quite customizing especially with “Pads for sisters”. Working modalities can be quite different, I mean we have a fairly consistent process but the way organizations work can be quite different. So we really try to understand what their sort of educational capacity and distribution modalities are and have to work with them to figure out an approach “Pad for pad” is a bit more consistent and we have, you know, guides, guidelines and criteria for partners and things like that.

Alexandra: Okay. And do you think social enterprises can improve Menstrual Health and Hygiene in India by expanding the access to eco friendly period products?

Kathy Walking: Yes. I mean social enterprise models all different right, so in my case I comprehensively understand all the different, you know, incarnations of social enterprise in menstrual health but I think that, for example, this sort of model of, you know, affluent users pay and low income, users get subsidies, I think that really works quite well In India. It could probably even work in the West where period poverty is becoming more and more recognized as a phenomenon. I think menstruation and menstrual interventions, lend themselves quite well to social enterprise model. Depends I think on the bandwidth and the values and the interest of the founders and the organization's of just how far in they want to go like where do they want to make a difference. A lot of people are just trying to sort of do the pad gifting sort of idea and just focus on education, you've got to I think try to either have another stream of income, which a lot of people access through you know CSR funding or find donors. So you know, there are ways of doing it without taking it all on your own neck like we've really I think bitten off quite a lot as Ecofemme to try and run both a business and a nonprofit at the same time. That's challenging, you know, they're two different animals and have two very different sorts of, thinking, approaches and to try to bring them together is not super easy but rich and interesting if you can.

Alexandra: Yes, I can imagine. So from what I've read in the paper you sent me, social enterprises. which are focusing only on rural markets will have a difficult time to be financially viable right?

Kathy Walking: Yeah. Yeah.

Alexandra: Okay. And are there other barriers that you think of that you are facing and which you haven't mentioned yet?

Kathy Walking: Not off the top of my head. I think one is just the inherent barriers around the product which we've talked about, and the other I think are the market dynamics which are connected to that. But essentially that, getting into sort of manufacturing can typically end up being loss making and how to make that work is the question and a challenge. They're the

main obstacles. I mean, of course I think you can say also, part of it is the menstrual taboo which I think plays more into why the product is, such a sort of slow uptake kind of product. I always say one of my favorite quote is “cloth pads is not a pickle”, you know, like a pickle you can put it on the shop shelf and people know and they'll buy it but cloth pads we're not there yet. It needs that conversation. That requires an investment of time and effort and this is money in a way too you know. Someone who can do this, spend this time and be patient with this process... And this is a little bit, anti business. Normally fast moving which is why pads are such a nice idea for a company if you need them every month, then you know it's sort of like it's a fast moving consumer goods and it has those sort of dynamics around it whereas cloth pads, they're slow moving and then once someone's got their cloth pads they don't need them again for a while so the efforts on the marketing side, I think are enormous and largely underestimated, just what it takes to have those conversations, again and again and again and again overcome the doubts and the hesitations and this is work, this is a big piece of work.

Alexandra: Okay. I think I've covered most of my question, thank you very much for your time!

Kathy Walking: Good. Look, feel free to reach out again if you have further questions, and yeah thanks for checking out the topic and I wish you all the best in your project.

Alexandra: Thank you and thank you so much for the very interesting conversation and I will send you the research one some once I'm done

Kathy Walking: Please do. Thanks for reaching out and take care. Bye.

UNIVERSITÉ CATHOLIQUE DE LOUVAIN
Louvain School of Management

Place des Doyens, 1 bte L2.01.01, 1348 Louvain-la-Neuve
Boulevard Emile Devreux 6, 6000 Charleroi, Belgique
Chaussée de Binche 151, 7000 Mons, Belgique

www.uclouvain.be/lsm