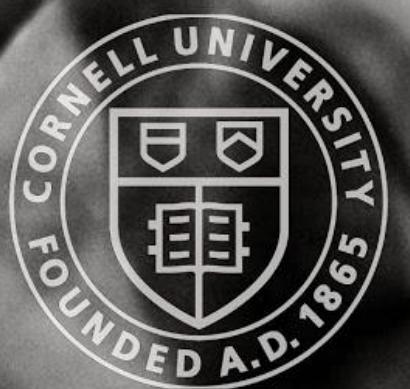


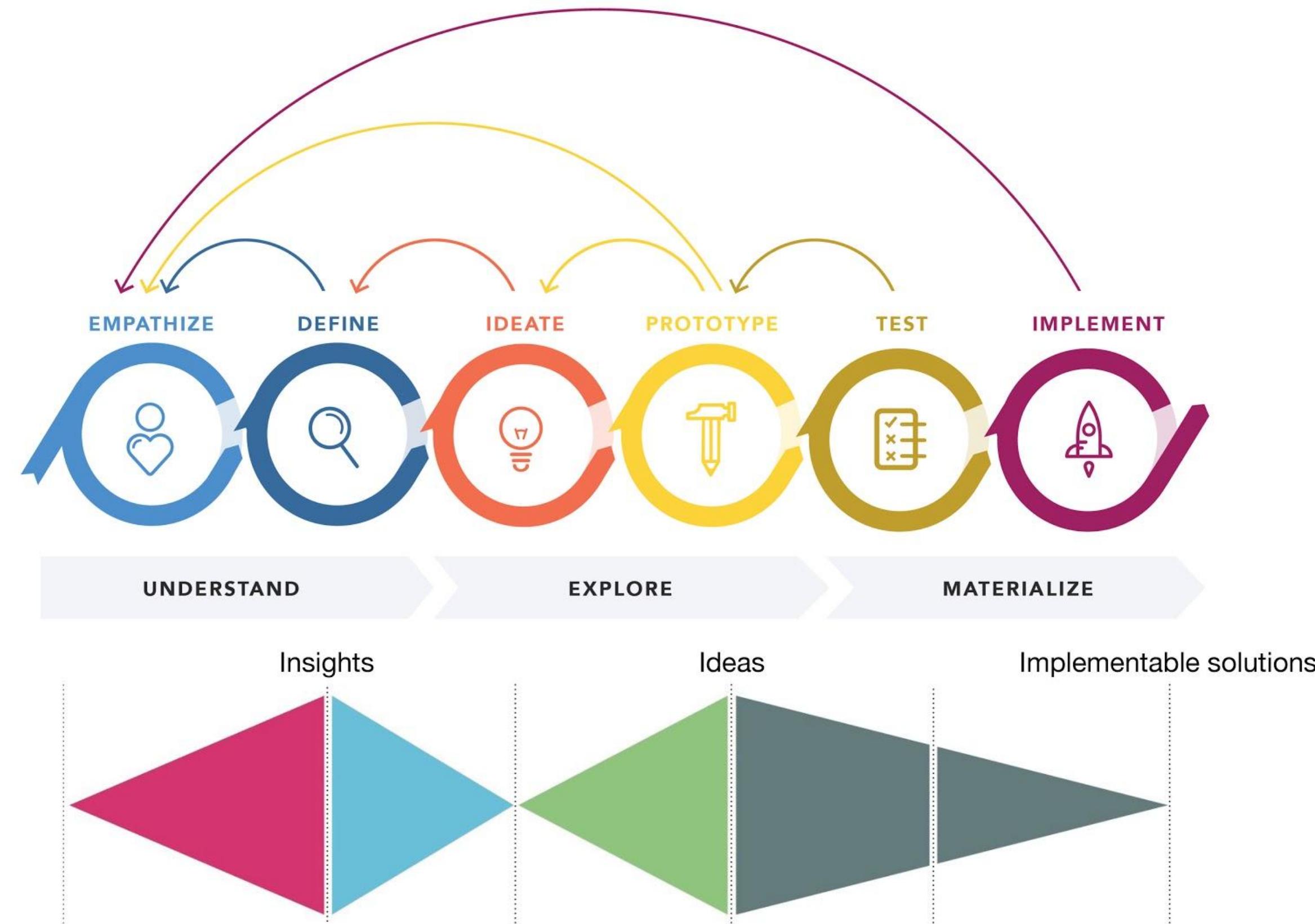
NIRAPAD

Empowering Women Refugees
through a community-focused
public health initiative

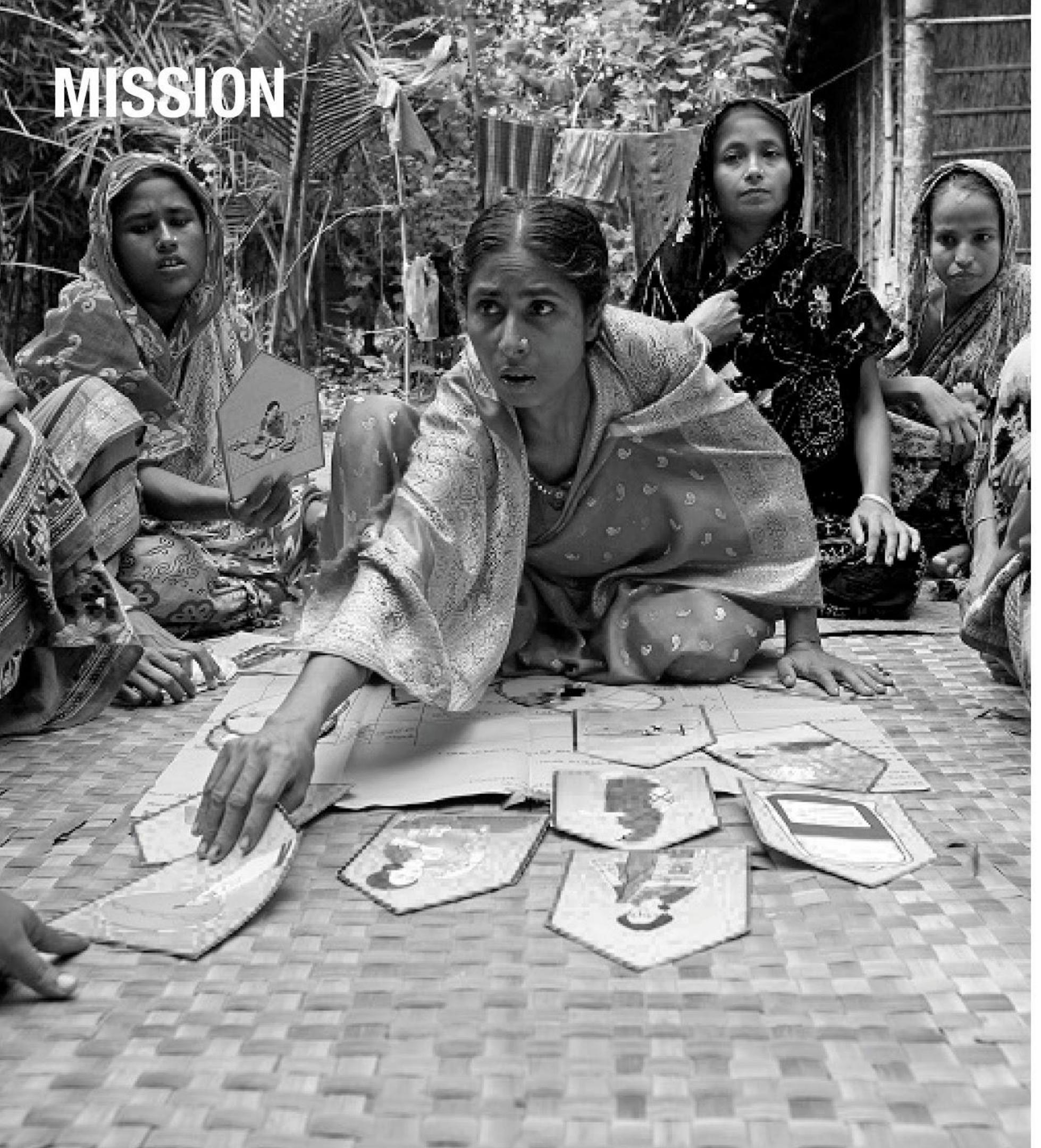


DESIGN PROCESS

We approached the design challenge with a empathic approach that focused on putting the user at the center of the design process. This was achieved through an empathic approach to the prevalent conditions consisting of three phases namely **Research** (Understand), **Design** (Explore) and **Implementation** (Materialize).



MISSION



To **empower** women by giving them **opportunities** for decision making, ultimately enhancing the **individual** and **community resilience**.



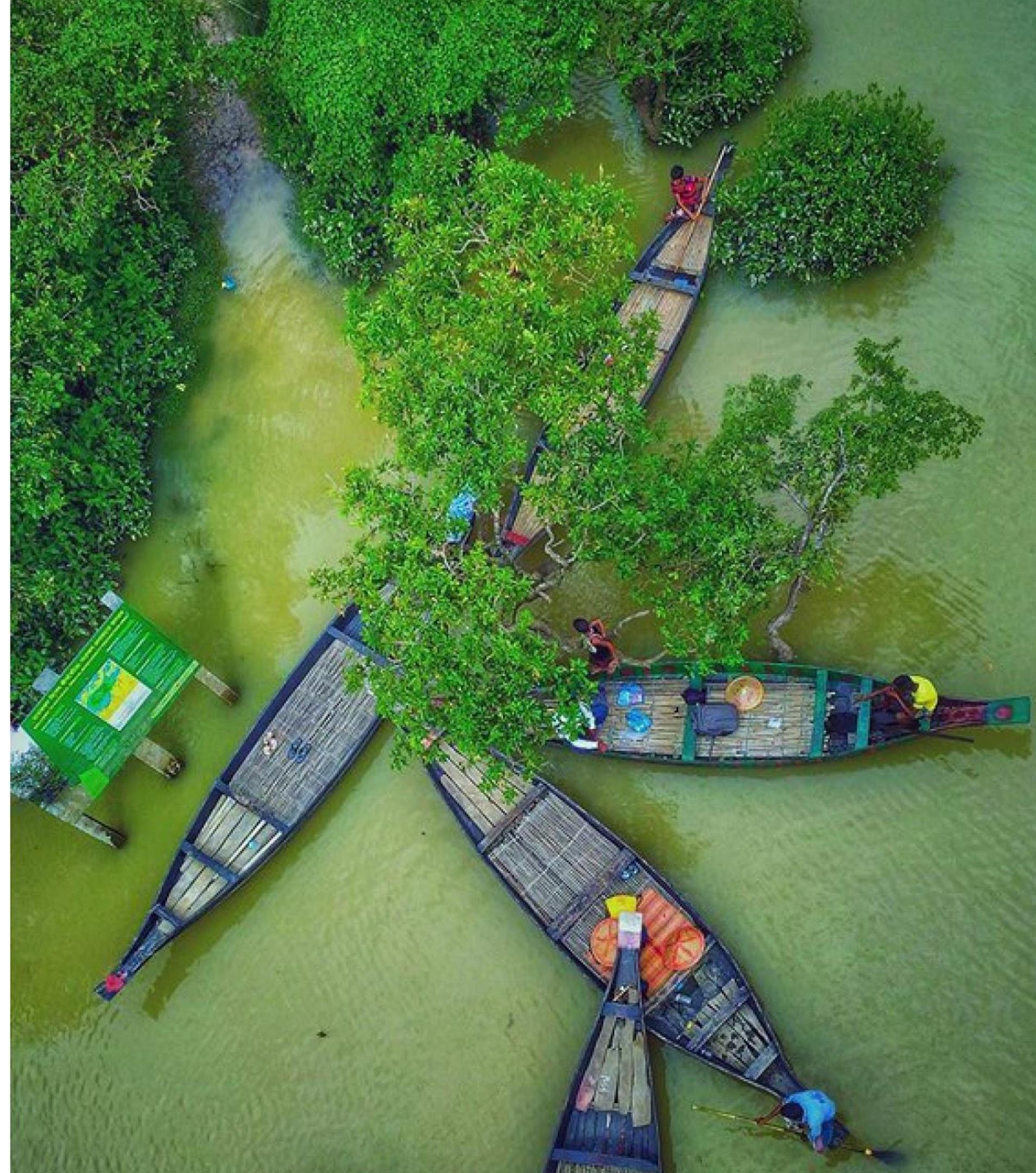
VISION

We envision a **circular, sustainable** model involving a **product, service, and system** that addresses women's public health concerns while **empowering women refugees**.

GEOGRAPHICAL & CLIMATIC CONTEXT

Due to Bangladesh's low-lying, deltaic plain and adjacent to ocean geographic characteristics, climate Change has an acute effect on Bangladesh's migration patterns by higher frequency of floods from delta areas, sea-level rise, drought, cyclones, and glacier melting in the Himalayas. Myers (2002) projected 26 million refugees will come from Bangladesh (Citation).

Research has shown that the climate refugee community is vulnerable due to lack of resources and economic opportunities. Currently, there is an influx of refugees to the neighboring country of India with whom Bangladesh shares 90 percent of its border. Several cultural, regional, lingual similarities and the likelihood of improved economic opportunities in India are some reasons that motivate the poor in Bangladesh to consider migrating illegally to India. To deal with this influx, India has been building refugee camps in its north-eastern border states. These refugee camps have recently come under scrutiny from the United Nations and Human Rights Watch for its poor living conditions and they warn that this could soon turn into a humanitarian and public health crisis of horrifying proportions.



AGRICULTURAL CONTEXT

Agriculture contributes 19.6% to the national GDP, 63% domestic jobs.



JUTE

Bangladesh is the 2nd largest exporter (world), traditionally used for carpet backing, burlap bags, cheap paper, and others...



RICE



TEA

CULTURAL CONTEXT

Bangladesh has a rich, diverse culture. Its deeply rooted heritage is thoroughly reflected in its architecture, dance, literature, music, painting and clothing. The three primary religions of Bangladesh (Hinduism, Buddhism and Islam) have had a great influence on its culture and history.



NAKASHI KANTHA

Embroidered quilt, centuries-old Bengali art tradition, W. Women are all experts in this. Takes months to make.

WOMEN AT RISK

Due to natural disasters and cultural background, Bangladeshi women are particularly under threat.

NUTRITION

In Bangladesh, women of all ages are more calorie-deficient than men.

Chronic energy deficiency among women is the highest in the world.

DOMESTIC BURDEN

Flood increases women's domestic burden: loss of utensils and household essential.

SOCIAL BIAS

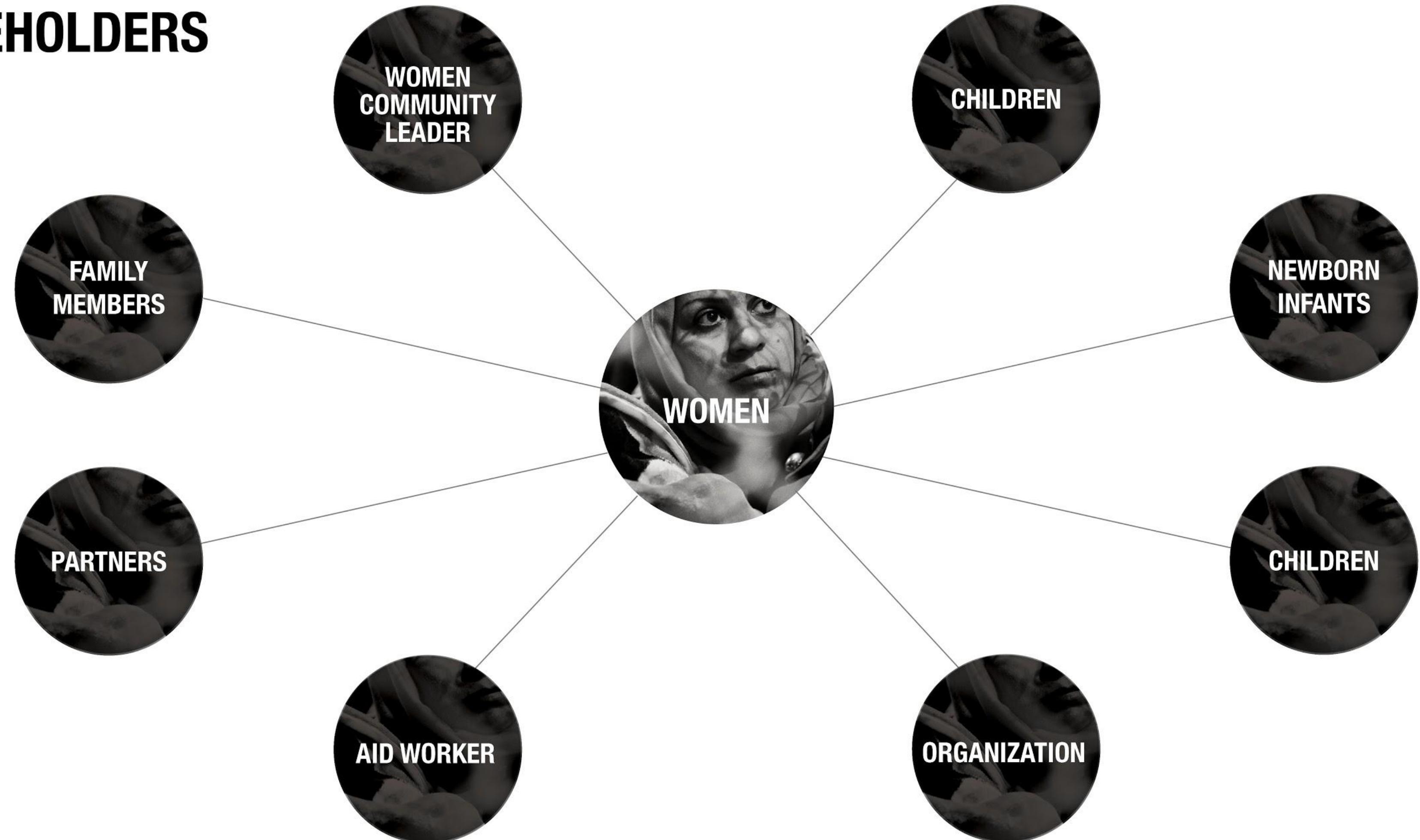
Societal attitudes restricting interaction between men and women.

Make women more reluctant in public cyclone shelters.

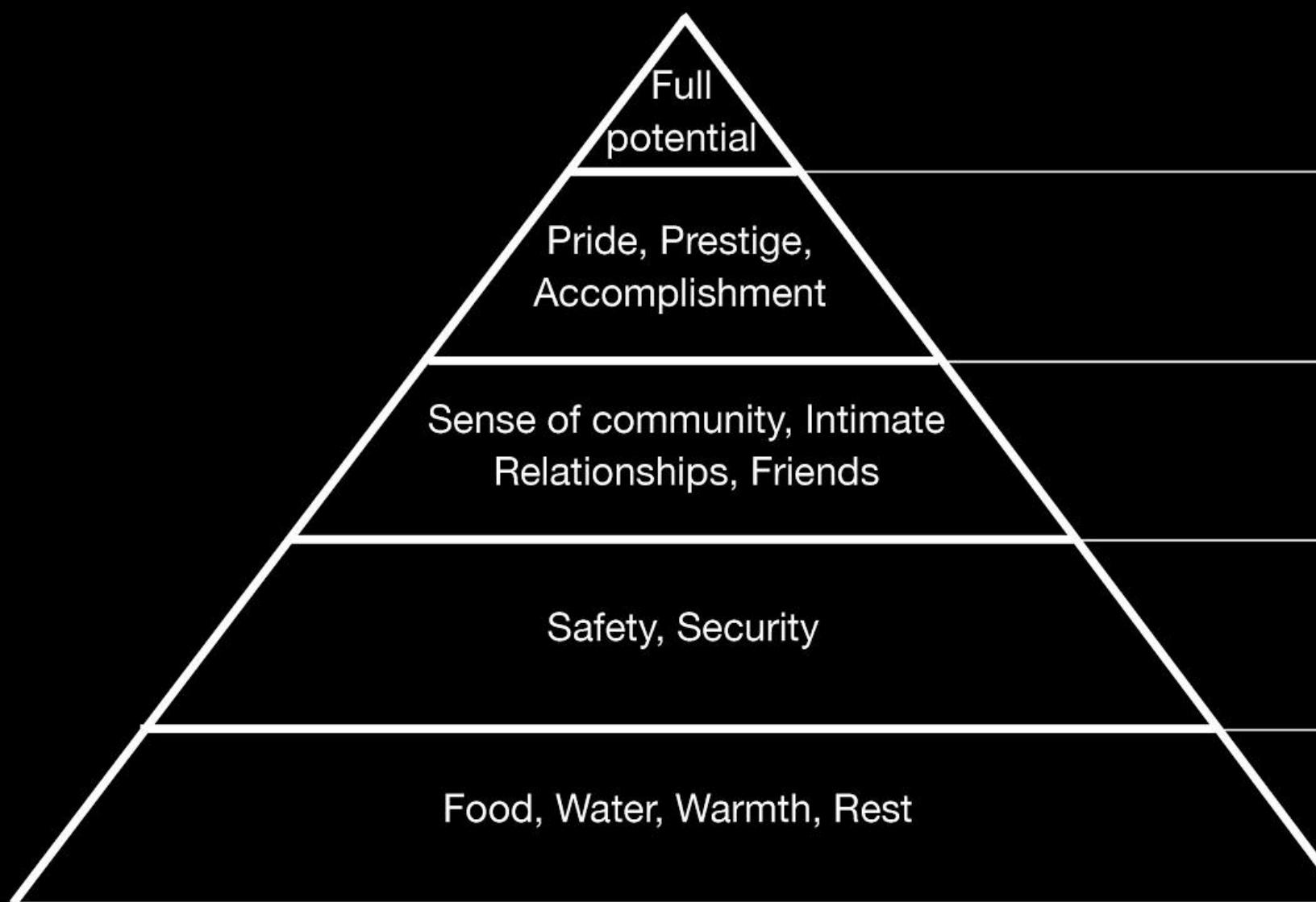
BIRTH RATE

17.7 (17.7 out of 100). Decreases over the year.

STAKEHOLDERS



MASLOW'S HIERARCHY OF NEEDS



SELF-ACTUALIZATION

SELF-ESTEEM

LOVE AND BELONGING

SAFETY

PHYSIOLOGICAL NEEDS

PERSONAS



Ruksana, 33, New mother

Malnourished and worried about the health of her baby. Looking for guidance on infant nutrition and upbringing.



Heena, 13, Teenager

The situation has rendered her stateless and in a refugee camp. Has recently reached menarche which forces her to miss 5 days of school each month.



Feroz, 35, Textile mill worker

Looking for work in the local neighborhood and in the refugee camp in order to sustain his newly displaced family.



Mariam , 68, Community woman leader

Looking for ways to engage the female population in the refugee camp and raise awareness about issues related to public health.



Arif, New born baby

Malnourished and in need of supplements and immunizations. Also in need of age-appropriate baby wear. Born premature, in need of monitoring.



Salma, 45, Extended family members

Looking for opportunities to engage other family members to increase household income. Shares responsibility in childcare with new mother.



Harris & Samar, 8, Children

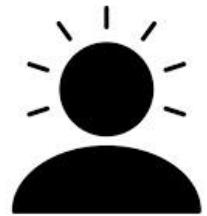
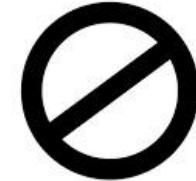
Cheerful despite circumstances. Love playing cricket and haven't fit in at the local school. Looking for other kids in the community to build friendships.



Aysha, 48, Aid worker

Organizes workshops and training sessions within the refugee camp. Looking for ways to engage the refugee community to build resilience.

SECONDARY RESEARCH



SOCIAL EXCLUSION AND RESTRICTION

A study in Nepal found that **89 percent** of respondents practiced some form of **exclusion or restriction** during a menstrual cycle.

However, organizations such as WaterAid are working to break the silence through **female-led self-help groups**.

When just a few women came forward to speak, it inspired others to share their experiences and start breaking the taboo.

LACK OF AWARENESS

Since the topic is **taboo**, it is often ignored in schools. A study in West Bengal found that, though 67.5 percent knew what a period was before their first, **97.5 percent did not know where menstrual bleeding comes from**.

UK Aid is **creating audiobooks** for girls **dispelling myths** and teaching them about their periods and are creating **extracurricular activities** that teach about menstrual hygiene in South Asia.

According to WaterAid, a study done in South India found **half the girls** in school were pulled after their first period, often to be **married**. The remaining girls reported **poor performance** due to **anxiety** that they would be exposed.

ACCESS TO HYGIENE PRODUCTS

According to WaterAid, in a West Bengal study, only **11.25 percent** of girls used **disposable feminine hygiene products**.

The most common obstacles to obtaining them are a **lack of awareness** about them, the **high cost**, the **lack of availability** and the need for **disposal facilities**. Most women and girls rely on **reusable cloth**.

Focus group discussions indicated that girls would **prefer sanitary pads** because they were more **comfortable, discreet, and easier to use and carry**. WaterAid is working to make **low cost disposable sanitary pads**.

LACK OF INFRASTRUCTURE

To sanitize reusable cloth, they need to wash them in **clean water** and **dry them in sunlight**.

However, **cultural taboos** around menstruation often pressure women and girls to try to **dry them in dark places**, potentially leading to **infection**. For those who might have access to disposable sanitary pads, they often **lack the facilities to get rid of them**.

However, WaterAid and its partners are working on constructing that allow for **safe and secure disposal** of sanitary pads.

INSIGHTS

SUSTAINABLE MATERIALS

NATIVE TEXTILE INDUSTRY

BIO-INSPIRED

CLIMATE CRISIS

REFUGEE CAMPS

PACKAGING STRATEGY

MATERNAL & CHILD HEALTH

SEXUAL HEALTH

FEMININE HYGIENE

PARTICIPATORY MODEL

LOCAL IMAGERY- CULTURE, ICONS

COMMUNITY BUILDING

TRUST AND FAMILIARITY

SELF-SUSTAINING

INCOME GENERATING

EDUCATION AND AWARENESS

RESILIENT- INDIVIDUAL
AND COMMUNITY

UPSKILLING AND TRAINING

EMPOWERMENT

PROBLEM STATEMENT



Due to Bangladesh's low-lying, deltaic plain and adjacent to ocean geographic characteristics, climate Change has an acute effect on Bangladesh's migration patterns by higher frequency of floods from delta areas, sea-level rise, drought, cyclones, and glacier melting in the Himalayas. Myers (2002) projected 26 million refugees will come from Bangladesh.

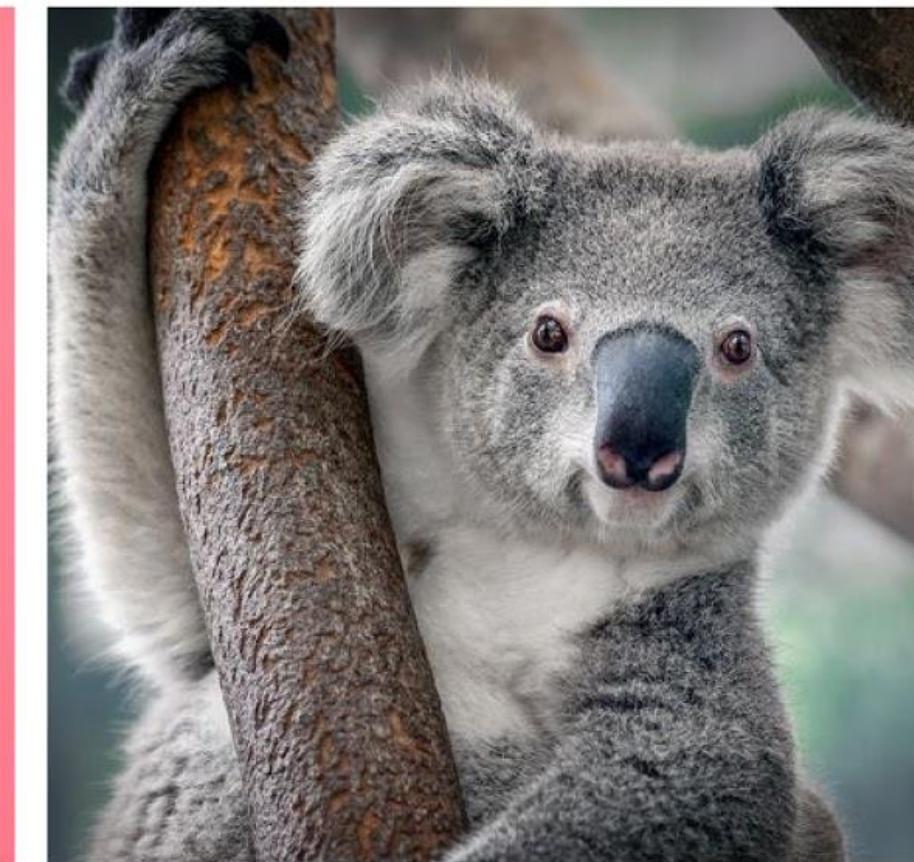
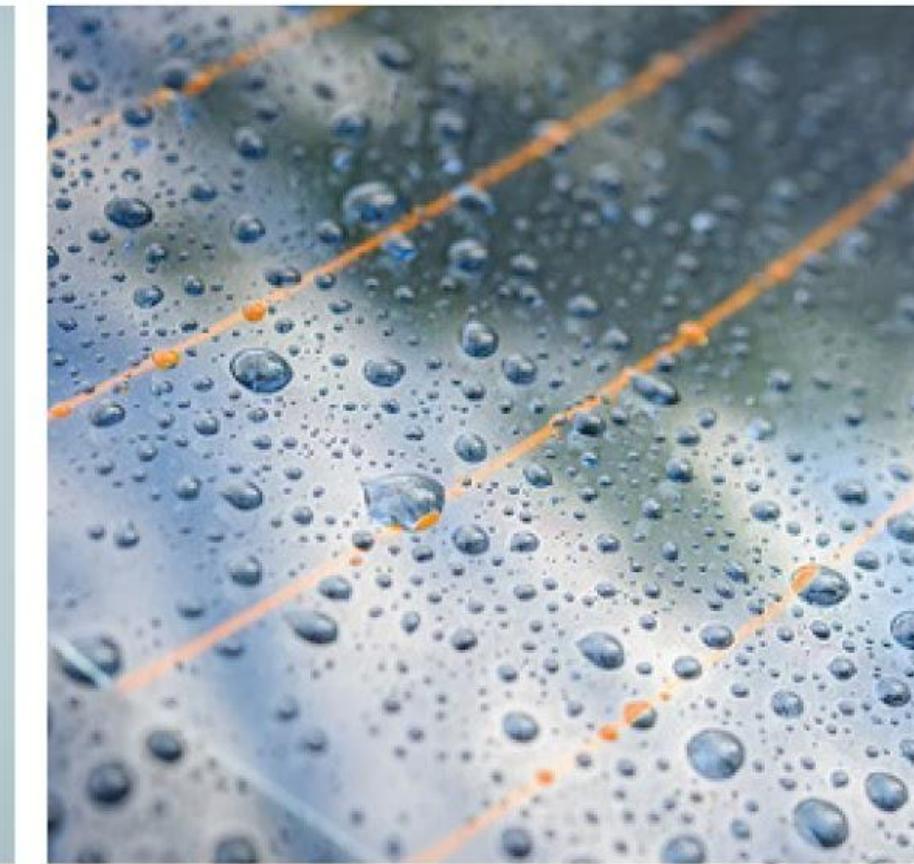
Research has shown that the climate refugee community is vulnerable due to lack of resources and economic opportunities. Currently, there is an influx of refugees to the neighboring country of India with whom Bangladesh shares 90 percent of its border. Several cultural, regional, lingual similarities and the likelihood of improved economic opportunities in India are some reasons that motivate the poor in Bangladesh to consider migrating illegally to India. To deal with this influx, India has been building refugee camps in its north-eastern border states. These refugee camps have recently come under scrutiny from the United Nations and Human Rights Watch for its poor living conditions and they warn that this could soon turn into a humanitarian and public health crisis of horrifying proportions. We identified four core issues. They are feminine hygiene, immediate access to health care, and eco-efficiency of the community.

We are going to dive into these problems by first understanding and respecting the cultural background of Bangladesh refugees and the cultural displacement that they face, then create a product or system that can alleviate the prejudice that the community holds against modern healthcare products or systems. We plan to achieve this by prototyping a product or service that can be easily scaled in a region with sparse resources and existing infrastructure. We believe that by doing this, we can build a local circular economy that is both self-sustainable and economically viable.

BIOMIMIC INSPIRATION



MOODBOARD



LOGO INSPIRATION



LOGO

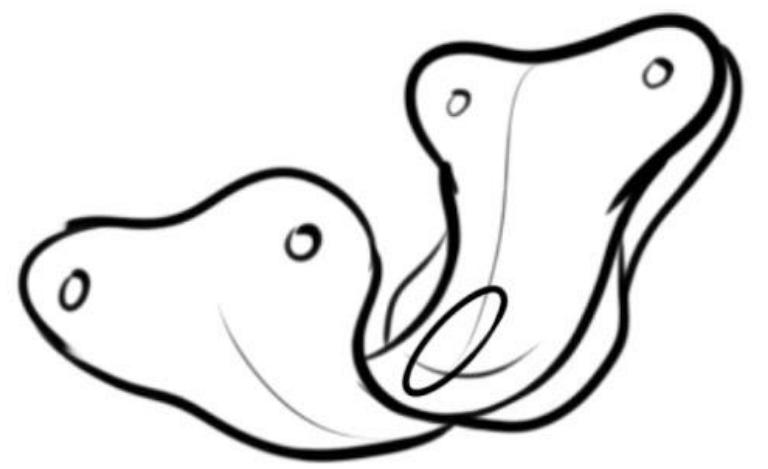


Safe- নরিপদ (Nirāpada)

PRODUCT



Current Product



NIRAPAD-Morning



NIRAPAD-Evening

PRODUCT MATERIAL



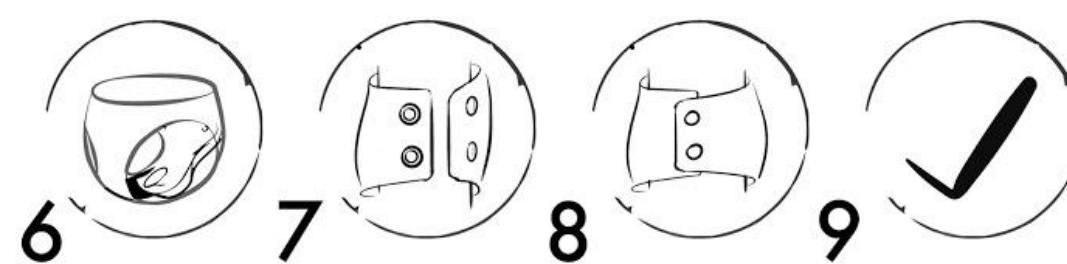
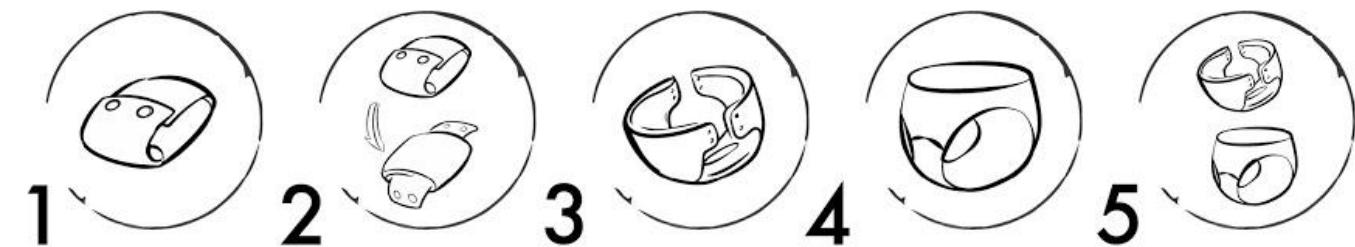
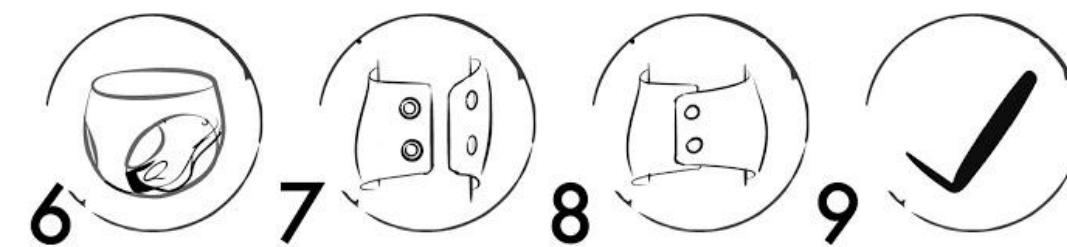
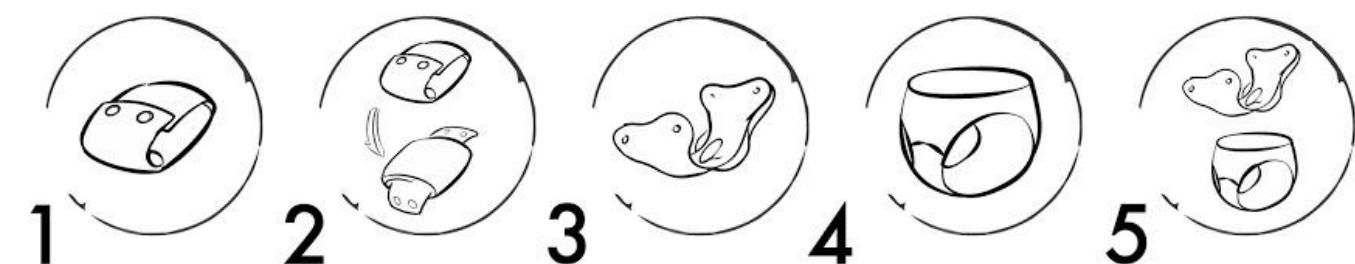
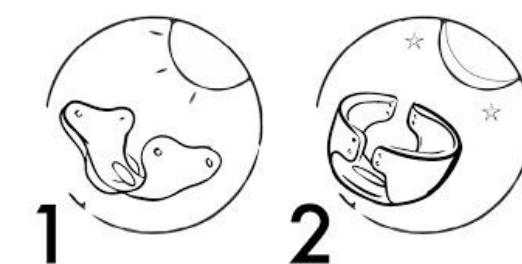
GRAPHICS WITH TRADITION



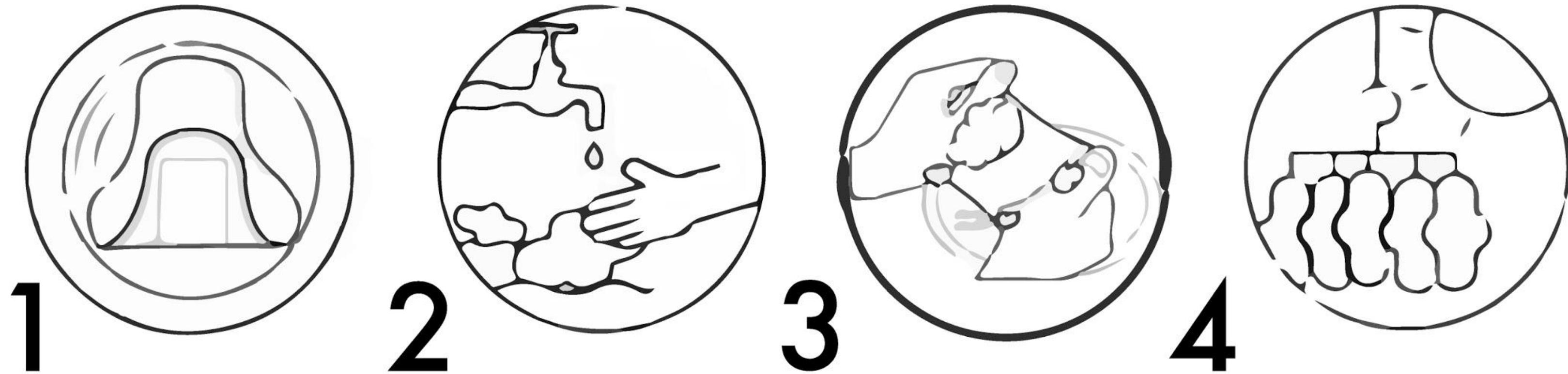
PACKAGING IN JUTE



EDUCATION INSIDE THE PACKAGE

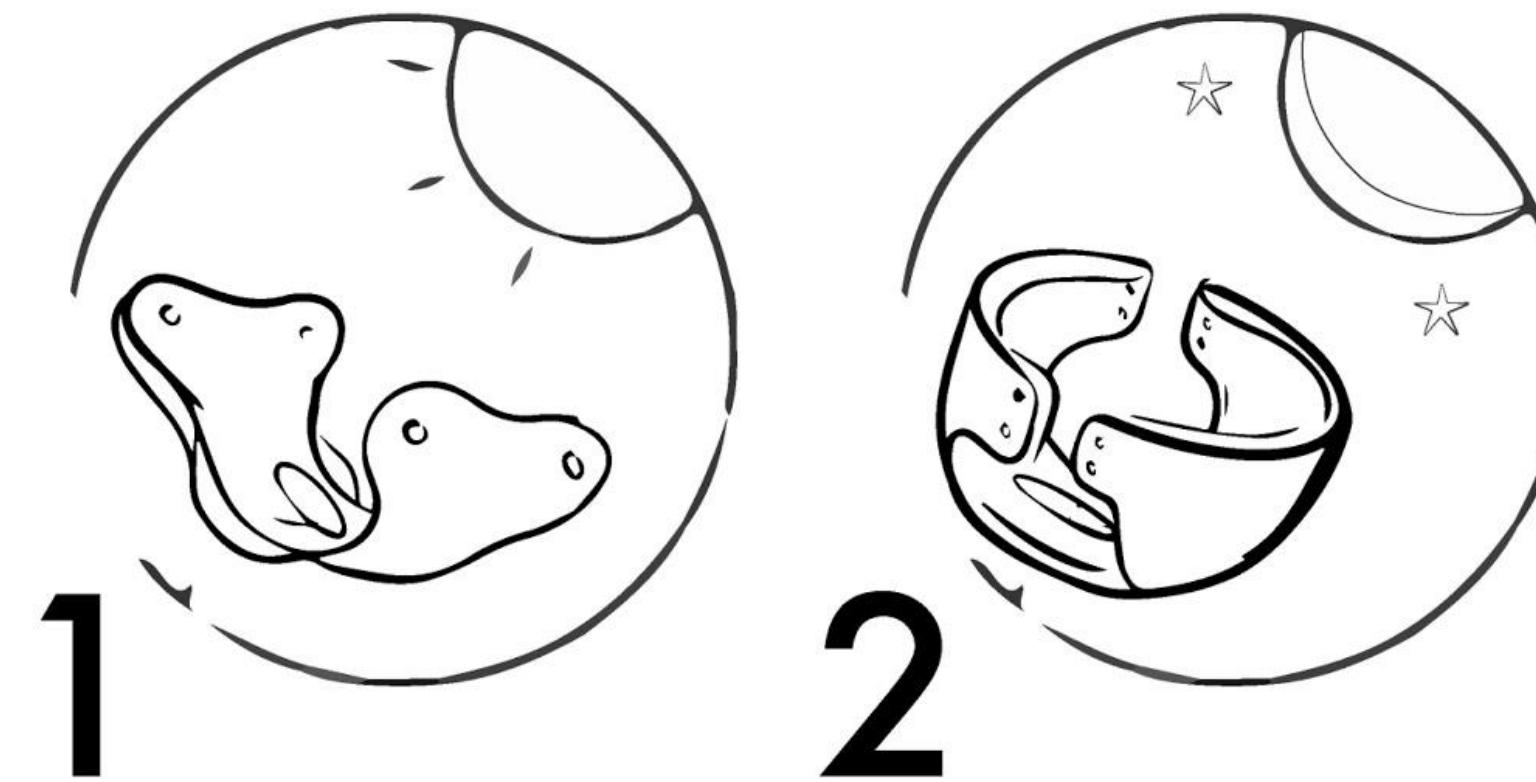


EDUCATION INSIDE THE PACKAGE



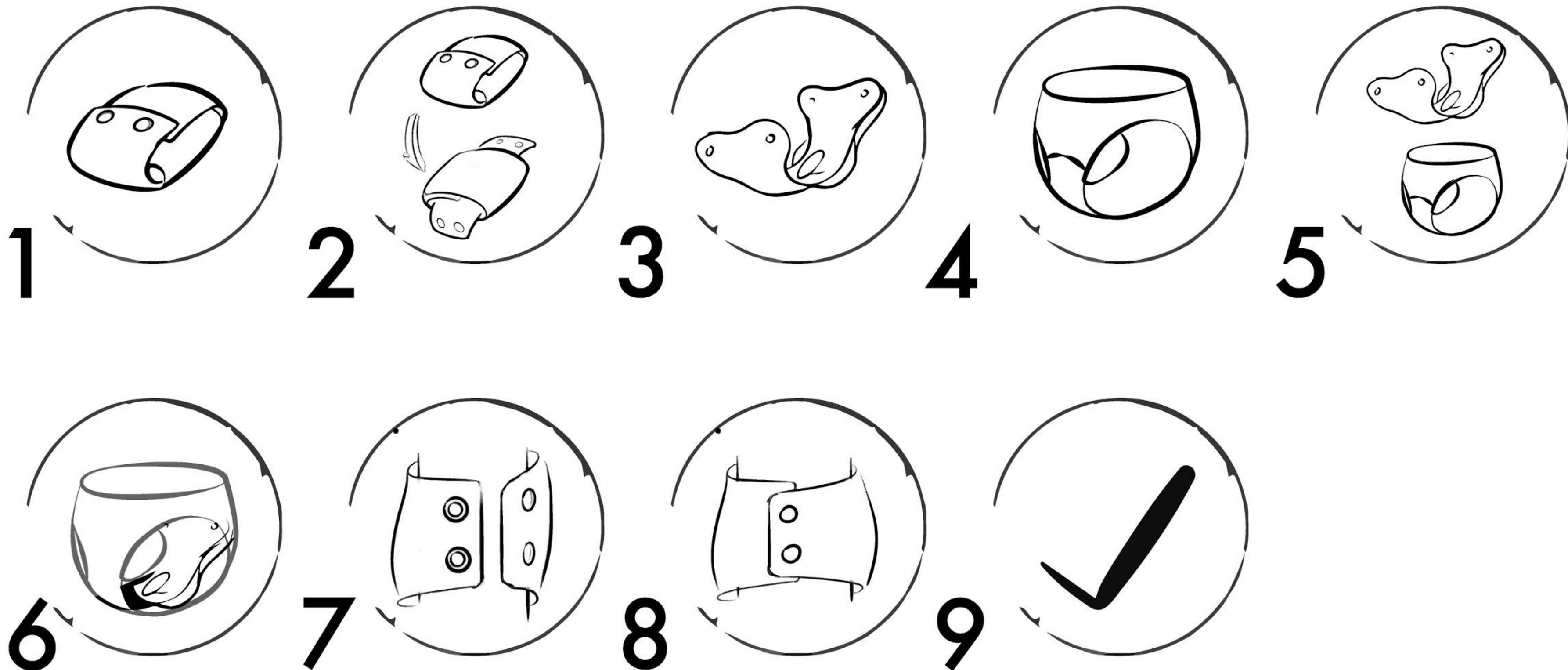
CLEANING PROCESS

EDUCATION INSIDE THE PACKAGE



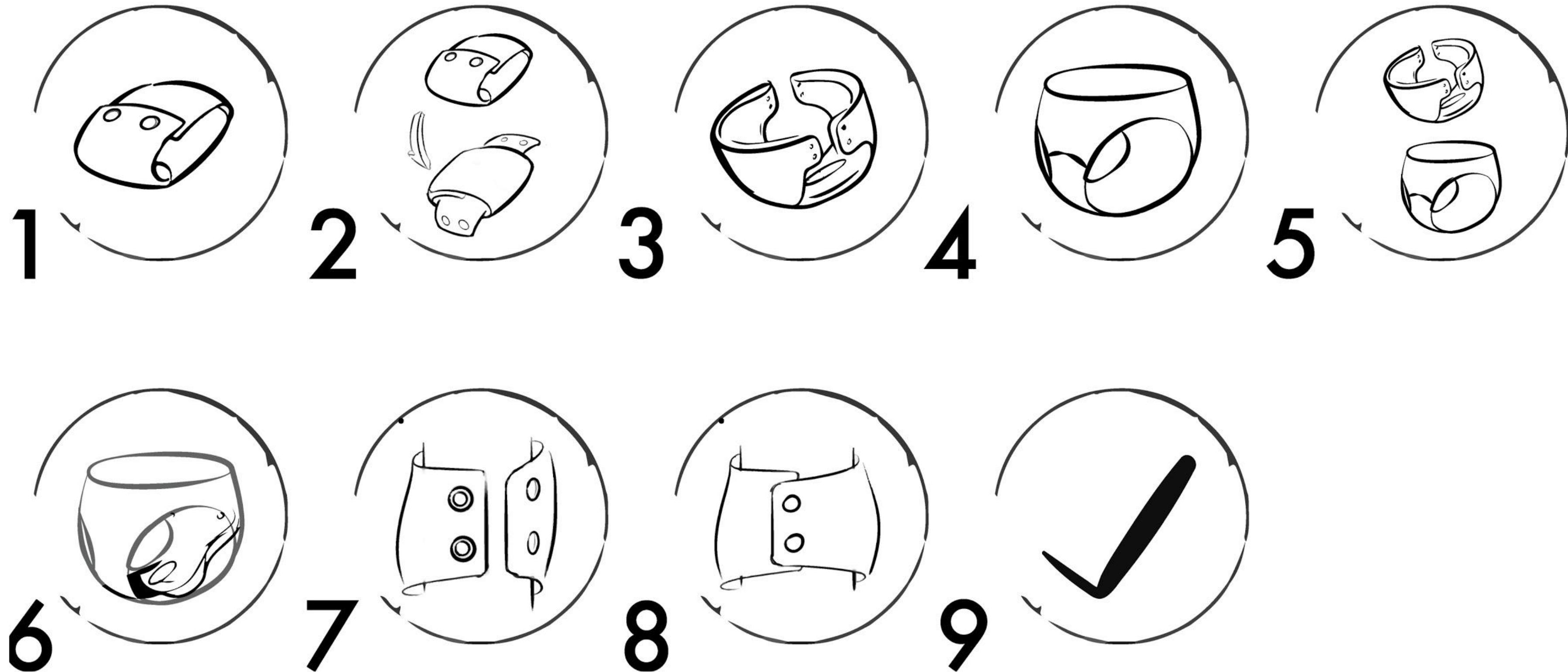
PAD USAGE CHOICES

EDUCATION INSIDE THE PACKAGE



HOW TO USE A PAD?

EDUCATION INSIDE THE PACKAGE



HOW TO USE A PAD?

COMPETITOR RESEARCH



GladPad



BloomingNora

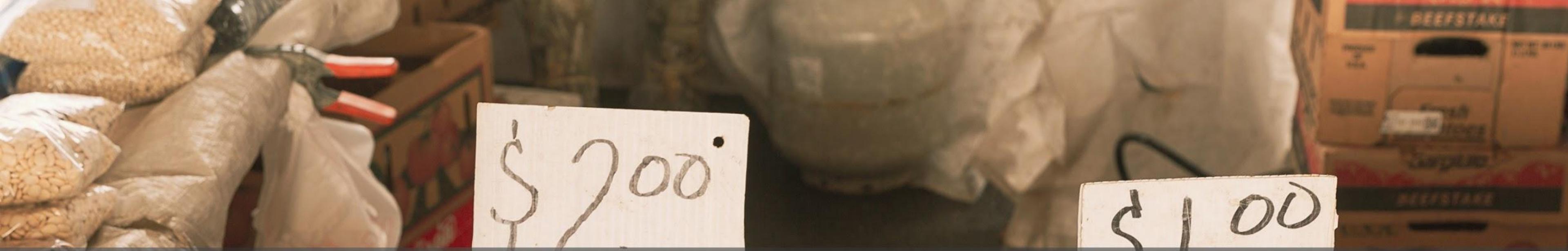


EcoLeaf

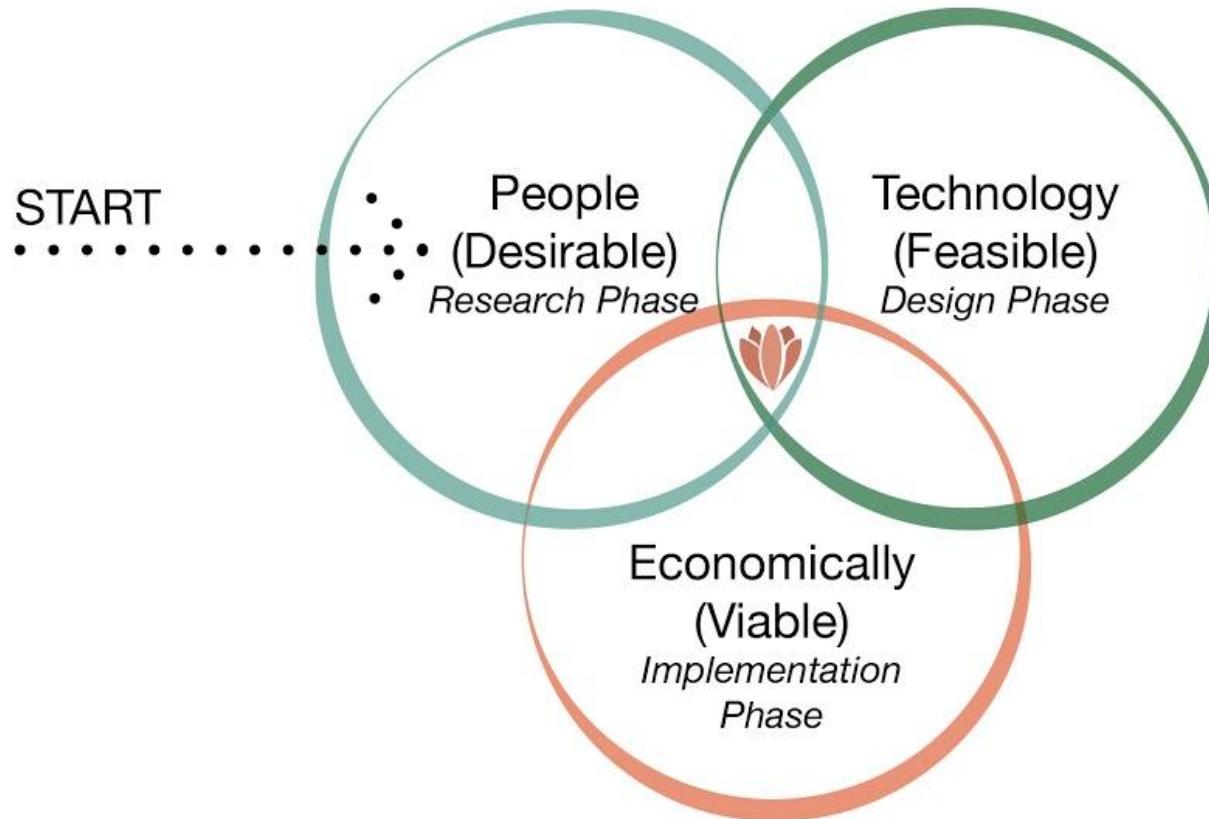


LunaPad

DESIGN RECOMMENDATIONS FOR SERVICE AND SYSTEM



FINANCIAL MODEL



VALUE PROPOSITION



INTERNATIONAL TARGET MARKET- LOHAS ECO-CONSCIOUS MARKET

In 2006, this market segment was estimated at \$300 billion, approximately 30% of the U.S. consumer market. In Japan roughly 17 million adults or 12% of the population are LOHAS consumers.



LOCALLY SOURCED RAW MATERIALS



TRANSPARENT SUPPLY CHAIN, FAIR TRADE



GOVERNMENT SUBSIDIES INCENTIVIZE THE BUSINESS MODEL

Mahila Coir Yojana (MCY) aims at women empowerment through the provision of spinning equipment at subsidised rate after appropriate skill development (training) programmes.

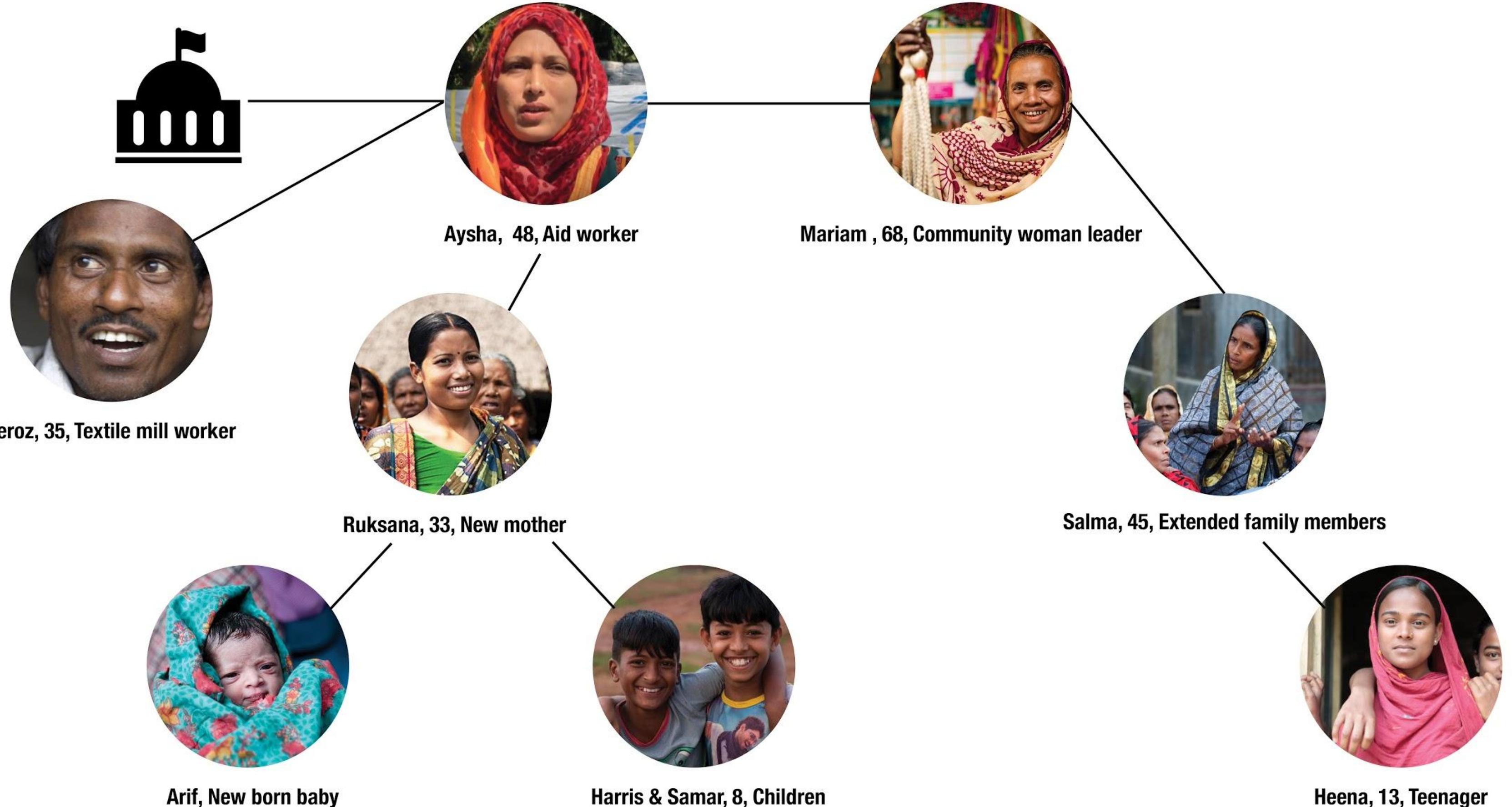


EMPOWERMENT



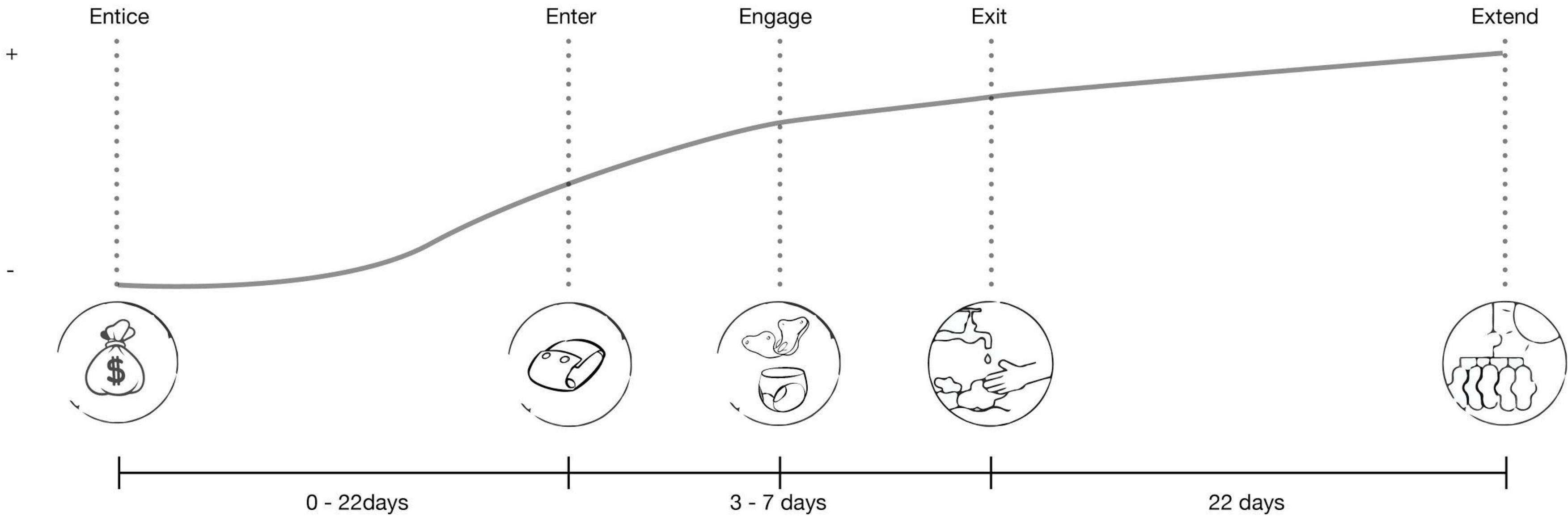
SOCIAL IMPACT INVESTMENT

STAKEHOLDER MODEL



TIMELINE AND PROJECTIONS

5 E MODEL



PROJECTIONS

In the emerging areas, growing volumes of education, numerous initiatives taken by NGO units & government and forceful advertising done by the companies to upsurge the alertness regarding the paybacks of utilizing sanitation merchandises are driving the growth in the demand for sanitary napkins.

Asia Pacific will be the most important supplier of profit to the market for recyclable sanitary pads owing to the greater population of women in the area. The private administrations and governments in this area are applying a number of creativities to increase the standards of female hygiene. In addition, refining healthcare structure and growing number of health centers and indicative hubs in this area will additionally result in growth of the market.

SUSTAINABLE DEVELOPMENT GOALS



3 GOOD HEALTH
AND WELL-BEING

GOOD HEALTH AND WELL-BEING

Ensure healthy lives and promote well-being for all at all ages



5 GENDER
EQUALITY

GENDER EQUALITY

Achieve gender equality and empower all women and girls



9 INDUSTRY, INNOVATION
AND INFRASTRUCTURE

INDUSTRY, INNOVATION AND INFRASTRUCTURE

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation



10 REDUCED
INEQUALITIES

REDUCED INEQUALITIES

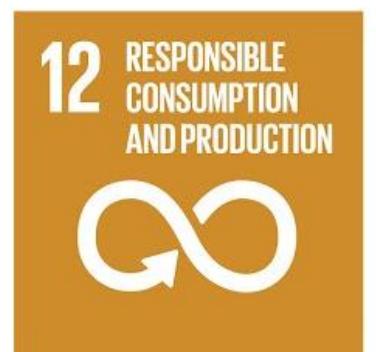
Reduce inequality within and among countries



11 SUSTAINABLE CITIES
AND COMMUNITIES

SUSTAINABLE CITIES AND COMMUNITIES

Make cities and human settlements inclusive, safe, resilient and sustainable



12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION

RESPONSIBLE CONSUMPTION, AND PRODUCTION

Ensure sustainable consumption and production patterns

**SUSTAINABLE
DEVELOPMENT
GOALS**

REFERENCES

3. GOOD HEALTH AND WELL-BEING

- **TARGET 3.1** By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births

INDICATOR 3.1.1 Maternal mortality ratio

- **TARGET 3.3** By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases

INDICATOR 3.3.5 Number of people requiring interventions against neglected tropical diseases

- **TARGET 3.8** Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all

INDICATOR 3.8.1 Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, non-communicable diseases and service capacity and access, among the general and the most disadvantaged population)

- **TARGET 3.9** By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

INDICATOR 3.9.3 Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services)

INDICATOR 3.9.4 Mortality rate attributed to unintentional poisoning

- **TARGET 3.C** Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States

INDICATOR 3.C.1 Health worker density and distribution

REFERENCES

5. REDUCED INEQUALITIES

- **TARGET 5.1** By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status

INDICATOR 5.1.1 Whether or not legal frameworks are in place to promote, enforce and monitor equality and non-discrimination on the basis of sex
TARGET 3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases

- **TARGET 5.3** Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation

INDICATOR 5.3.1 Proportion of women aged 20-24 years who were married or in a union before age 15 and before age 18

INDICATOR 5.3.2 Proportion of girls and women aged 15-49 years who have undergone female genital mutilation/cutting, by age

- **TARGET 5.5** Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life

INDICATOR 5.5.1 Proportion of seats held by women in national parliaments and local governments

- **TARGET 5.6** Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences

INDICATOR 5.6.1 Proportion of women aged 15-49 years who make their own informed decisions regarding sexual relations, contraceptive use and reproductive health care

INDICATOR 5.6.2 Number of countries with laws and regulations that guarantee women aged 15-49 years access to sexual and reproductive health care, information and education

- **TARGET 5.B** Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women

INDICATOR 5.B.1 Proportion of individuals who own a mobile telephone, by sex

REFERENCES

9. INDUSTRY, INNOVATION AND INFRASTRUCTURE

- **TARGET 9.2** Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries
 - INDICATOR 9.2.2** Manufacturing employment as a proportion of total employment
- **TARGET 9.3** Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets
 - INDICATOR 9.3.1** Proportion of small-scale industries in total industry value added
 - INDICATOR 9.3.2** Proportion of small-scale industries with a loan or line of credit
- **TARGET 9.4** By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities
 - INDICATOR 9.4.1** CO₂ emission per unit of value added
- **TARGET 9.A** Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States
 - INDICATOR 9.A.1** Total official international support (official development assistance plus other official flows) to infrastructure

REFERENCES

10. REDUCED INEQUALITIES

- **TARGET 10.2** By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status
 - INDICATOR 10.2.1** Proportion of people living below 50 per cent of median income, by age, sex and persons with disabilities
- **TARGET 10.4** Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality
 - INDICATOR 10.4.1** Labour share of GDP, comprising wages and social protection transfers
- **TARGET 10.6** Ensure enhanced representation and voice for developing countries in decision-making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions
 - INDICATOR 10.6.1** Proportion of members and voting rights of developing countries in international organizations
- **TARGET 10.A** Implement the principle of special and differential treatment for developing countries, in particular least developed countries, in accordance with World Trade Organization agreements
 - INDICATOR 10.A.1** Proportion of tariff lines applied to imports from least developed countries and developing countries with zero-tariff
- **TARGET 10.C** By 2030, reduce to less than 3 per cent the transaction costs of migrant remittances and eliminate remittance corridors with costs higher than 5 per cent
 - INDICATOR 10.C.1** Remittance costs as a proportion of the amount remitted

REFERENCES

11. SUSTAINABLE CITIES AND COMMUNITIES

- **TARGET 11.4** Strengthen efforts to protect and safeguard the world's cultural and natural heritage

INDICATOR 11.4.1 Total expenditure (public and private) per capita spent on the preservation, protection and conservation of all cultural and natural heritage, by type of heritage (cultural, natural, mixed and World Heritage Centre designation), level of government (national, regional and local/municipal), type of expenditure (operating expenditure/investment) and type of private funding (donations in kind, private non-profit sector and sponsorship)

- **TARGET 11.5** By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations

INDICATOR 11.5.2 Direct disaster economic loss in relation to global GDP, including disaster damage to critical infrastructure and disruption of basic services

12. SUSTAINABLE CITIES AND COMMUNITIES

- **TARGET 12.2** By 2030, achieve the sustainable management and efficient use of natural resources

INDICATOR 12.2.1 Material footprint, material footprint per capita, and material footprint per GDP

INDICATOR 12.2.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP

- **TARGET 12.5** By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

INDICATOR 12.5.1 National recycling rate, tons of material recycled

- **TARGET 12.7** Promote public procurement practices that are sustainable, in accordance with national policies and priorities

INDICATOR 12.7.1 Number of countries implementing sustainable public procurement policies and action plans



THANK YOU!

ELLE LUO

SABAH MOHAMMED

CAROLINE SUN