



# Sanitary Pad Acceptability and Sustainability Study

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## Overview

### Why focus on girls' secondary education?

Retaining girls in school through the secondary level is now understood to have far-reaching effects on national wellbeing and prosperity for developing nations. Many of the benefits are related to the first years of sexual maturity—for instance, fewer early pregnancies, lower HIV transmission, and reduced infant mortality—and thus could be expected to accrue within only a few years of a successful intervention.

### Why not allow girls to decide and make it possible for them to act?

We know that the cultural context surrounding girls' education is complex. Poor families continue to favor boys when investing in education. Household chores, inheritance rights, marriage practices, and sexual violence all contribute to the hostile environment for girls' schooling. However, during the hundreds of interviews we have conducted with schoolgirls, they have expressed their keen desire to remain in school. So, it seems reasonable to find ways to give these girls more agency rather than focus only on trying to change complex local factors and entrenched attitudes among older generations.

### How will puberty education and sanitary care increase girls' chances of staying in school?

Unfortunately, once girls have begun menstruating, their families often pull them out of school to marry or cease to provide support for education. Male community members sometimes feel that a girl who has menstruated is "fair game" for unwanted sexual advances, leading to early pregnancy and disease transmission. We believe that "giving girls agency" to stay in school means telling them before their first period what will happen and providing the means to deal with it privately. Girls who do not know about menarche in advance inevitably reach out to an adult for assistance when it happens, which effectively announces their puberty to the community. Girls need sanitary care methods that minimize the visibility of puberty by avoiding accidental leakage.

### Our Previous Work

Our 2008/9 study in Ghana showed that provision of free disposable pads and education about menstruation improved school attendance among girls, thus potentially improving retention.<sup>1</sup> Absenteeism dropped from 21% of schools days missed to 9%. We are currently conducting a long term, large sample trial in Uganda to further demonstrate the expected effects.<sup>2</sup>

# Concerns About Providing Sanitary Care To Girls

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## What is the environmental impact of providing disposable sanitary pads to girls?

We frequently hear public concerns about providing sanitary pads to schoolgirls in developing countries. One worry is the potential damage to the environment caused by the pads. Since continued high fertility is surely just as important an environmental threat, we believe that the impact of pads disposal should be weighed against the potential to help girls delay child bearing by preserving privacy about puberty. And, as we will discuss below, we fear that the alternatives usually suggested—such as cloth pads and menstrual cups—show naiveté about the circumstances in which such interventions are needed.

## Whose economy benefits?

We often hear a second concern focusing on the possible economic windfall for foreign pads manufacturers. In addition, several different technologies being developed in eastern Africa can be produced by hand, using sustainable materials. Several companies also produce cloth pads that function far better than the means most rural girls now employ. It would make more sense to further support these local businesses than to deny girls pads, based on the false assumption that only global companies can step in to provide them.

## Can poor families afford sanitary pads?

In parallel to our current work in Uganda, we are conducting a multi-method study of household purchase decisions. Those findings are not yet complete or published, but it is clear already that sanitary pads are nearly unknown in remote areas and that barriers to purchase are based in attitudes, not cost constraints. A box of sanitary pads will last for a month and can be had for less than one US dollar (the same is true in Ghana). Households typically spend many times that much each week for the male head to drink beer with his friends. The obstacle is not price, but the gender power imbalance within households.<sup>3</sup>



Long walk to school



Cramped water closets



Pit latrine



Rudimentary facilities

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## A Closer Look at Conditions

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### What are the current circumstances and practices of sanitary pad use?

**“Found” Cloth.** Most girls in poor communities of the developing world use cloth to deal with their menstruation. Sometimes they use things like leaves and mattress stuffing, but by far the most common practice is to use cloth that is “found” in the household. This cloth might come from any number of sources (it is often from cut-up old clothes), but it is seldom absorbent, quick-drying, or secure. Girls wrap cloth about their loins or pack it into underwear, then try to move carefully so the cloth will not shift or leak.

**Long Distances to School.** Schools in rural areas are frequently some distance away—an hour’s walk or more is not uncommon—and getting to and from them requires crossing difficult terrain. Cloth products must be sturdy and secure because the friction from long walks and other activities will, over days and months of use, put significant strain on stitching. Any pad must provide reliable protection from leakage during exertion, which normally means some kind of plastic liner, and have a secure attachment to keep the pad from shifting during movement.

**Lack of Privacy at School.** When she does get to school, there will usually be no private place for the girl to wash and change. Water closets, if they are present at all, are cramped and may be either shared with boys or open to view. Many girls simply choose to stay home during their periods. Commercially-produced disposable sanitary pads, if they can be had, work better in this environment because they are reliable, can be changed quickly and secretly, and do not need washing. Girls report they can go eight hours or more without changing the leading sanitary pad.

**Challenges of Washing and Drying.** We must bear in mind the scarcity of clean water and soap, as well as the small, shared spaces the girls inhabit. Boiling water requires arduous preparatory work and is unavoidably a behavior visible to others. Girls consistently hang cloths to dry in a hidden place, usually someplace dark. Girls often do not have enough scraps to last their cycle. As a result, cloths are often damp and may have debris clinging to them when returned to use. Weather conditions in humid equatorial countries prevent cloths from drying completely even if left in a sunny spot. These unhygienic conditions often cause the cloth to give off an odor distinctive enough to betray them to observers and may pose health risks.<sup>4</sup>

**Disposal Methods.** Disposal of commercial pads is also a problem. Poor communities in sub-Saharan Africa collect rubbish in a common pile and only occasionally burn the refuse. Even when the community does burn the rubbish, it is burned in the open, often incompletely, leaving gobs of half-consumed objects for dogs or children to pick out. For this reason, girls are loath to put used pads in the community rubbish. In order to protect their privacy, girls will place used pads directly into the latrine after use, or if they do not have a latrine, they may furtively bury their pads in the forest. Even in schools that provide a central incinerator fairly near the toilets, the girls will put the pads down the latrines rather than be seen walking to the incinerator with a used one.

## Designing A Sustainable Sanitary Care Solution







### What are the design requirements for a sustainable sanitary pad?

A sustainable sanitary care solution will be thoughtfully designed to address the ground realities we have described. Pads must be both dependable and comfortable. Any cloth product designed for menstrual use should use fabric that is absorbent but releases soiling quickly when washed by hand. It must dry very rapidly, even in the absence of sunlight. The product design must also include a protective barrier and a fastening mechanism to ensure the pad does not shift with girls' movements. It should be sturdily sewn to weather long walks to school over days and months of use. Importantly, the cloth must be soft to the touch after having been washed and air-dried: putting rough-dried terry cloth, for instance, against this sensitive area before walking an hour to school causes painful chafing.

Any cloth or disposable product will also address the privacy and hygiene challenges under which girls live, work, and learn. The pad must be designed for easy change and disposal in crowded, shared facilities. Providers of cloth pads should keep in mind that users will require access to clean water, washing soap, and a clean, private place to dry cloths—or their use will be unhygienic and possibly unsafe. Expecting the girls to boil water or use an iron in order to get pads clean is not reasonable because of privacy issues. Menstrual cups normally cannot be cleaned adequately, pose special public health concerns because they may be shared, and usually violate taboos against insertion.

### What about disposal of single use pads?

Most disposable sanitary pads will eventually biodegrade except for the thin plastic liner that virtually all of them contain. (In Uganda, where we conducted this study, the government requires that sanitary pads have a plastic liner.) However, when a number of girls are putting used pads into the same latrines, the receptacle becomes full more quickly than toilets used only by boys. It is expensive to clean or replace latrines as often as would be required. In any case, the most environmentally responsible way to dispose of these pads is to burn them. So, finding a way to burn the pads while protecting the girls' privacy is required.

 <p><b>Privacy</b> Girls are not exposed when cleaning or changing in shared facilities</p>	 <p><b>Disposal</b> Easy and private so girls don't throw pads into latrines</p>	 <p><b>Absorbent</b> High daily capacity, releases soiling when washed, quick-drying</p>	 <p><b>Dependable</b> Long-lasting design to withstand repeated use and multiple washings</p>	 <p><b>Secure</b> Fastens to underwear and does not shift with movement</p>	 <p><b>Comfortable</b> Non-abrasive material for sensitive skin</p>
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## Our Current Work: Sustainable Pad Study

Here we report the results of research intended to assess the acceptability of locally produced sanitary alternatives among primary and secondary schoolgirls in rural Uganda. Three cloth pads, one disposable product made out of papyrus, and individually-sized incinerators were tested. Because each sanitary pad alternative had distinct advantages and disadvantages, all were included in the trial.

**Sites.** The study was conducted in one large secondary school with both day and boarding students and two primary schools within the same catchment. All are located in a rural, mountainous region near the border with Kenya. The primary schools were both located some distance from the nearest market town, so disposable pads were effectively unavailable. The secondary school was located in a small market town with no bank, no post office, and no internet, but sanitary pads could be bought there. The school charges tuition, fees, and boarding expenses. Secondary education in Uganda—as well as in much of sub-Saharan Africa—is typically delivered by boarding schools. These are far from being “posh” environments. In our test school, the dorm rooms are austere and very crowded. The tanks sometimes do not provide enough water for washing. Most of the students are poor and from rural villages. Only 7.6% reported coming from a city. About a quarter of all students had plumbing at home; only 10% had flush toilets. There were about 1,100 students, but only 30% are girls. Privacy in sanitary practice is particularly important because, as is typical in co-educational schools, the boys outnumber the girls two to one.



Rain water tank supplies water for 1,100 students



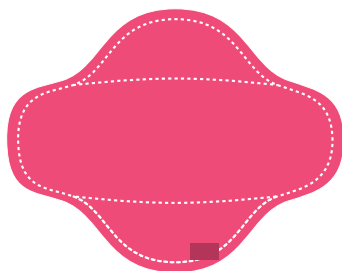
Crowded, austere dormitories

**Design and Methods.** At the primary schools, pads were distributed to all menstruating girls by the headmistresses. One school received AFRIpads and the other received Mwezi Pads. Focus groups were held at the end of the test, six months later.

At the secondary school, all girls enrolled were included in the study. Each girl was given MakaPads and instructed to dispose of them in the incinerator. The girls were divided into three groups and received one type of cloth pad product to test in addition to the MakaPads: one-third tested AFRIpads; another third Mwezi Pads; another third received KMET pads. The test lasted six months. Demographic and wealth surveys, focus groups, and interviews were conducted.

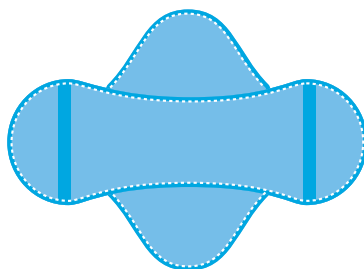
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## CLOTH PADS



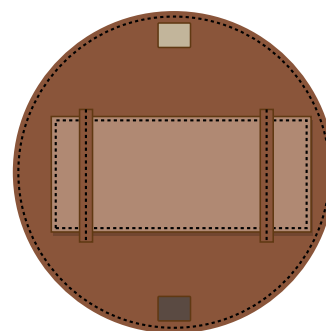
### KMET Pads

KMET Pads are individual washable pads produced by teenage mothers in Nambale District, Kenya. They are made of terrycloth with a soil-resistant plastic liner. Each pad fastens in the underwear. They come as a package of six thick pads costing US\$4.31. In preliminary testing, this pad took days to dry. However, a pad can be worn for a very long time without leaking—ten hours or more.



### AFRIpads

AFRIpads are washable cloth pads produced in Uganda and provide village-based employment for women. They are made of soft, quick-drying fleece and sold in a kit that includes two soil-resistant plastic-lined “base” pads that fasten securely to underwear, three attachable winged liners, three straight liners, and two small bags for carrying. The AFRIpad kit costs US\$5.95.



### Mwezi Pads

Mwezi Pads are made on sewing machines by Kenyan women’s collectives using fabrics that are locally available and affordable. They have a homemade appearance, but contain a plastic lining to protect against leakage. The pads consist of a circular base, with a Velcro attachment that fastens to the underwear. Two elastic strips hold inserts into place. A packet with four inserts costs US\$2.39.

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## DISPOSABLE METHODS



### MakaPads

MakaPads are disposable sanitary pads made from recycled office paper, rainwater, and papyrus that grows in profusion on public lands and along roadsides in Uganda. The pads are hand-produced in several locations in Uganda. The MakaPad is completely biodegradable except for a plastic liner that the Ugandan government requires. Production has a zero carbon footprint. A packet of 10 costs US\$0.50 cents. MakaPads are currently sold with “wings” that attach to underwear and absorb menstrual overflow. This version was unavailable at the time of the study.



### Mak1 Incinerator

The individual-level Mak 1 allows girls to put used pads into a chute that connects the toilet stall to an incinerator just outside. The pads collect, unobserved, until someone burns the trash. No fuel is required as the design creates an air intake that will burn all contents to temperatures above medical waste standards, reducing refuse completely into ash without exceeding emission standards. The machine costs about US\$1,000 to install; however, this one-time cost must be weighed against the repeated cleaning and replacement of latrines.

# Findings

**Existing Practices.** Nearly all the secondary schoolgirls—92.8%—were using commercial sanitary pads at the beginning of the test. Of those who had tried both cloth and disposable pads, 89.2% preferred disposable pads because they do not leak or require washing. In contrast, only one girl at the primary school sites had ever used a sanitary pad. The rest of the primary schoolgirls used cotton wool—often pulled from their mattresses—or cloth rags. We think it is especially important to note that, among the secondary school girls from rural villages, about half said they had used disposable sanitary pads in primary school. *Since disposable pads are so rare in such areas, we think the connection between primary school usage and admission to secondary school should be investigated.*

**Acceptability of Products.** About half of the secondary schoolgirls continued to purchase disposable pads during the trial even though they had been given free cloth pads. However, the girls reported liking the cloth pads, and 46.4% said they planned to switch to a cloth pad at the end of the study. Of the three cloth products, the AFRIPad was the most popular. Girls at the secondary school found MakaPads were comparable to commercial pads: 55.1% said they liked them very much and 57.1% thought they were better than regular commercial pads.

## Secondary School Findings



**CLOTH PADS**  
**46.4%**  
Plan to switch to a cloth pad

**DISPOSABLE PADS**  
**55.1%**  
Like very much  
MakaPads

**57.1%**  
Better than commercial  
MakaPads vs commercial pads

## Primary School Findings



All girls at the primary schools reported that the cloth pads they had been given were more reliable and stable than their customary methods.

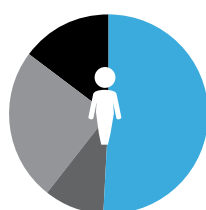
Unfortunately, test results of the Mak 1 Incinerator were inconclusive. Apparently, a local belief that burning menstrual blood causes infertility made the girls hesitant to use it. Although girls reported using the incinerator, the equipment appeared to have been scarcely used. Given that girls continued to purchase disposables throughout the trial when each had been given a free cloth pad, we believe further work on the Mak 1 or other type of machine is warranted.

At the primary schools, all girls reported that the cloth pads they had been given were more reliable and stable than their customary methods. They reported participating more in school sports and felt more confident in the classroom when asked to stand and recite. However, most girls reported they had not had soap to wash them. Girls reported that the AFRIPad was more quick-drying compared to the Mwezi Pad or rags. It also had enough inserts to last through their cycles. Some girls reported problems with insufficient absorbency and durability of the Mwezi Pad. They added found cloth to the Mwezi base to stretch its absorbency. Girls did not think the AFRIPads were giving off a scent, in spite of the absence of soap, but did feel the Mwezi pads had a scent after six months.

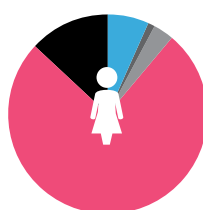
**Purchase Habits.** Demographic and wealth surveys were taken among boys and girls at the secondary school. Girls came from wealthier homes, confirming past findings that poor households prioritize boys' education. Probably for this reason, girls had higher monthly allowances. Girls who use cloth pads had smaller monthly allowances than those who used disposable pads. The difference, US\$4.00 versus US\$5.00, is equivalent to the average price of a box of pads.

Students had to pay for all needs (breakfast, school supplies, soap, haircuts, even sugar) from an average monthly allowance of US\$4.50. Girls used 20%–25% of their monthly allowance for sanitary care. Otherwise, the most frequently purchased items were the same for boys and girls: snacks, school supplies, soap, and breakfast. When asked what they would give up *last* if faced with a sudden financial emergency, boys said school supplies (51%), girls said sanitary pads (75.7%).

## Which would be the LAST one you would give up--which would be the hardest to live without?



School supplies	51.0%
Sugar/Snacks/drinks	24.5%
Soap	14.7%
Breakfast	9.8%
Sanitary pads	—



Sanitary pads	75.7%
Soap	12.9%
School supplies	6.7%
Sugar/Snacks/drinks	3.5%
Breakfast	1.1%

# Conclusion

## AFRIPads Selected for Continuing Study at Primary Schools

Given the difficulty of access to disposable pads in rural areas and how unlikely it was that fathers would pay for them, we chose AFRIPads to test at rural primary schools in a larger study investigating the effects of free sanitary care and puberty education on girls' schooling. We felt that the improved reliability and stability reported by the primary schoolgirls in this study would be important enough to warrant testing a cloth product, especially given the better environmental impact. However, we emphasize that the Mwezi Pads were acceptable in the primary environment and performed better than customary means. This is important because the Mwezi Pads can be made by anyone with a sewing machine, so NGOs and government workers could give instructions—with clear direction about the selection of materials—and communities could make their own pads. All providers of cloth pads must be mindful that they should also provide soap.



AFRIPad Comprehensive Menstrual Kit

We continue to recommend against the introduction of menstrual cups. Local norms usually will not tolerate insertion of a foreign object into a young girl. Further, the difficulty of getting soap and hot water presents an obstacle to safe usage that is insurmountable for most.

## Disposable Pads for Secondary Schools

At the secondary school level, we believe disposable pads will be chosen by some girls even when cloth pads are provided for free. Not only did girls in our study continue to buy pads even after we had provided cloth ones for free, but two-thirds knew how to sew their own before we arrived and yet nearly all of them were regularly using disposable pads. Further, in our work in other parts of Uganda, we learned that there is a social stigma against cloth use in the secondary schools: disposable pads are modern, cloth pads are associated with rural poverty. Teenagers everywhere are sensitive to such judgments. Furthermore, the necessity to hang the cloth to dry on pegs in crowded dorm rooms has been mentioned as a source of severe embarrassment to us by many girls. Remember, too, that boys outnumbered girls two to one in this school. Except in the few all-girl secondary schools, this overwhelming preponderance of boys will be the norm. Those proportions only make the necessity for a reliable menstrual method seem more important.

## Innovations in Disposable Pad Technology

Given girls' overall preference for disposable pads, we believe it is important to focus on providing less expensive pads with a better environment profile, as well as to continue working on individual-level incineration. As the MakaPads were judged to be equally good as other commercial pads, it would make sense to further support these kinds of technologies, helping the businesses that produce them to scale up and reach more girls. Note, however, that the plastic liner is present in all disposable pads, including the MakaPad. The main advantage is in the production: sustainable materials and local hand-manufacture are important considerations.

## The Way Forward

The macro-level concerns of government, environmental, and development critics regarding the provision of disposable sanitary pads to adolescent girls tend to ignore the "girl-level" circumstances we have reported. We believe it is important for the international development community to give more attention to the intimate conditions that give rise to these choices, rather than act on unfounded assumptions about the relative importance of price or environmental preferability when it comes to sanitary care. Not only will the promise of girls' education fail to materialize as long as policy makers give short shrift to such issues, but the safety and dignity of girls will be jeopardized by inconsiderate measures. Finally, the rapid positive effects of helping girls stay in school should encourage policy-makers to emphasize sanitary care in the present rather than wait for long-term changes in infrastructure and attitudes.

## Learn more about the study at:

<http://www.doublexeconomy.com/publications-projects-2/sanitary-care-and-girls-education/>

1 Montgomery P, Ryus CR, Dolan CS, Dopson S, Scott LM (2012) Sanitary Pad Interventions for Girls' Education in Ghana: A Pilot Study. *PLoS ONE* 7(10): e48274. doi:10.1371/journal.pone.0048274 and Dolan, Catherine S., Caitlin R. Ryus, Sue Dopson, Paul Montgomery, and Linda Scott. "A Blind Spot in Girls' Education: Menarche and Its Webs of Exclusion in Ghana." *Journal of International Development* (2013): n/a–n/a. doi:10.1002/jid.2917.

2 This study is being conducted under funding jointly provided by the Economics and Social Research Council and the Department for International Development, both of the United Kingdom. We are working in partnership with Plan Uganda.

3 More on local household purchase politics: <http://www.doublexeconomy.com/2013/07/13/gender-divide-in-uganda-norms-myths-and-household-consumption/> and <http://www.doublexeconomy.com/2013/03/23/the-gender-of-necessity-beer-and-lipstick-in-rural-uganda/>

4 "70% Can't Afford Sanitary Napkins, Reveals Study." *The Times Of India*. Accessed August 24, 2013. [http://articles.timesofindia.indiatimes.com/2011-01-23/india/28363510\\_1\\_women-resort-napkins-menstruating](http://articles.timesofindia.indiatimes.com/2011-01-23/india/28363510_1_women-resort-napkins-menstruating)