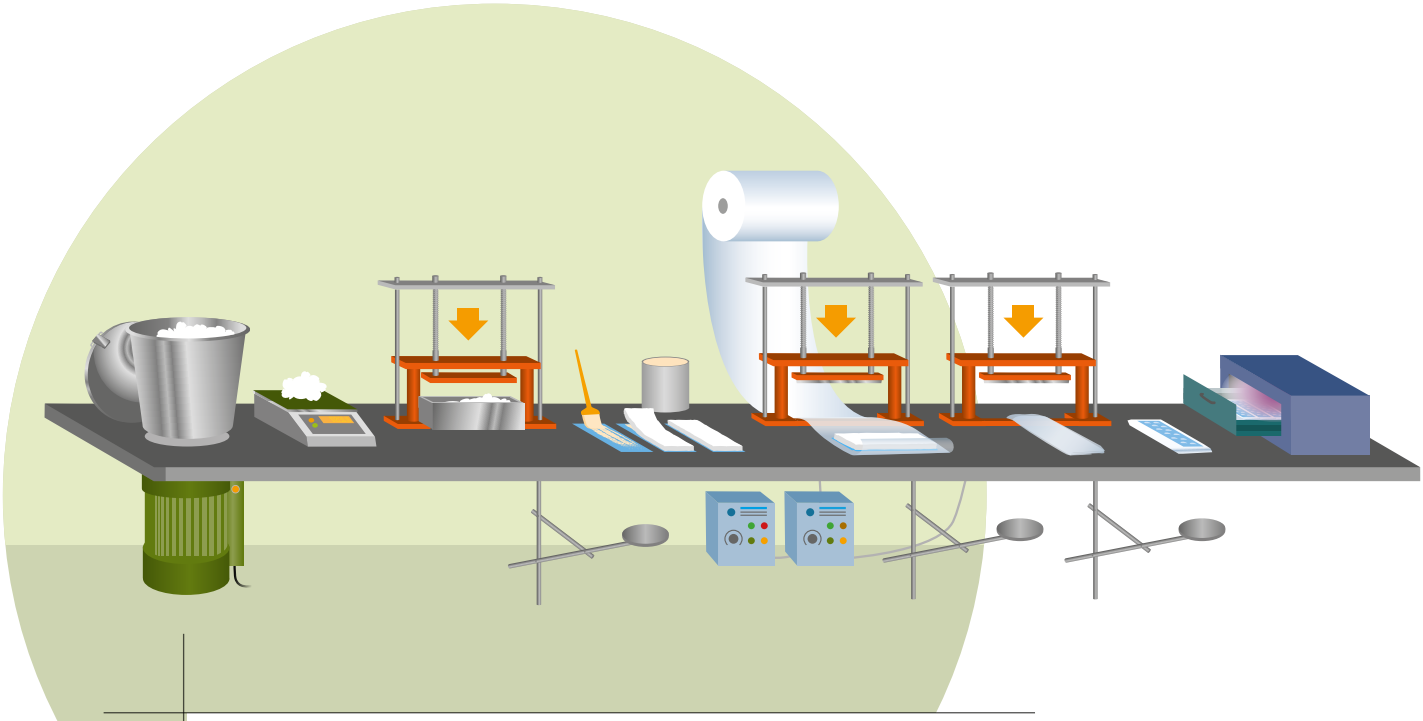


TECHNOLOGY APPLICABILITY FRAMEWORK // TAF ASSESSMENT LOW-COST SANITARY PAD MACHINE

Two low-cost sanitary pad machines placed in women's collectives in Nepal

german cooperation
DEUTSCHE ZUSAMMENARBEIT

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

sustainable sanitation alliance

CONTENT

FOREWORD

The German Development Cooperation through GIZ has started to be involved in Menstrual Health after the 2015 earthquake. A programme implemented by Nepal's Ministry of Health and Population and facilitated by the German Development Cooperation has sought to address Menstrual Health and Hygiene Management particularly in rural, less accessible areas. The initiative to set-up local production facilities of sanitary pads was made possible by using low-cost and easy to operate sanitary pad machines, designed by Arunachalam Muruganantham – the Indian "Pad Man".

Female-led Cooperatives are producing sanitary pads in the districts of Dhading and Nuwakot not only offered local woman the option to buy biodegradable and safe sanitary pads at a low price point (around 0.05 Euros per pad) but also provided employment for 4–8 women in each place of production.

The President of Nepal's announcement in May 2019 to provide free sanitary products in all government schools has further highlighted how important it is to tackle the issue of affordable, high-quality, and accessible sanitary pads.

Both the provision of free pads in schools and the cooperatives not only mean that girls and women are more likely to have access to sanitary products but have also helped to initiate important conversations about social, religious, and cultural practices affecting menstrual health.

So far the model of female-led cooperatives producing the sanitary pads has shown great potential for further expansion. We are excited that two further women entrepreneurs will start producing low-cost sanitary pads for girls in Godavari and Dhangadhi at the end of 2019.

Valerie Broch Alvarez
SENIOR TECHNICAL ADVISER FOR GIZ'S SUPPORT TO
THE HEALTH SECTOR PROGRAMME IN NEPAL.

The S2HSP team at Jayaashree Industries in India 2016 (Christian Greitmann, Arunachalam Muruganantham, Valerie Broch Alvarez, Shrutha Sivakumar) // Figure 1

SCALE-UP-TOOL // THE TECHNOLOGY APPLICABILITY FRAMEWORK (TAF)

PURPOSE

This tool will help you to decide if a technology implemented as a pilot fulfils the criteria for further implementation and scaling-up. In order to evaluate the potential of a given technology, the parameters of the specific local setting have to be analysed before upscaling.

The results of the TAF can also be applied to a setting with similar parameters and therefore facilitate the upscaling process.

WHEN TO USE IT

In a specific local setting, the TAF systematically assesses the applicability of a technology in its pilot phase. It can also be used on a broader scale (city/regional/nationwide level) during upscaling.

Developed for the WASH sector, the TAF is applicable in other sectors as well.

SETTING

Used in small groups with the actors involved in the process.

FACILITIES AND MATERIALS

Templates and workshop materials.

NOTES

DURATION: Demand-oriented (several days to several weeks incl. preparation, training, fieldwork, and reporting).

COSTS: Cost-efficient tool (costs: personnel, workshop and interviews, material and logistics).

TRAFFIC LIGHT SYSTEM USED TO SCORE TAF INDICATORS

- + High value, neutral or positive, supportive characteristics
- 0 Potential impact, could become critical, needs follow-up
- − Low value, negative, critical, hindering characteristics
- ? Unclear information, should be clarified

WHY TO USE THE TAF

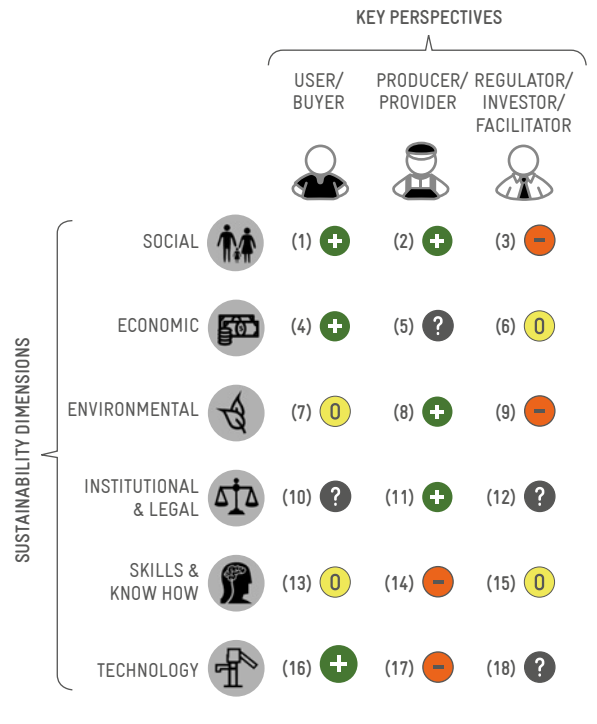
If you work with a technology in a specific local setting and you would like to expand it, to other locations, the TAF is an efficient tool to employ. The TAF comprehensively assesses an individual technology and identifies the risks and opportunities of use. It facilitates the understanding of how a new technology performs with regard to the different sustainability dimensions and which challenges might be faced in scaling-up the technology. It is a comprehensive learning approach, which helps you and your partners to deal with the technology systematically. The TAF can be used as a planning tool as well as for monitoring purposes, after a first pilot phase or during implementation at scale.

THE TAF PROCESS IN A NUTSHELL

In a participatory process, a technology implemented as a pilot is evaluated through the perspective of three key stakeholder groups engaged with the implementation of the technology: user/buyer, producer/provider and regulator/investor/facilitator.

The three key stakeholder groups assess the six TAF dimensions individually, resulting in 18 indicators (Fig.2). The TAF procedure comprises four steps, namely screening, assessment, presentation of results and interpretation.

GRAPHICAL TAF PROFILE // FIGURE 2



Olschewski, Casey 2015: 6

THE FOUR STEPS

1. SCREENING

Analysis of applicability of a specific (new) technology in a defined setting.

2. ASSESSMENT

FIELD WORK: Assessment of technology with focus on the 18 TAF indicators through one-on-one interviews, focus group discussion(s), and/or observation by use of specific questionnaires. Generated field data is used as basis for scoring the 18 indicators according to the TAF standard traffic light system.

Scoring Workshop: Information/perspectives/opinions captured during field work are cross-checked with stakeholders for accuracy and the final scores are agreed upon.

3. PRESENTATION OF RESULTS

The scoring of each of the 18 indicators through specific scoring questions results in the graphical TAF profile (traffic light system, Fig. 2).

4. INTERPRETATION

The graphical TAF profile offers the basis for comprehensive interpretation and allows the identification of strengths, risks, bottlenecks and uncertainties with regard to a technology implemented as a pilot. It provides guidance for developing a roadmap for upscaling.

SOURCES:

› Olschewski, André; Casey, Vincent (2015): The Technology Applicability Framework. A Participatory Tool to Validate Water, Sanitation, and Hygiene Technologies for Low-Income Urban Areas. In: Hostettler S., Hazboun E., Bolay JC. (eds) Technologies for Development. Springer, Cham.

› Olschewski, A. (2013). Skat TAF (Step 0): Manual. WASHTec Project. St Gallen, Switzerland.

› Schweitzer, Ryan; Grayson, Claire; Lockwood, Harold (2014): Mapping of Water, Sanitation and Hygiene Sustainability Tools Technical Report.

PROGRESSION // FROM WASH TO ALL SECTORS

The TAF was developed within the EU-funded WASH Technologies project WASHTec with SKAT as the leading organisation. From 2011 to 2013, the TAF was developed as an open source tool and tested in three countries on 13 different WASH technologies. To date, the TAF has been applied in several countries worldwide. To broaden the use of the TAF in development cooperation, GIZ uses the tool's scaling-up potential and adapted the tool accordingly. Among others, GIZ carried out TAFs in Uganda, Afghanistan, the Philippines and Zambia (Fig. 3). The methodology can also serve as a decision support tool for technologies in other sectors apart from WASH, for example irrigation systems, technologies in waste management, renewable energy and transportation.

STRENGTHS AND LIMITATIONS

The TAF methodology comprises a transparent, systematic and participatory approach to include all relevant stakeholders as well as a comprehensive sustainability assessment across six dimensions. Even though a TAF assessment is primarily valid for a technology implemented as a pilot in a given local setting, the TAF results can be used to determine the scaling-up potential of this technology in a similar context. It gives an assessment of the technology, but also motivates and inspires dialogue between stakeholders and has the potential to inform and advise sector/policy development and larger projects/initiatives on scaling-up the particular technology and its upscaling in a broader context.

TAF IMPLEMENTATION FOR TECHNICAL INNOVATIONS // FIGURE 3

GIZ has already tested and implented the TAF in different countries to assess the scaling-up potential of various technical innovations, for example in:

Afghanistan: → www.susana.org/en/knowledge-hub/resources-and-publications/library/details/3396

Philippines: → www.susana.org/en/knowledge-hub/resources-and-publications/library/details/3397

Uganda: → www.susana.org/en/knowledge-hub/resources-and-publications/library/details/2893

FOR FURTHER GENERAL INFORMATION ABOUT THE TAF TOOL, PLEASE CONTACT:
sanitation@giz.de

LIST OF ABBREVIATIONS

BMZ	German Federal Ministry for Economic Cooperation and Development
CRS	Contraceptive Retail Sales Nepal
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HECAF	Health Care Foundation Nepal
JMP	Joint Monitoring Programme
LMIC	Low and Middle Income Countries
MHM	Menstrual Health and Hygiene Management
MHM PA	MHM Practitioner Alliance Nepal
NGO	Non-Governmental Organisation
NPR	Nepalese Rupee
RPN	Recovery Programme Nepal
SDG	Sustainable Development Goals
SHRH	Sexual Health and Reproductive Health
S2HSP	Support to Health Sector Programme
TAF	Technology Applicability Framework
UN	United Nations
UNICEF	United Nations Children's Fund
VDC	Village Development Committee
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

LIST OF FIGURES

1. INTRODUCTION

BACKGROUND // WHY LOW-COST SANITARY PAD MACHINES AND WHY FREE PADS FOR ALL SCHOOLS IN NEPAL?

In this publication, MHM stands for menstrual health and hygiene management. This definition focuses on the broader element of health compared to the original definition by the WHO and UNICEF Joint Monitoring Programme for Drinking Water, Sanitation and Hygiene (JMP) (see below) and the more specific focus on hygiene. The term menstrual hygiene management originated from the Water, Sanitation and Hygiene (WASH) sector in 2012 as part of its advocacy to incorporate MHM into the Sustainable Development Goals (SDG). Broadly speaking, it refers to the way in which girls and women deal or can deal with their menstruation.

Women and adolescent girls using a clean menstrual management material to absorb or collect blood that can be changed in privacy as often as necessary for the duration of the menstruation period, using soap and water for washing the body as required, and having access to 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, 2018).

In many countries worldwide, as well as in Nepal, Menstrual Health and Hygiene Management is a goal that has not yet been achieved. Various reasons account for insufficient MHM. For one, menstruation is still considered a taboo in many places and menstruating women and girls are often stigmatised. Moreover, institutions in Low and Middle Income countries (LMICs) including Nepal often lack access to adequate sanitary facilities, WASH, hygiene materials and information on the subject. As a consequence, women's and girls' sexual and reproductive health, psychosocial and physical health, their educational opportunities, equality as well as their participation in school, everyday life and their opportunities in the labour market are at risk. Studies have also shown that adolescent girls often lack appropriate information about their sexual and reproductive health and appropriate MHM which has a direct impact upon adolescent girl's schooling, with absenteeism of menstruating girls as high as 53% in Nepal (Nepal Fertility Care Centre, 2012). Poor sanitation facilities and non-availability of water supply has exacerbated poor menstrual hygiene among adolescent girls. Only 28% of public schools in Nepal have separate facilities with toilets for girls. In 2011, 38% of households did not have a toilet. In 2015, only 46% of the population in Nepal had access to improved sanitation facilities. (Karki et al., 2017).

While MHM is not represented as a single objective in the SDGs, it is important to note that it is identified in the sub-objectives (targets) and is essential for meeting SDG 3 (health), SDG 4 (education), SDG 5 (equality), SDG 6 (sanitation and water), SDG 8 (work and growth), and SDG 12 (consumption and production).

On May 3rd 2019, the President of Nepal announced the distribution of free sanitary pads for all 22,000 public schools in Nepal and this decision was confirmed in his budget speech in June 2019. Paragraph 38 of the 2019/20 Budget Speech read, "Budget has also been arranged for providing sanitary pads free of cost to girl students attending community schools across the country." Since the schools are under the jurisdiction of local governments, the federal government will distribute the budget for providing free sanitary pads to local governments and they will then manage the distribution respectively.

This commitment to provide free pads to all public schools is the peak in a slew of activities around MHM in Nepal since 2015 and shows the country's ambitions to allow girls and women to live and menstruate safely and with dignity, respect and confidence. In 2005, Chhaupadi – the ancient practice of banning women during their period – was prohibited, and criminalized in 2017 in Nepal. In 2017, the government drafted a national policy on dignified menstruation which is still in the process of being approved by the cabinet.

MHM PRACTITIONER ALLIANCE NEPAL

MHMPA
PRACTITIONERS' ALLIANCE NEPAL

The MHM Practitioner Alliance Nepal (MHM PA) was the result of Nepal's first national conference on adolescent health and development in 2016 to coordinate efforts of organisations working on MHM. From just a handful of actors in 2016, the MHM PA has grown rapidly and now consists of around 80 initiatives throughout the country. Amongst the approximately 100 members are universities, NGOs, INGOs, UN agencies and individuals like activists and professors. GIZ has supported the establishment process of the MHM PA and since then has continued to play a supporting role. The MHM PA is working on policy advocacy, project implementation of MHM, education, and WASH among other measures and supports key ministries on policy formulation to improve MHM. It nominated representatives for the high level Task Force, commissioned to operationalise the political commitment of providing free sanitary pads to all public/community schools into a functioning and successful programme. The MHM PAs main advice for the procurement of sanitary pads is not to use products containing plastic and proposes to create a policy that exclusively allows 100% compostable or biodegradable pads to be bought under the programme.

EARTHQUAKE

The starting point for the movement that would change the way many Nepalis thought and spoke about menstruation was the devastating 7.8 earthquakes in 2015. It cost many people their lives, family members and friends were lost, their homes were destroyed and many were forced to live in temporary shelters without adequate water and sanitation or health care facilities. In those extreme circumstances, it became increasingly difficult for many women and girls to deal with their menstruation and MHM made it to the agenda of disaster relief agencies, NGOs and political actors for the first time in Nepal.

Studies have shown that disasters affect men and women differently[1] and the WHO reports that women and children are particularly affected by disasters, accounting for more than seventy-five percent of displaced persons (Neumeyer & Plümber, 2007, p.1). The aftermath of a disaster leads to a lack in healthcare services, which makes women vulnerable to reproductive and sexual health problems (International Union for Conversation of Nature, n.d.). As devastating as the earthquake was for many people in Nepal, it highlighted and exacerbated the challenges of MHM faced by girls and women and triggered a new awareness about these challenges and subsequently became a catalyst for change (Evans & Broch Alvarez, 2019, p.14).

Earthquake in Nepal in 2015 // Figure 4

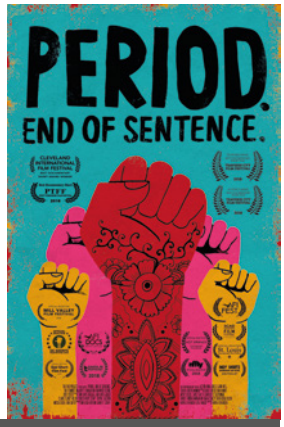
HISTORY // "PAD MAN" & THE LOW-COST SANITARY PAD MACHINE

Arunachalam Muruganantham, also known as the "Menstrual Man" or "Pad Man" is a social entrepreneur from India who has started a "menstrual movement" in his home country by inventing a simple and easy to operate machine that can produce low-cost sanitary pads. He is the founder and owner of Jayaashree Industries and sells low-cost sanitary pad machines all over the world.

In 1998, as a newly married man, Mr. Muruganantham was shocked to learn his wife was using old rags to deal with her menstrual flow and was inspired to find viable alternative solutions. His goal was to increase the use of sanitary pads in rural and hard to reach areas and he started experimenting with producing his own sanitary pads. After several years of research and trial and error, his idea gained impetus and he was able to successfully design a prototype of the low-cost sanitary pad machine (Sivakumar, 2017, p.18).

To scale up his idea, Mr. Muruganantham went all over India to talk to women in rural settings and was able to generate momentum. Several women's cooperatives and rural non-profits across India purchased the machines manufactured by Mr. Muruganantham and started setting up their own sanitary pad manufacturing units.

Mr. Muruganantham's innovation has spread like wildfire not just in India, as the now low-cost sanitary pad machine has been exported to several countries and similar machines have been built by other producers. The "Pad Man" has received many awards for his invention and was also named by TIME magazine in 2014 as one of the 100 most influential people in the world. His story has been told in the Bollywood movie "Pad Man" and the 2019 Oscar premiered short documentary "Period. End of Sentence" illustrates how the low-cost sanitary pad machine has changed the lives of many women in India.



Filmposters // Figure 6

GIZ recognises the importance of improving MHM in LMICs and has taken on the topic since 2015. Nepal's Support to Health Sector Programme (S2HSP) has been collaborating with Mr. Muruganantham since 2015 and has explored low-cost sanitary pad machines as an inclusive business model for rural women in Nepal. The goal is to establish low-cost sanitary pad production units in rural communities within GIZ-supported districts in order to promote income-generating activities for women's groups and to spread information about the technology for replication and upscaling. The GIZ Sector Programme Sustainable Sanitation is keen on taking the agenda forward globally and serves as a platform that provides access to knowledge and facilitates interaction between GIZ programmes on MHM within the Health, Education and WASH sectors (Lutters, Sivakumar & Bäurle, 2015).

Mr. Muruganantham illustrating the sanitary pad machine // Figure 5

KEY FEATURES // LOW-COST SANITARY PAD MACHINE

EASY TO USE

As shown in figure 8, there are seven easy steps involved in making a sanitary pad. The compacted cellulose sheets are broken down into pieces and are then put into a grinder, which produces a white fluffy cotton-like substance. The cotton fluff is then placed in the mould and pressed to give the sanitary pads their rectangular shape. This pressed and moulded cotton is covered with a polyethylene film which acts as a leak-proof absorbent layer. Then the material is wrapped in a gauzy cloth and it is sealed with heat through a sealing machine. Once sealed, several sanitary pads are collected and placed in the ultraviolet chamber to sterilize the pads. After the disinfection process, the pads are finally packed in colourful packets of eight.

LOW-COST

The semi-automatic and easy to transport machine costs approximately 3300 Euro (including raw materials and importation) and is 3.5 meters x 3.5 meters. As the machine is very compact, it can easily fit in small spaces. It works on single phase electricity and has a production capacity of two pads per minute. Due to the relatively low-cost of the machine, it is affordable for small-scale entrepreneurs, women's cooperatives and self-help groups. The main idea behind this innovation was to make sure that every woman in rural and inaccessible surroundings had access to sanitary pads that were not just affordable, but also to provide them with a source of income.

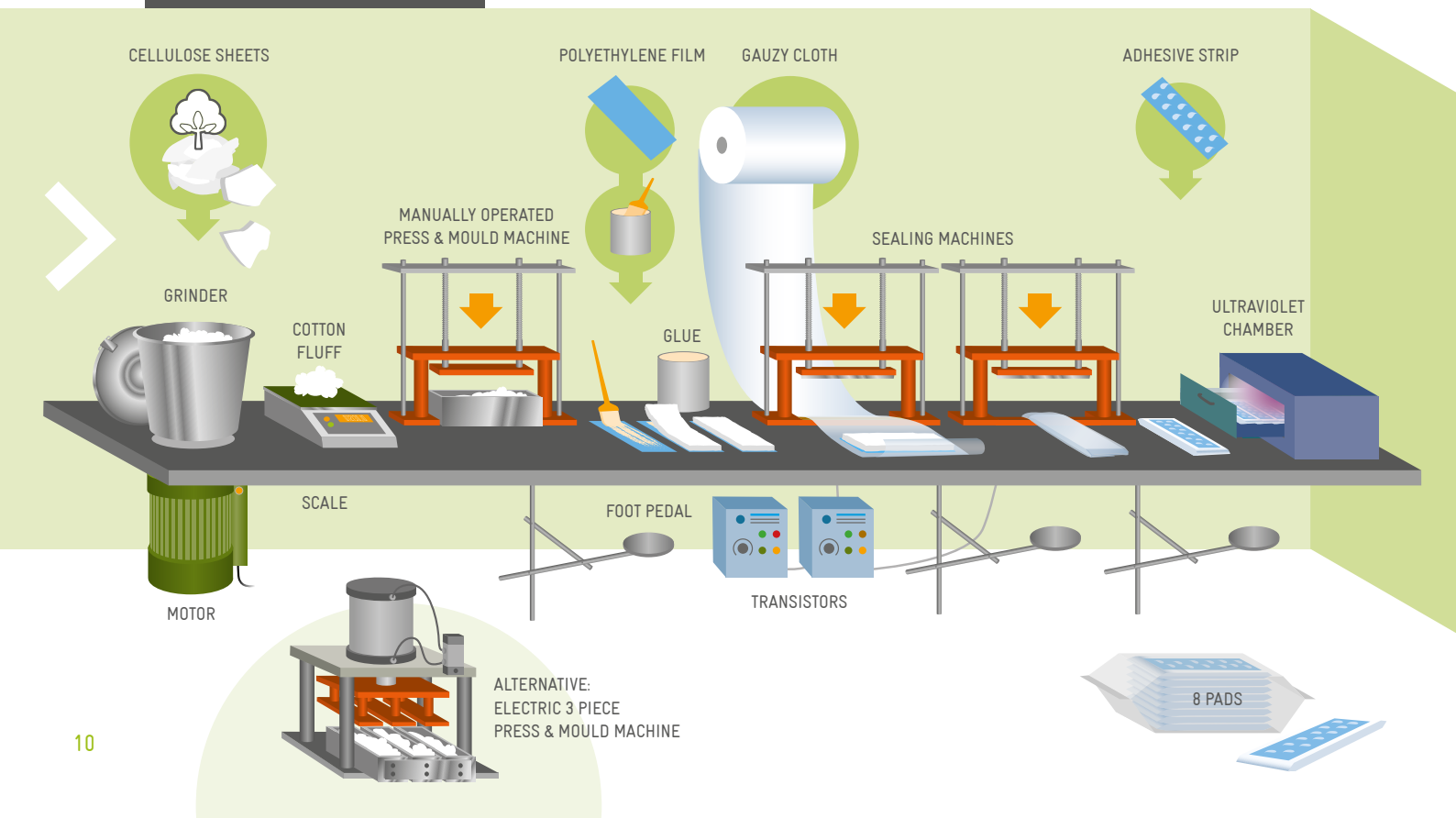
LOCAL PRODUCTION

Instead of starting a business and creating a monopoly on low-cost sanitary pads in the rural market, Mr. Muruganantham started a manufacturing business to produce his machines in large numbers. He sells them to entrepreneurs and women's cooperatives who support their community by starting local production and making sanitary pads available in rural areas. The semi-automatic machines can produce approximately 1,600 pads per day (480,000 per year) at a cost of six Nepali NRP (around 0.05 Euros) per pad.

LOW IMPACT ON THE ENVIRONMENT

The low-cost sanitary pad machine is capable of manufacturing two varieties of sanitary pads – regular and maternity, with the latter being for mothers who have just given birth. Depending on the raw material that is used in the production, the sanitary pads can be produced with completely biodegradable materials and have a low impact on the environment.

Low-cost sanitary pad machine // Figure 7

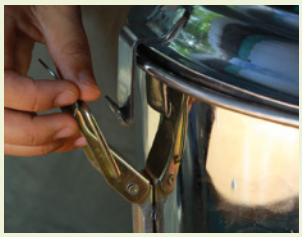


THE 7 PRODUCTION STEPS OF THE LOW-COST SANITARY PAD MACHINE // FIGURE 8

1

Break the compacted cellulose sheets into piecees.

Put them in a the grinder.



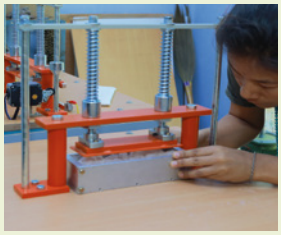
Close properly.

Grind until a white fluffy cotton-like substance is produced.

2

Weigh the cotton fluff: 12 gr. per sanitary pad

Place one portion of cotton fluff in the mould.



Place the mould in the press machine.

Use the foot pedal to press.

The rectangular basis of the sanitary pad is shaped. Take it out of the mould.

3

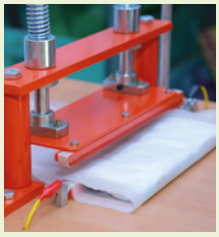
Brush 1 polyethylene film with glue (adhesive for best quality stickers).

Glue the polyethylene film and the basis of the sanitary pad together.

4

Wrap the components in gauze.

Wrap around one time.



Cut the edges with the sealing machine. Use the foot pedal.

5

Shorten and seal the short edges also with the hot band of the sealer.

6

Glue the adhesive strips to the sanitary pad.

7

Place your sanitary pads in an ultraviolet chamber.

Pack them afterwards into colourful packets of eight.

CONGRATULATIONS. YOU PRODUCED A LOW-COST SANITARY PAD

CONTEXT // PILOTING, COMMUNITY INVOLVEMENT

German Development Cooperation through GIZ has been working on menstrual health issues in Nepal since 2015. The programme is funded by the BMZ and Nepal's Ministry of Health and Population is the main implementing agency. After the earthquake, the Ministry of Health and Population assigned the Recovery Programme Nepal (RPN) to support the reconstruction of damaged health care facilities and school buildings in the districts of Nuwakot, Rasuwa, and Dhading. As part of these reconstruction efforts, the RPN also supported the economic development of communities through vocational training, especially for women. Through the S2HSP, German Development Cooperation worked with the RPN in Semjong Village Development Committee (VDC) in Dhading district and Sikre VDC in Nuwakot district to implement small, women-led start-up initiatives to assist with recovery efforts. One of these initiatives was the production of low-cost sanitary pads, using the innovative design of Mr. Muruganantham's manufacturing system.

GIZ facilitated the procurement of two of these machines and provided technical training with the support of Mr. Muruganantham's technicians to two women's cooperatives for the production and supply of the raw materials for low-cost sanitary pads. The first of these was the Sana Kishan Women's Cooperative in Dhading district, and the second was the Namaste Agriculture Women Cooperative in Nuwakot district. Both cooperatives are led entirely by women and each production process provides employment for 3 to 9 women.

Mr. Muruganantham's machines arrived in May 2016 and were installed in Semjong in August. The production building was constructed in November 2016 and inaugurated by a delegation from the BMZ. The machine became functional in December following a trial and error process. However, it was only from mid-January 2017 that full-time production began with employed staff. GIZ supported the cooperatives from 2015 until 2018. Since then, they have been operating the sanitary pad production independently.

The main idea behind this project is to support women in remote rural areas to obtain access to affordable sanitary pads while simultaneously providing them with a source of income and economic empowerment through a sustainable and scalable business model. By engaging women in the manufacturing and selling of sanitary pads, the initiative also helps to address the culture of restrictions, silence and taboos around menstruation within their community.

TECHNOLOGY APPLICABILITY FRAMEWORK // OBJECTIVES

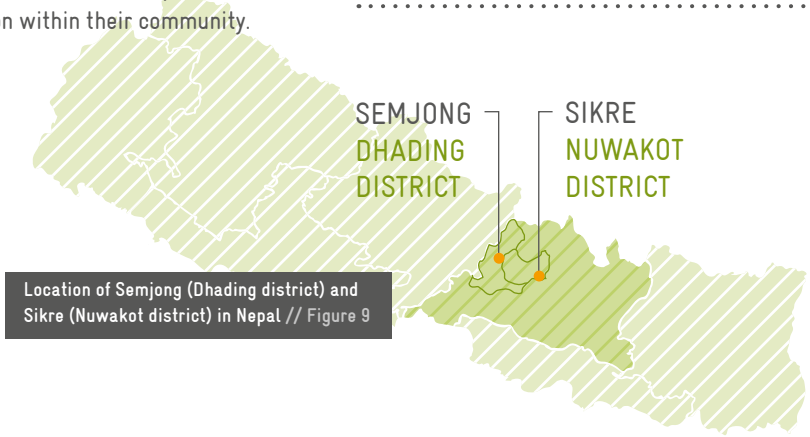
To assess the future applicability and appropriateness of the low-cost sanitary pad machine, the Technology Applicability Framework (TAF) has been applied. The TAF helps to understand if any technology implemented as a pilot fulfils the criteria for further implementation and scaling-up, by assessing the technology through the perspective of three key stakeholder groups engaged with the implementation of the technology: user/buyer, producer/provider and regulator/investor/facilitator.

The main question that was clarified during the assessment was: Does the low-cost sanitary pad machine produce local and sustainable sanitary pads in a model setting and does the machine have the potential to scale up and provide sustainable and locally produced low-cost biodegradable sanitary pads to all public/community schools in Nepal?

This report captures the findings of an evaluation of the low-cost sanitary pad machine in the context of the GIZ S2HSP project in Nepal after around 3 years of operation.

OBJECTIVES OF THE TAF APPLICATION

- Assessing the need for the low-cost sanitary pad machine
- Assessing the circumstances of production, promotion and usage of the technology
- Sharing experiences about the low-cost sanitary pad machine including potential challenges and further necessary improvements
- Assessing the potential of the low-cost sanitary pad machine to address bottlenecks in the accessibility of sustainable and locally produced MHM products in Nepal
- Assess the readiness of the sector to take up and scale up this technology in the context of the recent commitment to provide free sanitary pads to all public/community schools in Nepal



Location of Semjong (Dhading district) and Sikre (Nuwakot district) in Nepal // Figure 9

2. METHODOLOGY

FIELD ASSESSMENT // DIMENSIONS, KEY PERSPECTIVES, 18 INDICATORS

Questionnaires[3] were adopted from the TAF questions, which were modified in order to fit the current context of the low-cost sanitary pad machine. Questions were divided into six sets for three key stakeholder groups: user, producer, and facilitator. One set for the user/buyer (Women's cooperative in Semjong), a set for the producer (Jayaashree industries) and two sets for the regulator/facilitator/investor (ministries involved in Task Force, GIZ).

Each set of questions was formulated in line with the six sustainability dimensions:

- Social
- Economic
- Environmental
- Institutional & legal
- Skills & know how
- Technology

Along these six sustainability dimensions, specific indicators were developed on each key perspective to further narrow areas of the assessment. It is important to understand that each of the indicators is of specific relevance[4] to determine the applicability, scalability and sustainability of the technology being assessed.

The assessment was conducted in a series of interviews[5] with stakeholders on different key perspectives starting July 24 and running through August 4, 2019. The interviews were conducted in a semi-guided process according to the respective key stakeholder group. The president of the Semjong women's cooperative represented the first group (user) and additional interviews with Radha Paudel (Radha Paudel Foundation) and GIZ staff contributed to the user/buyer perspective. The producer (Jayaashree Industries) was interviewed via telephone. The third group was the biggest and included interviews with representatives from the ministries involved in the Task Force, GIZ staff and other experts, such as the Coordinator of the MHM PA and Health Care Foundation Nepal (HECAF), to complete the different perspectives of the assessment.

[3] See annex page 28ff for questionnaires
[4] See annex page 34f for the relevance of each indicator for the assessment
[5] See annex page 35 for the schedule of activities for the assessment

KEY PERSPECTIVES

SUSTAINABILITY DIMENSIONS	USER/BUYER Women's Collectives (Radha Paudef) GIZ S2HSP	PRODUCER/PROVIDER Jayaashree Industries	REGULATOR/FACILITATOR Regulator: Task Force (ministries of health, education & water), Facilitator/Investor: GIZ S2HSP, Facilitators: HECAF, MHM PA
SOCIAL	**(1)** Need for the low-cost sanitary pad machine	**(2)** Need for promotion of the low-cost sanitary pad machine	**(3)** Need for change in perception
ECONOMIC	**(4)** Affordability	**(5)** Profitability	**(6)** Supportive financial mechanisms
ENVIRONMENTAL	**(7)** Potential negative impacts on the environment and the user by operating the low-cost sanitary pad machine	**(8)** Potential negative impacts in the production of the low-cost sanitary pad machine and sourcing of raw materials for production	**(9)** Potential negative impact of scaling-up
INSTITUTIONAL & LEGAL	**(10)** Structures for management and accountability of the pad production	**(11)** Legal regulation and requirements for import of low-cost sanitary pad machine, spares and raw material	**(12)** Alignment with national strategies and compliance to national standards
SKILLS & KNOW HOW	**(13)** Skill set of user in low-cost sanitary pad machine management	**(14)** Level of technical and business skills	**(15)** (cross-)sectoral capacity for scaling-up of low-cost sanitary pad machine and follow-up
TECHNOLOGY	**(16)** Reliability of low-cost sanitary pad machine	**(17)** Viable supply chains for low-cost sanitary pad machine material, spares and services and raw materials	**(18)** Support mechanisms for low-cost sanitary pad machine scaling-up

18 INDICATORS FOR LOW-COST SANITARY PAD MACHINE ASSESSMENT // FIGURE 10

SCORING // PRESENTATION, WORKSHOP, DISCUSSION

After all interviews were completed, a scoring workshop with some of the interviewees was conducted in Kathmandu to assure that all interview participants confirmed that their expressed view had been properly represented in the assessment and to stimulate discussion and debate among the different stakeholders with regard to assessment findings. Special attention was given to identifying potential impediments to sustainability and the scaling-up process of the low-cost sanitary pad machine. The results were presented to the participants by indicator (Fig. 10), starting with the social dimension and culminating with the technology dimension. The scoring process used a standard traffic light system to score each of the 18 specific indicators with respect to scalability and to present the view of the three key stakeholder groups, namely user/buyer, producer/provider and regulator/facilitator/investor (Fig. 11). In case there were large discrepancies between the scores, participants were asked to expound on how they scored the respective indicator to encourage further discussion and come to an agreement on the scoring. Eleven representatives attended the workshop on August 5, 2019 to discuss the preliminary results.

TRAFFIC LIGHT SYSTEM USED TO SCORE TAF INDICATORS // FIGURE 11

- \+ High value, neutral or positive, supportive characteristics
- 0 Potential impact, could become critical, needs follow-up
- − Low value, negative, critical, hindering characteristics
- ? Unclear information, should be clarified

Assessment scoring workshop proceedings // Figure 12 & 13

3. RESULTS

SUSTAINABLE DIMENSIONS, KEY PERSPECTIVES, INDICATORS & SCORING

SOCIAL

USER / BUYER: (1) NEED FOR LOW-COST SANITARY PAD MACHINE

In May 2019, Nepal's President announced an initiative to provide free sanitary pads to allpublic/community schools. This commitment was confirmed in the budget speech in June 2019. Especially in remote areas, commercially produced and low-cost sanitary pads are often unavailable or too expensive and women's cooperatives have confirmed the need for the local production of sanitary pads. The existing number of operational low-cost sanitary pad machines is very limited and does not provide enough pads to fully service all public/community schools in Nepal. The need has been expressed to map out already existing actors across Nepal who are producing sustainable and local low-cost sanitary pads to estimate the nationwide capacity.

All actors agreed that the low-cost pad machine can potentially be used on a bigger scale and has the potential to provide at least a portion of the pads that are to be distributed in schools. The low-cost sanitary pad machine pilot has already provided jobs, especially for rural women and has made sanitary pads accessible in remote areas, where women traditionally use reusable cloths. Due to taboos around menstruation, they often do not manage to wash and dry the cloth properly. This is especially challenging during monsoon season when it is also more difficult to procure commercial pads from farther distances due to difficult road conditions. Some actors also see the potential to include marginalised groups (e.g. people with disabilities) in the pad production. One cooperative member mentioned the demand for thinner pads and for pads with wings. This is especially relevant in the urban context where alternative commercial pads have been available for quite some time.

SCORING +

PRODUCER / PROVIDER: (2) NEED FOR PROMOTION OF THE LOW-COST SANITARY PAD MACHINE

The producer expressed limited interest in promoting the low-cost sanitary pad machine. They rely on word of mouth and the current momentum. They regard the Academy Award winning movie "Period. End of Sentence" as "free advertisement" and currently benefit from the relevance of the topic in politics and media all over the world.

SCORING +

REGULATOR / FACILITATOR: (3) NEED FOR CHANGE IN PERCEPTION

The public perception towards MHM began to change after the earthquake in 2015. By committing to distributing free pads at all public/community schools throughout Nepal in 2019, the government has ultimately recognized MHM as a relevant public health topic. The establishment of a high level Task Force to work on the respective policy supports the relevance of the topic. However, the policy of dignified menstruation still has to be approved by the cabinet and a majority of actors agreed that just providing a menstrual sanitation product will not be enough. Additionally, awareness and health promotion are needed to achieve a real change in attitudes and behaviours.

SCORING +

ECONOMIC

USER / BUYER: (4) AFFORDABILITY

In Nepal, women's cooperatives and other groups generally have the power to accumulate large sums of money and can potentially invest in low-cost sanitary pad machines. The cooperative in Semjong has received the machine and a starting supply of materials through GIZ as a donation and has so far turned a profit by selling the produced pads and has been able to pay for the electricity for the low-cost sanitary pad machine through these profits. So far, minor repairs have been done by the cooperative members themselves, as external repair is too expensive and the issues have been easily fixed.

Recently, one cooperative has expressed difficulties in paying salaries, as production had to be decreased due to unavailability of raw materials and spare parts. This will be further elaborated on in indicator 17.

SCORING 0

PRODUCER / PROVIDER: (5) PROFITABILITY

According to the producer, they generate enough profit from the sale of the low-cost sanitary pad machine to sustain the company. They emphasize that Mr. Muruganatham is a social entrepreneur and that the company is need- and impact-based instead of revenue oriented. The potential buyer's application is analysed by the producer to address rural women's groups for the access to low-cost sanitary pads, determine the potential success and ensure the machine will actually be used for a long time. The initial set up of the machine also includes a training on how to operate and maintain the machine. The current price of the low-cost sanitary pad machine does not include after sales services and the producer expressed no interest or ability to provide a systematic after sales service to keep costs as low as possible. Providing on-site support or sending personnel would be too cost-intensive. They insist that the design is very simple and that needed repairs can be done by local skilled craftsmen in the respective areas. They also offer training of local technicians.

SCORING – ?

REGULATOR / FACILITATOR: (6) SUPPORTIVE FINANCIAL MECHANISMS

The funding for sanitary pad distribution has been included in the government's 2019/2020 budget. It consists of 30,000 NPR (approximately 236 EUR) per municipality, which – on its own – is not enough to import and distribute menstrual products to all public/community schools. There are development funds at the local level that could be used. The funds are allocated by the federal government to every municipality and can be spend on different development areas as per their priority. The Government of Nepal already subsidizes certain products, e.g. cooking stoves and could potentially expand subsidization to the low-cost sanitary pad machine or the import of sustainable sanitary pads. The biggest obstacle is Nepal's import taxes on raw materials needed to produce pads locally. Furthermore, the budget has only been allocated forthe running fiscal year and could potentially be eliminated again. This makes long-term planning difficult.

ESTIMATED BUDGET NEEDED

1.5 million school going girls in Nepal
15 pads per month and girl (calculated conservatively)
1,500,000 girls x 15 pads x 12 months = 270,000.000 pads
8 pads per package // 270,000,000 pads : 8 = 33,7 million packages of pads per year
cheapest pads: 40 NRP per package // 33.7 million x 40 = **1,350,000,000 NRP/year** (approximately 10.6 million EUR // only for the pads, not including transport, logistics etc.)

This rough calculation shows that creating a local sanitary pad production is financially more viable than continuously importing products. In addition, the aspect of local job creation should be highlighted, as this offers a further argument why more sanitary pad machines should be installed in the more than 750 municipalities.

SCORING 0 ?

ENVIRONMENTAL

USER / BUYER:
(7) POTENTIAL NEGATIVE IMPACT ON THE ENVIRONMENT AND THE USER BY OPERATING THE LOW-COST SANITARY PAD MACHINE

All actors have agreed that the use of the machine neither has a negative impact on the user of the machine nor the environment. The potential noise impact has been dealt with beforehand by constructing a building specifically for the sanitary pad production.

SCORING +

PRODUCER / PROVIDER:
(8) POTENTIAL NEGATIVE IMPACT IN THE PRODUCTION OF THE LOW-COST SANITARY PAD MACHINE AND SOURCING OF RAW MATERIALS FOR PRODUCTION

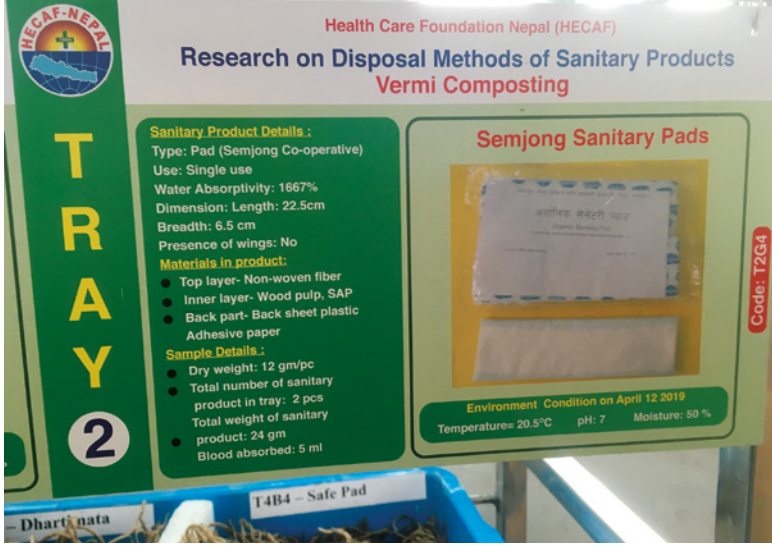
Materials needed for the production of the low-cost sanitary pad machines are locally available in most places. Especially for metal components, the producers are using scrap materials that would otherwise not be utilised. The raw materials for pad production are not locally available in Nepal and have to be imported from neighbouring India. Often, the cotton used for production is not 100 % organic, even though some suppliers claim it is, due to insufficient standardization.

SCORING +

REGULATOR / FACILITATOR:
(9) POTENTIAL NEGATIVE IMPACT OF SCALING-UP

The machine can produce 100% compostable pads if the right materials are used. So far, the cooperative produces partially compostable ones; the inner parts degrade completely, whilst the outer layer remains. Related to this, the two biggest concerns are waste management and the use of potentially unsustainable or even harmful raw materials. A further problem is the lack of standards regarding the ingredients of MHM products and their disposal (see right-hand side). People might start using pads, just because they are free and stop using reusable options, even though they can potentially be safe if used, cleaned and disposed of in a hygienic manner. The environmental risk would be highest if commercial pads are used to fulfill the government's promise.

SCORING ?



EXCURSE: WASTE MANAGEMENT

A single woman can generate up to 125 kg of non-biodegradable waste through her menstruating years and worldwide, millions of non-compostable sanitary pads are making their way into urban sewerage systems, landfills, rural fields and water bodies.

Given enough time, nearly every material will biodegrade at some point. The length of that process depends on environmental parameters, for example temperature and humidity. Plastic elements of menstrual products often take more than 250 years to fully decompose. To ensure safe waste management, clear definitions are necessary to ensure customers are not mislead by allegedly compostable or biodegradable products. Recently, several Indian companies have used this lack of regulations and claim their products were organic or biodegradable, even though their products were conventionally produced and did not consist of organic materials.

There are existing international standards for compostable plastics: ASTM D6400 in the US and EN13432 in Europe. Materials under those certifications will disintegrate within 12 weeks and biodegrade at least 90% within 180 days. They must however be disposed of in designated municipal facilities, as the degradation process requires the higher temperatures of industrial settings than can be achieved in a compost at home. The use of biodegradable or compostable menstrual products therefore only makes sense in a setting where a functioning municipal waste management setting is in place that includes compost. Already, the management of menstrual waste in Nepal is lagging behind the fast growing disposable product market.

A special risk is posed by oxo-degradable plastic, that is often confused with biodegradable plastic. It is conventional plastic mixed with an additive in order to imitate biodegradation, which means it disintegrates into smaller microplastic particles instead of breaking down at the molecular or polymer level like biodegradable and compostable plastic (Greendot, 2019).

INSTITUTIONAL & LEGAL

USER / BUYER: (10) STRUCTURES FOR MANAGEMENT AND ACCOUNTABILITY FOR LOW-COST SANITARY PAD MACHINE

Out of the two cooperatives, only one has managed to establish clear roles for the management and the production of sanitary pads. They do however experience some challenges as they have had high personnel turnover recently. The reasons for leaving the cooperative were for example marriage, leaving for education or finding better paying work at other places. Several actors proposed alternatives to the cooperative organisational structure to ensure that pad production is a central focus and not only one element of many to earn an income. When the low-cost sanitary pad machine is operated in a (social) business and the financial stakes are higher for the users of the machine, accountability and the interest in keeping the production running are higher as well.

SCORING 0 ?

PRODUCER / PROVIDER: (11) LEGAL REGULATION AND REQUIREMENTS FOR IMPORT OF LOW-COST SANITARY PAD MACHINE, SPARE PARTS AND RAW MATERIALS

Exporting the machine to other countries is not a problem. The producer is registered at the Indian Ministry of Commerce and has an export license. They have exported the machine to 27 countries so far. The quality control of the machines is done internally by the producer's technicians. Before selling the machine, they assemble it, conduct a test-run and disassemble it for transportation. The producer also exports raw materials alongside the machine or refills the raw material stock on demand. Whilst the machine could be used with alternative fibres, the producer has not experimented with alternative raw materials yet and fears the quality of the pads could suffer.

SCORING +

REGULATOR / FACILITATOR: (12) ALIGNMENT WITH NATIONAL STRATEGIES AND COMPLIANCE TO NATIONAL STANDARDS

In Nepal, there are currently no quality standards for MHM products or machines that produce them and the certification of sanitary pads is not currently possible, as they are not listed in the respective product categories of the country. It is therefore not possible to certify pads as biodegradable or organic in Nepal. However, the government has emphasized that the sanitary pads that will be used for the free distribution in schools have to be 100% biodegradable/compostable or reusable, so as not to add to the waste problem.

SCORING 0 ?

Glueing the polyethylene film and the basis of the pad together // Figure 14

Employee operating the shortening and sealing process machine // Figure 15

Checking the quality of the sanitary pad // Figure 16

SKILLS & KNOW HOW

USER / BUYER: (13) SKILL SET OF USER IN LOW-COST SANITARY PAD MACHINE MANAGEMENT

All members of the two cooperatives have received training on operating the machine and on business development and management skills. Only the Semjong cooperative has managed to divide roles and responsibilities to the staff. They have different job descriptions, including pad production, bookkeeping, customer relations and marketing. The women have also divided the steps of the pad production among themselves. However, a few challenges have come up: Out of two people who are comfortable in their ability to press the pads, only one is left at the cooperative. Furthermore, almost all women are afraid of doing maintenance tasks on the machine, like cleaning or filling air in the compressor. Further, the person who was initially trained to maintain the machine has left and now charges the women's cooperative for his service.

SCORING 0

PRODUCER / PROVIDER: (14) LEVEL OF TECHNICAL AND BUSINESS SKILLS

According to the producer, they have enough trained people to build more machines and to provide training. However, keeping in touch with previous customers poses a problem due to the amount of machines sold and the comparably limited number of staff at Jayaashree Industries. This causes delays for the delivery of raw material and spare parts. It seems that there is no system in place to keep an overview of or track past customers. There is also no organised feedback system and the sale of the machine is organised by perceived potential instead of market principles.

SCORING 0

The packaged sanitary pads // Figure 17

REGULATOR / FACILITATOR: (15) CROSS-SECTORAL CAPACITY FOR SCALING-UP OF LOW-COST SANITARY PAD MACHINE AND FOLLOW UP

All involved actors are motivated to start the distribution as soon as possible and the current discussion on waste in Nepal in general gives good leverage. However, the potential to scale up the low-cost sanitary pad machine model depends on the decision of the government in terms of product standards (reusable, compostable/biodegradable, commercial) and distribution mode (central or local). Whilst the government's commitment can potentially create a safe market for local sanitary pad production, there is an independent market for sanitary pads. Especially in remote areas regular access to MHM products is not a given and local low-cost production could have the potential to change that.

SCORING ?

EXCURSE: LOCAL VS CENTRAL (FEDERALISM)

The 2015 Constitution of Nepal, replacing the Interim Constitution from 2007, defines the country as a federal democratic republic with three tiers of government: local, provincial, and federal. The new federal structure is an opportunity to change the centralized mindset of many people in Nepal through effective delivery of services at the local level and to promote local democracy in the country. However, the implementation of federalism poses a variety of challenges, for example the communication and coordination between the three tiers of government and the division of roles and decision-making power, the management of bureaucracy on the various levels and the allocation and distribution of finances and funding between the provinces.

The programme to distribute free sanitary pads to all public/community schools in Nepal is currently a flagship programme of the government and the budget has therefore been decided and allocated by the Ministry of Finance. The prioritization of this project by the government shows that MHM has been recognized as a relevant public health topic in Nepal. However, discussions on roles and responsibilities also illustrate the difficulties that come with changing from a centralist to am federal system. Instead of organising central procurement and distribution of sanitary pads, this programme could be a chance to use the new structures and use the local government's enthusiasm about their newly gained decision-making power and their expertise on already existing local structures and programmes that could be integrated. After 2015, a variety of initiatives that deal with MHM topics have come to Nepal and they often work on the ground and with local governments (Bhattarai, 2019).

TECHNOLOGY

USER / BUYER: (16) RELIABILITY OF LOW-COST SANITARY PAD MACHINE

In the Semjong cooperative, no large repairs have so far been needed and general maintenance and smaller repairs have been done by the cooperative members. Currently however, parts of the machine cannot be used due to issues with the compressor. In the second cooperative, a production error in the shredder of the machine has delayed the entire process several times. During the process of sending the part for repair several times, people have lost motivation to produce pads with the machine altogether.

SCORING 0

PRODUCER / PROVIDER: (17) VIABLE SUPPLY CHAIN FOR LOW-COST SANITARY PAD MACHINE MATERIAL, SPARES AND SERVICES AND RAW MATERIAL

The machine can be ordered through Jayaashree Industries relatively spontaneously. However, the machine cannot be bought by everyone. All inquiries are checked by the producer regarding motivation and potential. The sale of the machine is not purely financially oriented, but aims to sell the machine to people who will successfully use them for a long time and include marginalised groups. The producers also provide some spare parts upon delivering the machine, as they know which parts wear down quickly. The producers emphasis is on keeping the machine as simple as possible to minimize the need for spare part supply and do not deliver spare parts, as they consider them to be available locally everywhere. New raw material can be ordered via mail or telephone and is delivered.

According to several actors, contact with the producer has been irregular. The cooperative in Semjong procures their materials via a supplier in Kathmandu, but the supplier cannot supply the correct materials, especially biodegradable pulp. The high taxation on raw material imports from India make it impossible for Nepali companies to compete with Indian sanitary items that are taxed significantly lower.

SCORING −

REGULATOR / FACILITATOR: (18) SUPPORT MECHANISMS FOR LOW-COST SANITARY PAD MACHINE SCALING-UP

The commitment of the government is taken seriously, as the formation of the high level Task Force and high number of meetings show. GIZ supported the women's cooperatives from 2015 until late 2018 and will continue to work with this initiative. Other organisations have also funded the import of low-cost sanitary pad machines to Nepal, one of which is the Radha Paudel Foundation. There is the potential to import more machines through politician's constituencies, like in the case of Bina Magar, the Minister for Water Supply. Further options are using microfinancing services or savings and credit cooperatives..

SCORING +

Two employees at the Dhading production site // Figure 18

Demonstrating the gauze wrapping process (step 4) // Figure 19

4. SUMMARY

The assessment shows that the low-cost sanitary pad machine has been scored with mixed results for the indicators considered. Whilst there clearly is a need for local, low-cost production of sustainable sanitary pads in Nepal, other indicators – especially concerning legal regulations and requirements – show the need for further clarification.

The low-cost sanitary pad machine can potentially have a role within the commitment of free pad distribution in all public schools in Nepal. If the government effectively decided to only distribute biodegradable/compostable or reusable sanitary pads, this would create a safer market for the local production. However, as the respective programme is currently in the planning phase, a majority of the indicators on the regulator/facilitator side have been scored as needing further research and clarification.

Compared to conventional industrial sanitary pad machines, the assessed machine offers a relatively low-cost, functional, durable and easy to operate solution, which can address most of the challenges related to local sanitary pad production in Nepal. However, the assessment also shows that questions about national standards for MHM materials, import taxes on raw materials and finished products and supportive mechanisms need further discussion.

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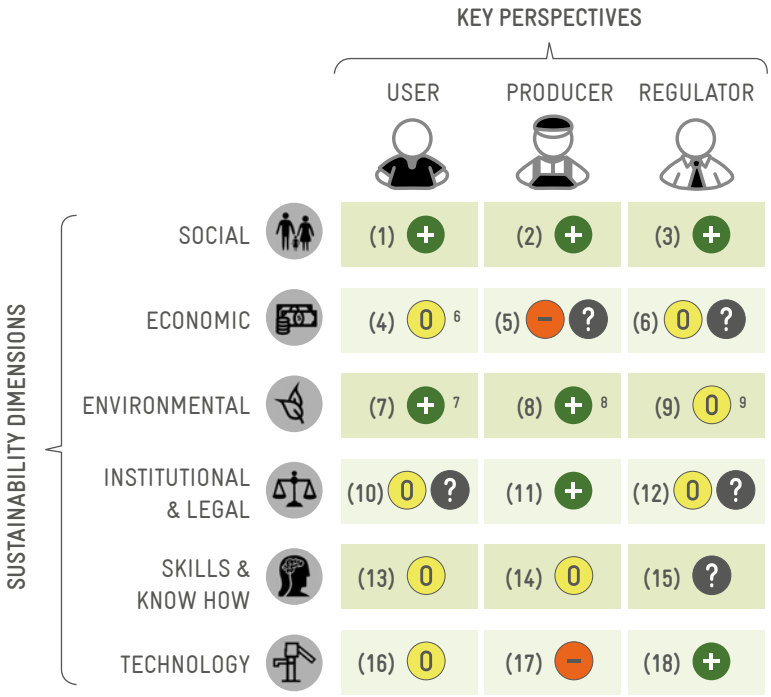
POTENTIAL LOW-COST SANITARY PAD MACHINE // REFLECTED IN THE TAF ASSESSMENT

- It is low-cost and relatively easy to maintain.
- If biodegradable materials are used, 100% compostable sanitary pads can be produced.
- Women's groups are empowered through job creation, local production strengthens the local economy and sanitary pads are made more accessible in remote areas without relying on importing them.

CHALLENGES LOW-COST SANITARY PAD MACHINE // REFLECTED IN THE TAF ASSESSMENT

- Setting up and getting the production running takes time and requires training.
- If non-biodegradable materials are used in production, the sanitary pads will create additional waste.
- As long as there is a dependency on importing the machine, certain spare parts and raw materials from other countries, the supply chain has limited viability.



Graphical representation of low-cost sanitary pad machine assessment // Figure 20

(1) Need for the low-cost sanitary pad machine
(2) Need for promotion of the low-cost sanitary pad machine
(3) Need for change in perception
(4) Affordability
(5) Profitability
(6) Supportive financial mechanisms
(7) Potential negative impacts on the environment and the user
(8) Potential negative impacts in the production of the low-cost sanitary pad machine and sourcing of raw materials for production
(9) Potential negative impact of scaling-up
(10) Structures for management and accountability of the pad production
(11) Legal regulation and requirements for import of low-cost sanitary pad machine, spare parts and raw material
(12) Alignment with national strategies and compliance with national standards
(13) Skill set of user in low-cost sanitary pad machine management
(14) Level of technical and business skills
(15) (cross-)sectoral capacity for scaling-up of low-cost sanitary pad machine and follow-up
(16) Reliability of low-cost sanitary pad machine
(17) Viable supply chains for low-cost sanitation pad machine material, spare parts and services and raw materials
(18) Support mechanisms for low-cost sanitation pad machine scaling-up

+ High value, neutral or positive, supportive characteristics
0 Potential impact, could become critical, needs follow-up
– Low value, negative, critical,hindering characteristics
? Unclear information, should be clarified

[6] Scoring rule: If users can only afford the technology with external subsidies, the score needs to be yellow. If these subsidies do not exist, it needs to be red.
[7/8/9] Scoring rule: if there is no risk, the score can be green.

5. LIMITATIONS

Due to the limited period in the field (two weeks), several challenges impacted the assessment. The monsoon and subsequent landslides did not allow a visit to the women's cooperatives at their production site and the interviewer met two representatives in a nearby city instead. The second cooperative was not reached during the same period of time and information on them had to be provided through GIZ personnel who had previously been in contact.

Furthermore, the government was in a period of recruiting new staff and potential interviewees had limited time to spare. Staff turnover also meant that some people had not been acquainted with the topic of MHM for very long.

These challenges further impacted the scoring workshop that had to take place without the user and the producer group. The producer is based in India and was only interviewed via telephone. As for the buyer and user perspective, Radha Paudel from Radha Paudel Foundation and Valerie Broch Alvarez (GIZ) shared their experiences with purchasing the machine from India. Overall, the eleven participants were all experts in the field of MHM and were able to conduct the scoring successfully.

Furthermore, most interviews took place in an urban setting and whilst all actors were aware that other provinces in Nepal, especially the far West, pose a different set of challenges, more evaluation on specific needs and feasibility could be necessary. A potential lack of impartiality of the interviewees can be seen as another limitation. The low-cost sanitary pad machines have been donated to the women's cooperatives by GIZ, therefore a certain degree of response bias could exist. This might further be aggravated by the cultural context in Asia and it cannot be ruled out that some answers were intended to please the interviewer.

The sanitary pad machine // Figure 21

6. RECOMMENDATIONS

MODE OF DELIVERY

The scaling-up of the low-cost sanitary pad machines is linked to the promising market of sanitary pads for public/community schools subsidised by the government. The essential con-dition of this context is the availability of sufficient budgets – also beyond the first year. It further needs to be specified if there are available funds to promote the set up of local production of sanitary pads through the local governments. Combined, this has the potential to create a safe market for local producers. The programme of free sanitary pad distribution has the potential to use the newly established federal structures in Nepal and the expertise on local level – so local governments need to take responsibility.

To allow a sustainable production of low-cost sanitary pads in Nepal, local production of the machines and local sourcing of raw materials would be ideal. Until those challenges have been addressed, the taxation of imported raw materials to produce pads should be lowered.

SHORT, MEDIUM & LONG TERM SOLUTIONS

It is important to acknowledge that it will take time to set up a running system and that short and intermediate solutions might be necessary in the meantime. Setting up a nationwide production of local low-cost sanitary pads with the machines, before the start of the procurement of pads by the government for the free distribution, will not be possible. During the procurement and set up phase of the low-cost sanitary pad machines, sanitary pads might need to be imported. It is important to only procure reusable or 100% compostable sanitary pads in the initial phase. By worsening the waste-situation in the initial phase, the distribution of free sanitary pads has the potential to be declared more damaging than helpful.

SHORT TERM:
Import of 100% compostable sanitary pads (from India)

MEDIUM TERM:
Local production of 100% compostable low-cost sanitary pads in Nepal, ideally a local production of low-cost sanitary pad machines with procurement of local raw materials. The Government should initiate the production of low-cost sanitary pads.

LONG TERM:
Informed product choices and availability of a wider product range (e.g. menstrual cups, period underwear, reusable pads), including adequate education on MHM products and practices.

INFORMED CHOICE

Whilst the low-cost sanitary pad machine has a range of benefits in terms of accessibility of sanitary pads in remote areas and economic empowerment of women, it is important to acknowledge that it can only be one element of a successful MHM strategy. When it comes to MHM products and practices, the ultimate goal needs to be the ability of an informed choice. Informed Product Choice means a woman or girl's ability to choose a menstrual hygiene product drawing upon comprehensive and unbiased information on the product range, including their relative benefits and disadvantages, so that it meets their personal, reproductive health and socio-economic needs and realities (WaterAid India, 2019). It is important to acknowledge that MHM does not have a one-size-fits-all solution and neither reusable products nor single-use pads will work for everyone due to differences in upbringing, environment and infrastructure.

Additionally, health promotion and awareness raising in order to change knowledge, attitudes, and behaviours as well as the provision of an MHM friendly infrastructure, need to go hand in hand with the distribution of MHM products, to ensure girls and women are aware of the choices they have and know how to use and dispose MHM products safely.

(NATIONAL) STANDARDS

The scoring has shown that national quality standards for menstrual products and raw materials, especially biodegradable and compostable plastics are needed. Only then, certifications can serve as a clear indicator of quality. The existing international standards for compostable plastics (ASTM D6400 in the US and EN13432 in Europe) should be used to create national standards in Nepal.

Certified compostability should be the requirement and where waste management does not include composting, it needs to be established alongside the pad production.

RESEARCH & LOCAL PRODUCTION

A truly sustainable and local production will be achieved when the low-cost sanitary pad machines can be produced in Nepal and when local materials can be processed to be used in high quality low-cost sanitary pads. These steps take time and require research on materials and technology. Cooperation with universities and researchers can be a good opportunity to find young potential innovators who can contribute their skills for this purpose.

As India hosts several producers of low-cost sanitary pad machines and has set up a large number of machines in and outside of India, it could be helpful to learn from them in terms of standards, funding options and business models. Training opportunities on materials or repair services from alternative international producers should be utilised until sufficient local expertise and production knowledge have been established in Nepal.

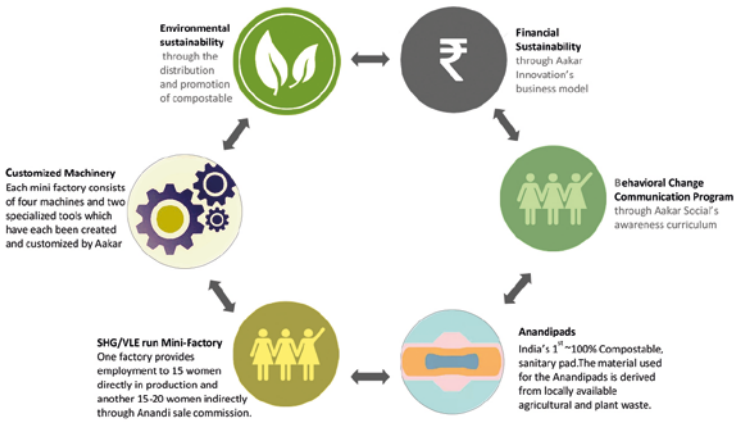
BUSINESS MODEL & JOB CREATION

The main challenge of establishing sanitary pad production within women's cooperatives is that it is only one element of many within the cooperative. This has at least been evident in the case of agricultural cooperatives. To establish a successful sanitary pad production with the low-cost machines, a greater focus on that particular product seems to be needed. Especially considering that challenges might arise in terms of procurement, it is important to have passionate people on board who will make an effort to figure out solutions instead of moving on to another product instead. Therefore, social businesses that focus exclusively on one product and that also have financial stakes in the production might have a higher chance of establishing a successful production in the long-run. Producing sanitary pads locally, creates jobs for women in rural inaccessible areas. This job creation potential should be of consideration when evaluating the sanitary pad machines business model.

ALTERNATIVE PRODUCER

As both red scores in the assessment relate to the producer, an alternative provider of low-cost sanitary pad machines should be considered. In the long-term, a local production of machines in Nepal should be the goal, but establishing this will take time. In the meantime, procuring pads, as well as machines from Aakar Innovations Pvst. Ldt. could be an option. The interview with them has shown a lot of potential, especially in the weaker areas of Jayaashree industries, concerning business structure, after sales service and a viable supply chain of raw materials. In general, cooperation with the private sector might have the potential to facilitate the import of machines, spare parts and raw materials, as businesses have more experience with the procurement of goods from other countries and the challenges that might arise when importing.

Screenshot from Aakar Innovation's website (www.aakarinnovations.com) // Figure 22



EXCURSE: AAKAR INNOVATIONS – ALTERNATIVE RAW MATERIALS & MACHINE (AAKAR)

After working with the original low-cost sanitary pad machine, Mandal Jaydeep saw the need to commercialize Mr. Muruganantham invention and founded Aakar Innovations Pvt.Ltd. They launched their first low-cost sanitary pad machine in 2012. Just like Jayaashree Industries, Aakar Innovations started with manual machines, but quickly adapted them to become semi-automatic and to produce thinner pads, as well as attaching wings to the pads. They further adapted the machines to use air-laid paper that is cut into shape and therefore skipping the step to tear and shred the pulp. Instead, the pad-shaped output of the additional machine is directly sealed in the next step. In August 2019, Aakar launched a fully automatic machine that has the same output as commercial pad machines – 15,000 to 20,000 pads per day. The fully automatic machines are aimed at urban settings and have more limited potential for local employment. The quality of the produced pads is more or less independent from the workers skillset. Aakar's semi-automatic machine is targeted at rural areas where up to five women can produce 1,500 to 2,000 pads per day and therefore gain their livelihood. These machines are primarily sold to women's groups and social businesses.

All machines are produced in India; Aakar does not have a factory, but they own the design and let other manufactures produce the parts for the machines. Aakar sends a team to assemble and set up the machines in the respective countries and they do a final quality check. They offer after sales service and support via telephone, WhatsApp video calls or Skype calls. The support is provided by engineers who also train local people when the machines are set up and who also travel to do check-ups in person. Aakar has experience with exporting their machines into different countries in Asia, Africa and South America and has procedures in place to get the respective Certificates of Conformity (COC) in their export market countries.

Aakar is also producing pads under the brand name Anandi, which are 100% compostable within 90 to 180 days. They have also started experimenting with various local materials from banana fibers to water hyacinths and pine tree pulp.

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8. ANNEX

FURTHER RESOURCES //

WEBSITE: MHM PA Nepal and MHM Summit 2018
→ www.myhealthrightsfuture.com

VIDEO: TED-Talk by A. Muruganantham:
How I started a sanitary napkin revolution!
→ www.youtube.com/watch?v=zkQL7UJYDIY

VIDEO: Menstru Action
→ www.youtube.com/watch?v=C9FC0qUcikY&feature=youtubehttps%3A%2F%2Fyoutube%2F0oBAnhVaJ1U

ARTICLE: The monthly exile: Making life better for menstruating girls and women
→ health.bmz.de/events/In_focus/The_monthly_exile

ARTICLE: Fighting discriminatory practices and "period poverty" / Making life better for girls and women in Nepal – month after month
→ health.bmz.de/events/In_focus/fighting_discriminatory_practices_period_poverty

VIDEO: Rebuilding life from rubble – A short video show how Nepal's women helped their communities recover after the earthquake in 2015.
→ health.bmz.de/events/News/Rebuilding_life_from_rubble

QUESTIONNAIRES // QUESTIONS AND FOLLOW-UP QUESTIONS

USER / BUYER	
(1) NEED FOR THE LOW-COST SANITARY PAD MACHINE	
!	As part of the GIZ S2HSP programme, you were given low-cost sanitary pad machines to produce and sell sustainable and biodegradable sanitary pads.
?	**Do you produce sanitary pads? Do you sell the pads?** › Do you know of other groups / collectives that produce local sanitary pads? If yes, do you see advantages of your machine compared to the other ones? › Do you see any disadvantage of your machine compared to the machine of other groups / cooperatives?
	What is your impression/assessment of the low-cost sanitary pad machine? › Did you hear any concerns from people in this village about the machine? If yes, what are the concerns? › Did you hear any concerns from people in this village about the pads, which were produced by the machine? If yes, what are the concerns?
	Does the low-cost sanitary pad machine contribute to making sanitary pads more accessible in your area?
(3) NEED FOR CHANGE IN PERCEPTION	
!	As you might have heard, the Government of Nepal has decided to provide all schools with free sanitary pads.
?	**What do you think of that decision?** › What do you like about the idea? › Is there anything you do not like about this idea?
	How did you address the lack of sanitary pads before you started working here? › Did you use sanitary pads before? If not, what else did you use?
	In your view, how do customers perceive the sanitary pads that you produce? › Do you collect feedback from your customers? › What is the feedback?
	Do you think girls will start using pads, just because they are provided for free?
(4) AFFORDABILITY	
!	The low-cost sanitary pad machines were given to your collective, including some raw material and you received training on how to use the machine.
?	**Did you run out of the raw material that was given to you by GIZ?** › If yes, did you buy new raw material? And how did you finance the procurement? › Do you plan to buy new raw material in the future? › What is your plan for material procurement?
	Do you have access to electricity daily to use the low-cost sanitary pad machine? › What is the source of funding to pay the electricity bill? › Have you experienced any problem with the payment of the electricity bill?
?	**Did you encounter any repair need so far?** › If yes, how much was that? › How did you manage to pay for the repair? › How do you plan to pay for repairs in the future?
	Imagine you had a higher demand for sanitary pads in your region and you would want to buy another machine to produce more pads. The cost for importing one machine with the materials from India is around 420.127 NPR (3.300€). Does the cooperative have enough resources to pay for a second machine? If not, would you take out a loan?

(7) POTENTIAL NEGATIVE IMPACTS ON THE ENVIRONMENT AND THE USER	
?	**Is there a risk operating the machine could result in negative impacts on the environment?**
	Is there a risk operating the machine could result in negative impacts on you?
!	Some companies have started using local materials to produce pads, for example water hyacinths or banana fibres. You get the cotton for the pads from India.
?	**Are you satisfied with the raw cotton from India? Why or why not?** › Do you know of a locally grown material here that you could use to produce sanitary pads? Would you be open to trying it out?
	If you use pads, what do you do with them after use? › Can you explain where you dispose them? › Do you know where other people dispose the sanitary pads after using them?
(10) STRUCTURES FOR MANAGEMENT AND ACCOUNTABILITY OF THE LOW-COST SANITARY PAD MACHINE	
?	**You as the collective have a joint responsibility for operating the low-cost sanitary pad machines and for the sale of t he products. Have you managed to establish a clear concept for roles and responsibilities related to the machine yet?** › If yes, who is responsible for what? (If question is not answered, specify:) **Who is responsible for:** › Ordering raw materials › Organising sales, customer relations › Bookkeeping? (Financial management) › Production schedules › Machine maintenance/repairs **Do you have any other roles and responsibilities that we did not mention?**
(13) SKILL SET OF USER TO MANAGE THE LOW-COST SANITARY PAD MACHINE	
?	**Are you satisfied with the design of the technology and how it works?** › Have you received any information or training on how to operate the machine? › Has the information or training been sufficient or would you need more? If yes, what kind of information would you further need? › Have you experienced any problems with the machine or even a break down? › If yes, who fixed it? › If not, just imagine the machine would stop running one day, would there be someone in the community who could support the repair?
(16) RELIABILITY OF TECHNOLOGY AND USER SATISFACTION	
?	**Are all people employed in the collective able to manage the machine and surroundings?** › How often do you experience brownout (no electricity)? › How long does the brownout usually take? › In time of no electricity, what do you do? Do you still do some work in the collective that you do not need electricity for? › Can you plan for episodes without electricity or do they come as a surprise? › Is there a part of the machine that does not work properly? How do you think it can be improved? › Does the machine show signs of use that impact the functionality? If yes, how do you deal with it? › Do you have recommendations in general how the machine could be improved?
!	There is the option to have one unit (pneumatic core forming machine without compressor) of the low-cost sanitary pad machine without electricity, so pads are pressed manually (show photograph). This version of the machine requires harder physical labour than the one you have here, but makes it less dependent on electricity.
?	**Would you prefer a low-cost sanitary pad machine with or without electricity?** › Is electricity interruption a big issue for you? › Would you prefer a machine, which does not need electricity, even if you have to work harder? In your opinion, which advantages and disadvantages do the two options have?

PRODUCER / PROVIDER	
(1) NEED FOR THE LOW-COST SANITARY PAD MACHINE	
!	As you might have heard, the Government of Nepal has decided to provide all schools with free sanitary pads.
?	**Do you see or envision the demand for local low-cost sanitary pad production?** **How many machines have you produced so far?** **Since how many years are you producing this machine?**
(2) NEED FOR PROMOTION OF THE LOW-COST SANITARY PAD MACHINE	
?	**Do you think promotion is necessary to scale up the demand for low-cost sanitary pad machines?** › Do you have resources available to promote the low-cost sanitary pad machine to sell more? › Do you have the capacity to produce more low-cost sanitary pad machines in case the demand increases? › Do you see potential of the low-cost sanitary pad machine to be utilised on a massive scale? › Would the pads be marketable for different customers groups?
(3) PROFITABILITY	
!	Your aim is to sell the machines without the need for after sales service, as they are easy to repair by local professionals.
?	**What is your experience with that? Do people still require after sales services?** › Have you received request for after sales servicers? › Do you offer after sales services? › Do you have resources to offer after sales services?
(8) POTENTIAL NEGATIVE IMPACTS IN THE PRODUCTION OF THE LOW COST SANITARY PAD MACHINE	
?	**Do you see or are you aware of any impacts to the environment in producing/manufacturing the low-cost sanitary pad machine?** › In producing the low-cost sanitary pad machine, do you recycle scrap raw materials that are not being utilised? › Is your company being checked or regulated on possible impacts to the environment by any active agency or other accreditation standards?
!	You say that the end product (the pads) are completely biodegradable.
?	**How can you ensure that the women collectives who use your machines, really only use biodegradable materials?** › Do you have any experience with people using the machine in a way you did not intend them to?
(11) LEGAL REGULATIONS AND REQUIREMENTS FOR EXPORT OF PRODUCTS	
?	**Is your company registered and certified to export your technology?** › At which government office did you register for exporting your machines?
	Do you have quality control procedures for the production steps in place when the low-cost sanitary pad machine is being produced? › Is there a standard operative procedure (SOP) with QC in place? Do you have a check list? Is there a final check at the end? › Who conducts the quality assurance procedure? (Internal or external)
(14) LEVEL OF TECHNICAL AND BUSINESS SKILLS	
?	**As the producer of the low-cost sanitary pad machine, do you think you have the technical and business skills to manage the low-cost sanitary pad production when the demand grows? (QC, setting up supply chains, after sales services?)** › Do you need external support to define and develop these skills? › Would you be able to scale up production? › How can you envisage to expand? › Is there a local training provider where you can provide these skills?

(17) VIABLE SUPPLY CHAINS FOR LOW-COST SANITARY PAD MACHINE MATERIAL, SPARES AND SERVICES AND RAW MATERIALS	
!	Your aim with the low-cost sanitary pad machine is to create a movement and to empower women. You say it can easily be built in almost all countries and have not patented your technology, so others can build their own machines with your design.
?	**Are raw materials to produce the low-cost sanitary pads available locally in most countries?** › What do you think about using local raw materials (e.g. banana fibres etc.) instead of e.g.imported cotton?
	Are raw materials to produce the low-cost sanitary pads available locally in most countries? › What do you think about using local raw materials (e.g. banana fibres etc.) instead of e.g.imported cotton?
	Do you have a Bill of Quantity (BOQ) and can you show it to us?
	How does the delivery of the low-cost sanitary pad machines to women's groups work? › Is there a difference between women's groups in India and other countries?
	How does the delivery of spare parts for the low-cost sanitary pad machines to women's groups work? › Is there a difference between women's groups in India and other countries?
	Are retailers and suppliers for other types of low-cost sanitary pad machines already available, which could become the supply chain for the low-cost sanitary pad machines too? › Are you in contact with other providers of sanitary pad machines? Do you exchange expertise / experiences?
	Are retailers and suppliers for other types of raw material to produce low-cost sanitary pads with the machine available that could contribute to the supply chain? › Are you in contact with other providers of raw materials? Do you exchange expertise / experiences?
	In your company, do you have existing mechanisms where in you gather feedback from users on your products? › What is the feedback on the machines you deliver? › What is the feedback on the raw materials you deliver? › What is the feedback on the training you deliver?

REGULATOR / FACILITATOR	
(1) NEED FOR THE LOW-COST SANITARY PAD MACHINE	
!	The Government of Nepal has decided to provide all schools with free sanitary pads recently and your ministry is part of the Task Force to plan and implement this new policy.
?	**What options of providing all public/community schools with free sanitary pads are currently being discussed?** › Which one has the most advantages for this context?
!	As you know, the Government of Nepal has decided to provide all public/community schools with free sanitary pads. The women's collective currently produce local biodegradable sanitary pads in two municipalities with the low-cost sanitary pad machine from India (context: reconstruction efforts after the earthquake with support of GIZ).
?	**In your opinion, do you see a role for the local low-cost sanitary pad production in contributing to provide all schools in Nepal with sanitary pads?** › If yes, what role can you envisage?
	Compared to the alternatives, what advantages and disadvantages do you see with the local low-cost sanitary pad production?
	Do you think it would make sense to expand this policy beyond public/community schools in the future, e.g. private schools, universities or through health centres to the general public?
(3) NEED FOR CHANGE IN PERCEPTION	
!	In recent years, people in Nepal have started talking more about the challenges that women and girls are facing during their period, especially related to chhaupadi and missing school or dropping out.
?	**How do you perceive the discussion about menstrual health and hygiene in Nepal?** › When did you become aware of this discussion? › How do you perceive the role of the Ministries in this discussion? › How does the new policy impact your work and what is your vision for the newly established Task Force? › There also exists a Technical Working Group for WASH in Nepal. Are they part of the Task Force?
	Have you heard, that girls do not go to school during their period due to the lack of pads? › Has this issue come up in your work at the Ministry?
	In your opinion, should the school communities and girls be able to choose the kind of MHM products they want for their students?
(6) SUPPORTIVE FINANCIAL MECHANISMS	
!	The provision of free sanitary pads for all public/community schools in Nepal is part of a national programme, but Nepal is a federal state.
?	**What is the current status of discussion regarding the budget allocation to provide free pads to all public schools?**
	MINISTRY OF HEALTH: Under which budget line will resources be allocated for the distribution of sanitary pads? › How do the financial processes between national and subnational level work? **MINISTRY OF EDUCATION: Have you allocated a budget for MHM activities or products?** › Do you envisage a role for the schools in the procurement of the pads? **MINISTRY OF WATER SUPPLY AND SANITATION: Do you have allocated a specific budget for WASH in Schools?** › Are MHM activities part of that budget? › Do you know where to find the costs per child in the budget?

	In your opinion, what would be the best way to organise the distribution of MHM products? › Should the schools get an extra post in their budget or do they get products delivered directly?
	In your opinion, on which level should contracts with pad producers be made? › Schools with pad producers? › Subnational institutions with pad producers? › National institutions with pad producers?
	Are there financial resources available that could fund the scaling-up of the low-cost sanitary pad model and that for example women's collectives could apply for?
(9) POTENTIAL NEGATIVE IMPACTS ON THE ENVIRONMENT OF SCALING-UP	
?	**Do you see any impacts on the environment if all public schools provide free MHM products to their students?** › In your experience, do the schools have the infrastructure to deal with the additionally created waste? › Is there an assigned person in your ministry who should be contacted to discuss this? › Will the Ministry for the environment be consulted/involved in the Task Force activities?
	What are existing national strategies to deal with waste? › Are there specific national guidelines for waste management in institutions (e.g. schools, hospitals)?
(12) ALIGNMENT WITH NATIONAL STRATEGIES AND COMPLIANCE TO NATIONAL STANDARDS	
?	**How do you perceive the low-cost sanitary pad machine integrated in the social business model (women's cooperatives)?** › Do you see potential in Nepal for a similar success story with this model like in India ("Pad Man")? › Do you think this model needs adaptation to make it work successfully in Nepal and in the context of schools? If yes, which changes need to be made?
	Are there national guidelines on the quality of MHM products? › If so, are the pads from the collectives in compliance to the national standards?
(15) (CROSS-)SECTORAL CAPACITY FOR SCALING-UP OF LOW-COST SANITARY PAD MACHINE AND FOLLOW-UP	
!	The Task Force consist of the Ministry of Health (lead), the Ministry of Education, the Ministry of Water and Sanitation and the Ministry for Women and Children.
?	**How was the process of establishing the Task Force?** › What was your ministries' role in the process? › Do you plan to include more ministries/departments into the Task Force? If yes, which ones?
	In your opinion, what is going to be the most challenging part about implementing the policy of providing free pads to all schools? › Are there existing examples from similar projects in Nepal? (example: condom distribution)
(18) SUPPORT MECHANISMS FOR LOW-COST SANITARY PAD MACHINE SCALING-UP	
?	**Are current resources available and sufficient at the national level to provide adequate technical advice and support for the scaling-up of the low-cost sanitary pad machine model?** › Which resources are available? › Who is responsible for organising and providing necessary information and advice to the low-cost sanitary pad machine collectives?

RELEVANCE OF THE 18 INDICATORS

(1) NEED FOR THE LOW-COST SANITARY PAD MACHINE

Target users must express a demand for the services (caters to job creation and accessibility of sanitary pads) provided by the low-cost sanitary pad machine to be able to overcome management challenges in the future.

(2) NEED PROMOTION OF THE LOW-COST SANITARY PAD MACHINE

Without strong promotion, technologies or products will not be known to users and buyers. Good promotion is essential for scalability.

(3) NEED FOR CHANGE IN PERCEPTION

There should be a change in perception towards MHM. More people should learn about and have access to safe and sustainable MHM tools and products. Create demand for a local and low-cost production of sustainable sanitary pads. This requires integration/alignment with institutional policies and opens the door for social marketing.

(4) AFFORDABILITY

Users need to be able to afford buying the low-cost sanitary pad machine, so that scalability will be possible without external funding or subsidy. Users also need to be able to afford payment for the operation and maintenance, including repairs, so that their investment in the low-cost sanitary pad machine is sustainable.

(5) PROFITABILITY

The costs for the low-cost sanitary pad machine should also include costs for after sales support, development of supply chain and sufficient profit for the producer to be interested to continue production. Sustainability of the low-cost sanitary pad machine may fail if producers cannot raise sufficient revenue to cover these. In cases like these, subsidies from third parties (e.g. NGOs, GIZ) will be needed.

(6) SUPPORTIVE FINANCIAL MECHANISMS

Supportive funding or subsidies are needed to assist introduction of the low-cost sanitary pad machine, but does not guarantee its sustainability or scalability.

(7) POTENTIAL NEGATIVE IMPACTS ON THE ENVIRONMENT AND THE USER

The use of the technology could have negative impacts on the local environment or the user.

(8) POTENTIAL NEGATIVE IMPACTS IN THE PRODUCTION OF THE LOW-COST SANITARY PAD MACHINE

Production of the low-cost sanitary pad machine on a massive scale may require materials that may be hard to provide on a constant basis and may have an impact on the environment.

(9) POTENTIAL NEGATIVE IMPACT OF SCALING-UP

If a technology is scaled up for nation wide use, there could be impacts on the environment and natural resources at a bigger scale.

(10) STRUCTURES FOR MANAGEMENT AND ACCOUNTABILITY OF THE LOW-COST SANITARY PAD MACHINE

The roles and responsibilities must be clear in order to get the optimal benefits from the low-cost sanitary pad machine. Users need business skills to ensure the profitability of their sales.

(11) LEGAL REGULATION AND REQUIREMENTS FOR REGISTRATION OF PRODUCER

Legal registration of a company is important before a company could produce or provide service within the country. Effective monitoring of the producer's activities by regulatory authorities enhances quality assurance. The roles and responsibilities must be clear in order to get the optimal benefits from the low-cost sanitary pad machine.

(12) ALIGNMENT WITH NATIONAL STRATEGIES AND COMPLIANCE TO NATIONAL STANDARDS

Technologies introduced should be aligned with national standards if they are to get support from government institutions. Support from government institutions is important to achieve scalability and sustainability.

(13) SKILL SET OF USER TO MANAGE THE LOW-COST SANITARY PAD MACHINE

Users might need specific skills and an understanding how to operate and manage the machine.

(14) LEVEL OF TECHNICAL AND BUSINESS SKILLS

Producers and providers need specific technical and business skills to ensure that they will continue to provide before and after sales service.

(15) (CROSS-)SECTORAL CAPACITY FOR SCALING-UP OF THE LOW-COST SANITARY PAD MACHINE AND FOLLOW-UP

The sectors must possess sufficient capacities for introduction, information dissemination, monitoring, documentation, and to provide technical support.

(16) RELIABILITY OF THE LOW-COST SANITARY PAD MACHINE

Products have to function reliably to fulfil the expectations of users. If expectations are not met, the users may not be willing to use or even invest in it.

(17) VIABLE SUPPLY CHAIN FOR LOW-COST SANITARY PAD MACHINE MATERIAL, SPARE PARTS AND SERVICES AND RAW MATERIAL

Availability of spare parts to repair the machine and raw materials to produce pads (locally) is essential for the low-cost sanitary pad machine to be scalable and be used on a sustained basis. Local suppliers can also enhance the feedback from users to suppliers.

(18) SUPPORT MECHANISM FOR LOW-COST SANITARY PAD MACHINE DEVELOPMENT

The development and introduction of technologies require extensive financial resources. Many initiatives do not manage to pass this challenge, that is why they fail.

SCHEDULE OF ACTIVITIES // INTERVIEW AND WORKSHOP

DATE	PERSPECTIVE // NAME
July 24, 2019	Regulator // Kabita Aryal – Community Nursing Administrator, Ministry of Health and Population
July 25, 2019	Regulator // Meena Shrestha – Under Secretary, Ministry of Water Supply and Sanitation
	Facilitator // Guna Raj Shrestha – National Coordinator, MHM PA Nepal
July 26, 2019	Regulator // Dr. Hari Lamsal – Joint Secretary, Ministry of Education
	Faclitator // Mahesh Nakarmi – Founder and Director, HECAF
July 29, 2019	Regulator // Kuni Joshi – Senior Health Education Administrator, National Health Education Information Communication Center
July 30, 2019	User // Mina Tamang – Women's Cooperative Semjong
July 31, 2019	Facilitator/Investor // Valerie Broch Alvarez – Senior Technical Advisor, GIZ S2HSP
August 1, 2019	Buyer // Radha Paudel – Founder and Director, Radha Paudel Foundation
	Producer // Mandal Jaydeep – Founder and Managing Director, Aakar Innovations (India)
August 2, 2019	Producer // Anand Brian – Jayashree Industries (India)
	Investor // Jiblal Pokharel – Managing Director, CRS Company
August 4, 2019	Regulator // Yeshoda Aryal – Ministry of Health and Population
August 5, 2019	Scoring workshop with stakeholders

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GIZ is responsible for the content of this publication.

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