



# Bamboo Innovation

Improving Women's Lives  
Through the Natural  
Power of Bamboo  
~ A Ugandan case study ~

Hikarigaoka Girls' High School



Country, territory or other area	Education					
	Adjusted net enrolment rate, primary education, per cent,		Gender parity index, primary education	Net enrolment rate, secondary education, per cent,		Gender parity index, secondary education
	2016 male	2016 female	2016	2016 male	2016 female	2016
<b>Arab States</b>	85	82	0.97	63	58	0.92
<b>Asia and the Pacific</b>	96	94	0.99	67	68	1.02
<b>Eastern Europe and Central Asia</b>	96	95	0.99	88	87	0.99
<b>Latin American and the Caribbean</b>	95	96	1.01	75	78	1.05
<b>East and Southern Africa</b>	86	83	0.96	33 <sup>f</sup>	31 <sup>f</sup>	0.92 <sup>f</sup>
<b>West and Central Africa</b>	79	70	0.89	39	33	0.84
<b>More developed regions</b>	96	97	1.01	92	93	1.02
<b>Less developed regions</b>	92	89	0.97	62	61	0.99
<b>Least developed countries</b>	84	80	0.94	39	36	0.92
<b>World</b>	92	90	0.98	66	65	1.00



Country, territory or other area	Education					
	Adjusted net enrolment rate, primary education, per cent,		Gender parity index, primary education	Net enrolment rate, secondary education, per cent,		Gender parity index, secondary education
	2007-2017 male	2007-2017 female	2007-2017	2007-2017 male	2007-2017 female	2007-2017
Turkey	95	95	0.99	88	86	0.98
Turkmenistan	-	-	-	-	-	-
Turks and Caicos Islands	-	-	-	-	-	-
Tuvalu	-	-	-	71	92	1.30
Uganda	90	92	1.03	23	21	0.92
Ukraine	92	94	1.02	86	87	1.01
United Arab Emirates	98	96	0.98	89	86	0.96
United Kingdom	99	99	1.00	98	99	1.01
United States of America	93	94	1.01	90	92	1.03
United States Virgin						

# Advantages of secondary education for girls

- acquire proper knowledge and understanding
- income doubles
- eradicate child marriage
- restrain birth rate
- improve children's death rate and malnutrition



# 10 Reasons Why Girls Cannot Go to School

1. 貧困
2. 近くに学校がない
3. 学校や通学路が安全ではない
4. 水くみなどの家事労働
5. 社会や家族の女の子の教育への理解不足
6. 早すぎる結婚・妊娠
7. 劣悪な学習環境
8. 学校に男女別のトイレや安全な飲料水がない
9. 女子教員の不足
10. 児童労働

1. Poverty
2. No schools nearby
3. School/school route is unsafe
4. Domestic labor (drawing water etc.)
5. Lack of understanding about girls' education
6. Child marriage and pregnancy
7. Bad learning environment
8. No toilets separated by sex/safe water at school
9. Lack of female teachers
10. Child labor

# Percentage of Female Teachers in Uganda

Education <sup>i</sup> : *Percentage of female teachers by teaching level of education*

Customise ▾ Export ▾ Draw chart ▾

→ Indicator	Percentage of teachers in secondary education who are female (%)				
	→ Time	2012	2013	2014	2015
→ Country					
Tuvalu		..	..	..	81.82
Uganda		..	23.92	23.67	..
Ukraine		..	..	..	79.80
United Arab Emirates		..	..	..	..
United Kingdom of Great Britain and Northern Ireland		..	62.11	61.40	62.85

Source: UNESCO UIS website  
Acquired 08.23.2019

# Percentage of Female Teachers in Uganda

Education <sup>i</sup> : *Percentage of female teachers by teaching level of education*

 Customise ▾  Export ▾  Draw chart ▾

Turkmenistan	..	..	..	..	..
Turks and Caicos Islands	..	..	58.54	60.48	..
Tuvalu	..	..	..	81.82	55.97
Uganda	..	23.92	23.67	..	..

Source: UNESCO UIS website  
Acquired 08.23.2019



# Troubles with “not being able to buy sanitary napkins”

「生理で学校に行けない」ウガンダの少女たちを救った布ナプキンのはなし



PLAN JAPAN

A Story about Cloth Sanitary Napkins that Saved Ugandan Girls who Cannot Go to School because of their Period

世界中の女性たちが生理に悩まされている。

痛みやむくみなど、その悩みはさまざま。しかし、途上国では「生理用ナプキンが買えないこと」が最大の悩みだ。途上国では、生理用品が購入できないほとんどの女の子が、ボロ布や新聞紙、葉っぱなどを代用してしのいでいるという。

アフリカ大陸東部に位置するウガンダ共和国に暮らす15歳のキャサリンさんは、生理用

Source: Huffington Post webpage Japan edition [https://www.huffingtonpost.jp/2015/12/17/plan-japan\\_02\\_n\\_8779084.html](https://www.huffingtonpost.jp/2015/12/17/plan-japan_02_n_8779084.html) acquired 08.26.2019

# Troubles with period in developing countries

- "cannot buy sanitary napkins" due to poverty
- clothes get dirty → cannot go to school
- lose employment opportunity
- become isolated from social network

# Inadequate support for period becomes a gender issue

◆ “having period” is a biological difference = “sex”

However...

- difficulty in getting sanitary napkins
- delay in setting hygienic toilets
- few female teachers
  - school enrollment decreases
  - women’s success in society is limited



serious problem for realizing  
gender equality



# Problems with delivering commonly used products

many of the sanitary items are made of oil...

- ▪ oils are sure to run out since they are “limited resources”
- can lead to “marine plastic waste”





# HOW LONG DOES IT TAKE FOR YOUR TRASH TO BREAKDOWN?



Source: Greenfins

[https://www.instagram.com/p/BEsxm3kQJWH/?utm\\_source=ig\\_embed](https://www.instagram.com/p/BEsxm3kQJWH/?utm_source=ig_embed)

# Producing “bamboo”-derived napkins!

Bamboo-derived fabric sanitary napkin produced by Company P



※Select either paper-made or fabric-made, based on the local situation such as garbage collection and disposal systems, and security of hygienic washing water

# Sustainable “bamboo”-derived sanitary napkins

## ■ Why “bamboo”?

### 1. Bamboo itself is originated from nature and is sustainable

- Changes carbon dioxide into oxygen
- Small amount of water needed for cultivation
- Speed of growth



# Quantity of water required for cotton / bamboo production

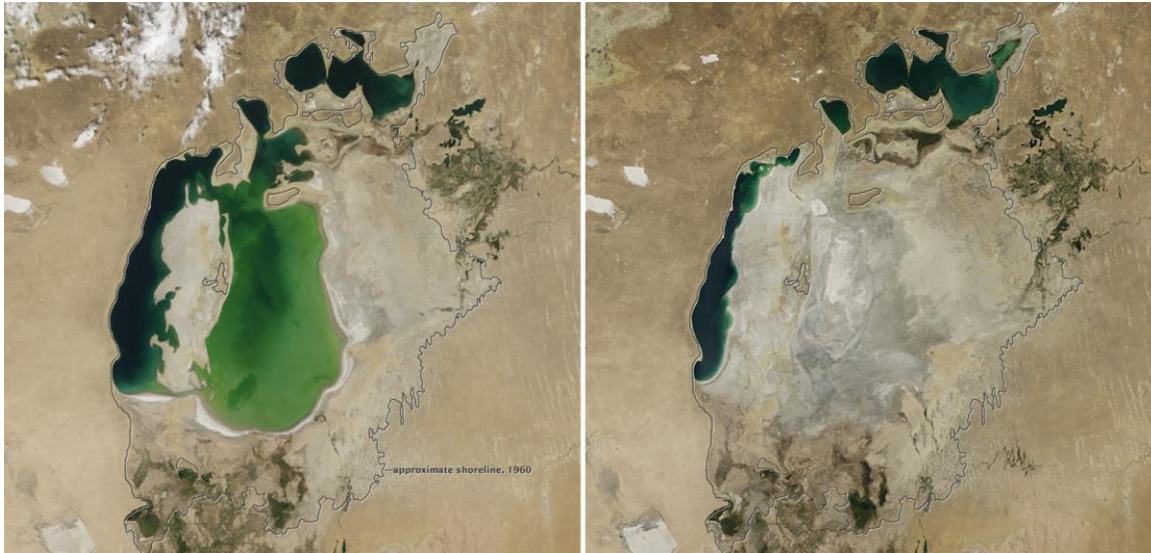
## Cotton, hemp and bamboo

Let stick with farming a little more. The garment industry scores high on the list of the ten most water-intensive industries. Cotton takes up between 2.5 and 5% of arable land, but has a huge consumption of pesticides, around 16% of all that are used worldwide. In addition to pesticides are all the chemicals used in the processing. Organic cotton production represents only a small fraction of the total, around 1%. But we are talking about water, and this is where it gets really interesting. It takes 11,000 liters of water to produce one kilogram of cotton (on average a pair of jeans weighs about 800 grams). 80% of the cotton grown is used for clothing. How can we change this picture? The answer is as simple as it is difficult: We have alternatives to cotton! The problem is that the cotton industry is an immensely powerful lobby. The good alternative is not polyester (which already has a large market share in the garment industry) or other energy-intensive artificial fibers which are based on oil, but something as simple as hemp and bamboo. For one kilogram of finished processed hemp, it only takes 2150 liters of water, mostly in the form of rainwater, not irrigation. These numbers are about the same for bamboo. Unfortunately there has been no appreciable development in production methods for hemp during the last fifty years or so, much of this due to the ban which many countries have had. Hemp can grow almost everywhere, from the Arctic to the equator. The fibers are also significantly stronger than cotton, which is good for consumers, but not for profit, since hemp-products are more durable and do not need to be replaced as often. Hemp requires no pesticides, but it does need some fertilizer.

Bamboo is another good alternative to cotton and features some absolutely unrivaled qualities in garment production. There are more than 1400 different bamboo species, but it is the Moso Bamboo (*Phyllostachys Edullis*) that is used in garments. Thankfully, this is *not* a species that is popular among the endangered pandas. Bamboo is one of the fastest growing plants in the world and can grow up to one meter per day. In addition, it requires



# Drying up of the Aral Sea



6 CLEAN WATER AND SANITATION



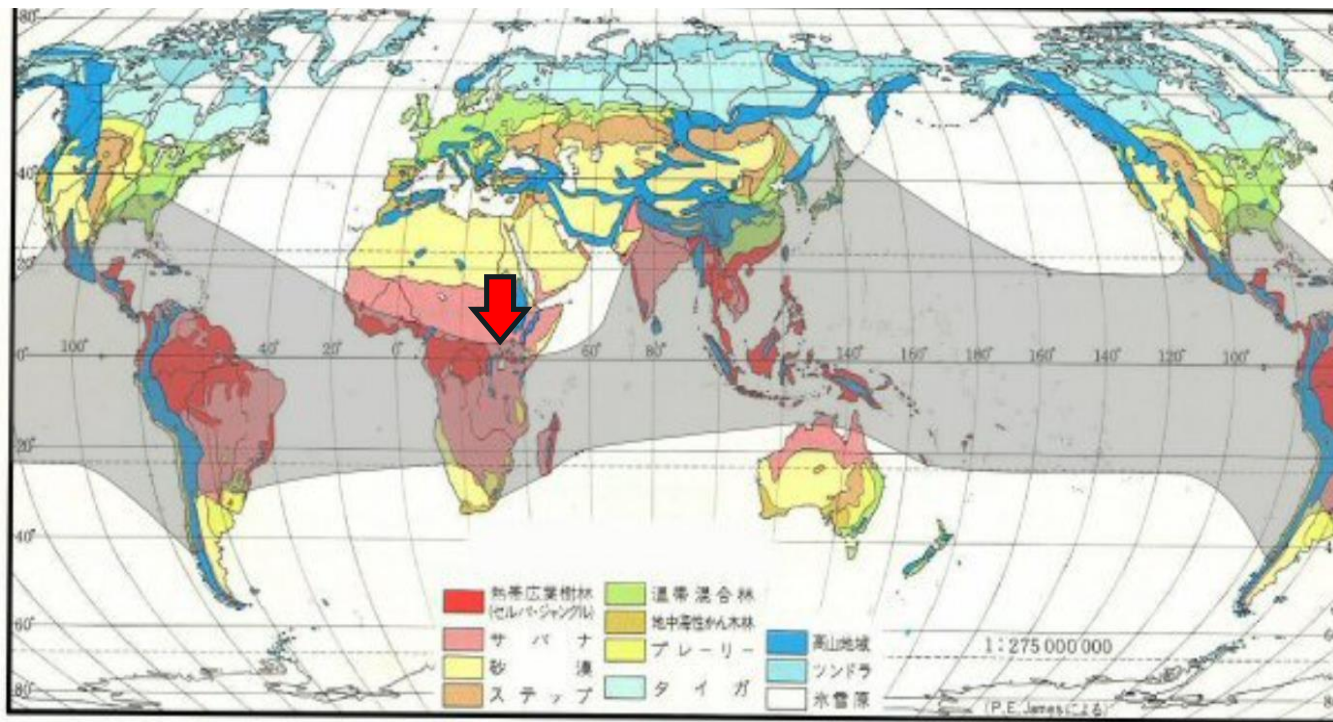
15 LIFE ON LAND



Source: National Geographic  
<https://www.nationalgeographic.com/news/2014/10/141001-aral-sea-shrinking-drought-water-environment/> acquired 12.08.2019

# Distribution map of bamboo

Bamboo distribution area



Source : 竹類の世界的分布を生態気候図上に示した図 (渡辺政俊、1987) <http://www.dkakd107.sakura.ne.jp/C.html> partly retouched

# Sustainable bamboo-derived sanitary napkins

## ■ Why bamboos?

## 2. Bamboo forests spread worldwide

- ▪ local procurement is possible
- restrain transport cost and truck gas exhaustion
- create new local industry and jobs including women
- expands opportunities for women to play an active role socially and economically



# Sustainable bamboo-derived sanitary napkins

*SDGs* × *Social Business*



# Promote FSC® certification of bamboo resources



「FSC®商標の限定的な使用に関する許可」 acquired 08.28.2019

# FSC® Principles and Criteria

Principle 1: Compliance with Laws

Principle 2: Workers' Rights and Employment Conditions

Principle 3: Indigenous Peoples' Rights

Principle 4: Community Relations

Principle 5: Benefits from the Forest

Principle 6: Environmental Values and Impacts

Principle 7: Management Planning

Principle 8: Monitoring and Assessment

Principle 9: High Conservation Values

Principle 10: Implementation of Management Activities

# Sustainable bamboo-derived sanitary napkins

*Bamboo Innovation!*

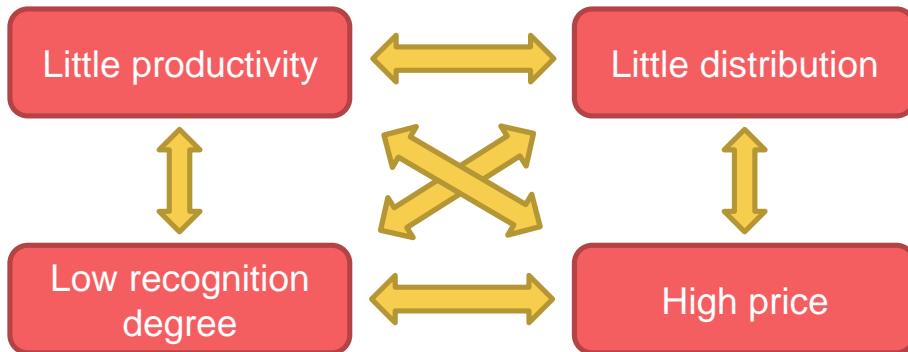


# Problems with bamboo-made sanitary napkins

Some are ready to use products



however, most of them are not distributed

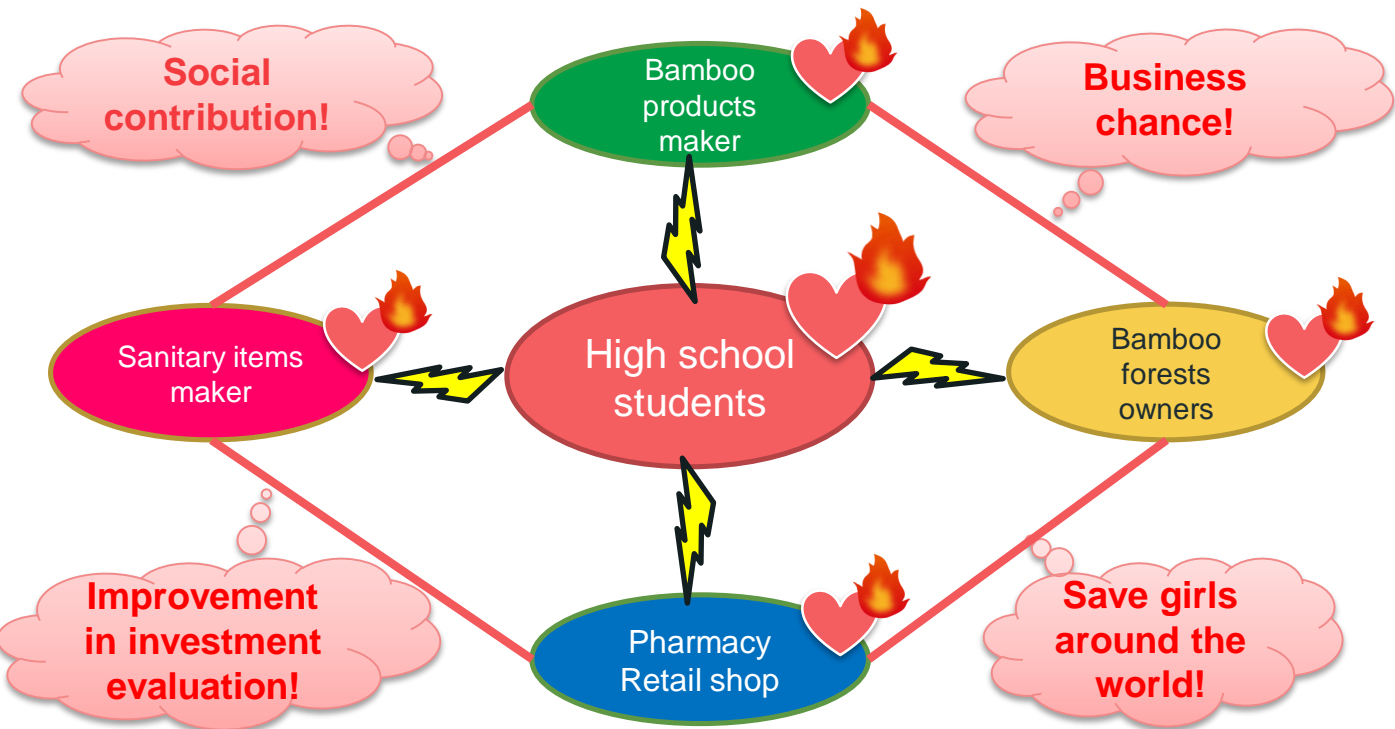






# What high school students can do

©deliver our passion → move & connect businesses!



# What high school students can do



## ■ mass-produce bamboo-derived sanitary napkins



- cooperate in monitoring research
- design attractive packaging
- cooperate in sales promotion campaigns

etc.



# What high school students can do

## ■ for topic creation ▪ increase in awareness

- transmit information through SNS
- incorporate in school events
- ask for donations, purchase of products with donations
- participate in sample distribution



We are growing a “mimosa” plant in a flowerpot made from toothbrushes.



# Realize gender equality with “BAMBOO” × SDGs!

☆ spread sanitary items made from  
sustainable materials

- improvement in girls' school enrollment
  - more working opportunities
- industrial development
- increase in female employment
- contribute toward solving micro plastic problem



→ realize **gender equality** and

**“Leave No One Behind”!**

# Thank you for your attention

## SUSTAINABLE DEVELOPMENT GOALS





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