

INTEGRATED SOLAR LANTERN DISTRIBUTION WITH MENSTRUAL HEALTH EDUCATION AND PRODUCT THROUGH PERFECT FIT

May 2023

Executive summary

Supported by Panasonic, Kopernik together with Perfect Fit distributed solar lanterns and reusable menstrual pads to women in East Nusa Tenggara province, Indonesia, to alleviate them from period poverty.

The recipients comprise of 10 Perfect Fit's tailors, 45 KOMAT agents, and 777 users in remote villages across three districts. Each district has its own challenges during the distribution process. One challenge in common is the poor road access to the remote locations of the distribution areas. Nevertheless, all recipients were able to receive the solar lanterns and reusable pads.

To understand the impact of the distributed items in supporting the women, a monitoring visit will be conducted six months after the distribution.



Women in Lembata received solar lantern and menstrual pads

This project is implemented in three regencies in East Nusa Tenggara province, Indonesia.

Map of East Nusa Tenggara Province



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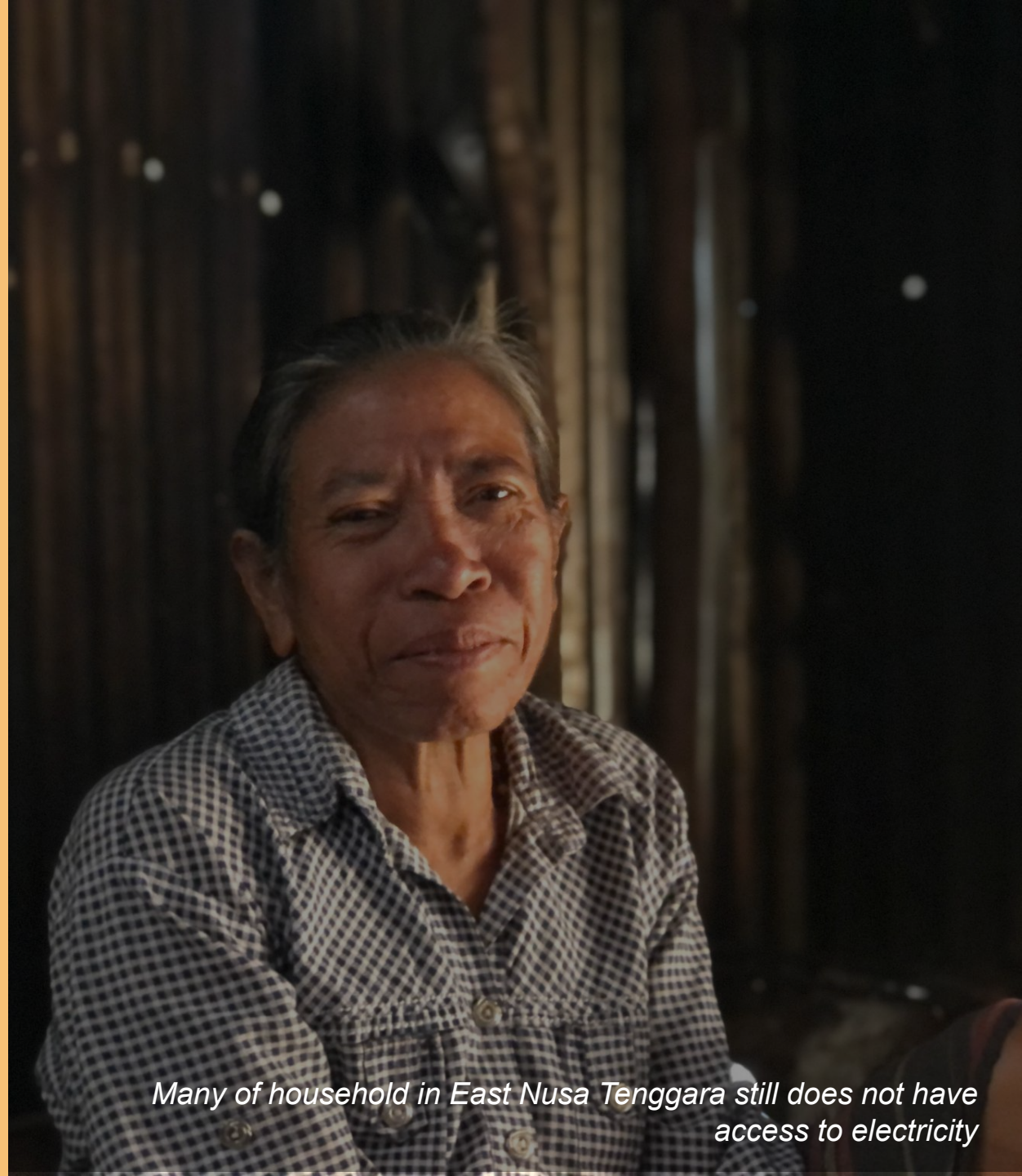
- ▶ **1. Introduction to Electricity Problem and Menstrual Poverty in East Nusa Tenggara**
2. Distribution of the Panasonic Solar Lantern and the Perfect Fit Menstrual Pads
3. Impact Assessment
4. Summary of Findings

East Nusa Tenggara (NTT) is an archipelago province located in the southeast of Indonesia. It has a population of 5,325,566 people - making it the 13th most populous province in Indonesia.

Electricity remains a significant challenge in East Nusa Tenggara province

NTT is considered as one of the poorest province in Indonesia. It has the least Gross Regional Domestic Product (IDR 20,581.13), third-highest percentage of poor people (20.44% in 2021), and the third-lowest Human Development Index (65,28 in 2021) in Indonesia.

The low development of the province is an accumulation of the province's harsh climate and topography conditions. NTT has mountainous topography that makes it difficult to expand public infrastructure across the province. As a result, around 18.9% of the households in the province still does not have access to electricity.

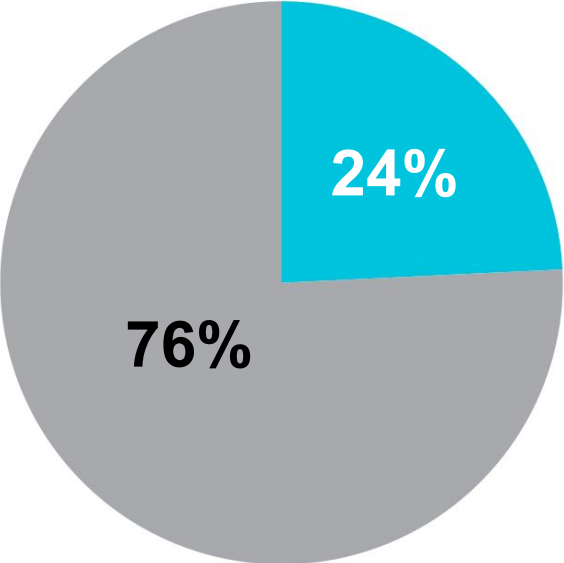


Many of household in East Nusa Tenggara still does not have access to electricity

The distribution locations - Manggarai Barat, Sikka and Lembata - also face the same limited access to electricity as the rest of the province, where only 24% of villages are electrified.

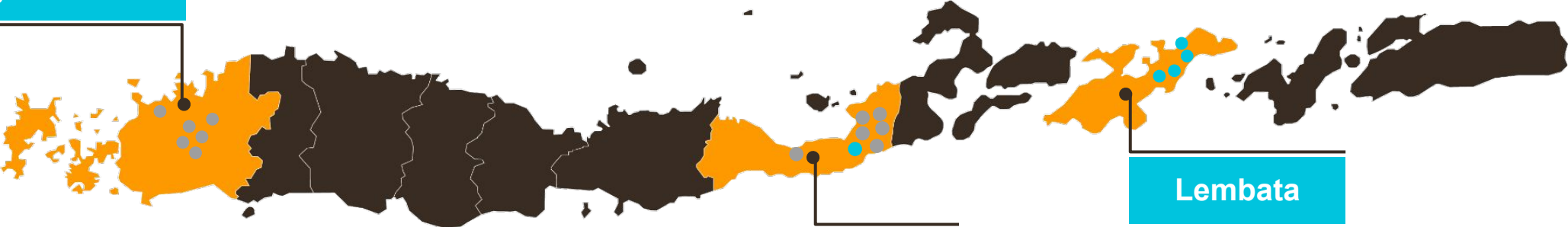
Electrification

%, (N = 412 villages)



- Electrified
- Non-electrified

Manggarai Barat



Lembata

Sikka

Women and girls in NTT are facing period poverty - a situation where lack of access to menstrual products, hygiene facilities, waste management, and education faced by an individual who menstruate.

This situation affects many women globally, including in Indonesia. In Indonesia, 22% of women & girls did not have adequate access to properly manage menstruation. This situation can affect physical, mental, and emotional well being of individuals.

In NTT, period poverty becomes a big challenge due to the remoteness of the area. Many women still think menstruation is dirty and is embarrassed to talk about. Access to alternative products other than single-use pads are limited. Further, both public and household toilets are not equipped with proper facilities such as lighting, soap, clean water, and disposal bin.



Not all women in NTT have access to menstrual products

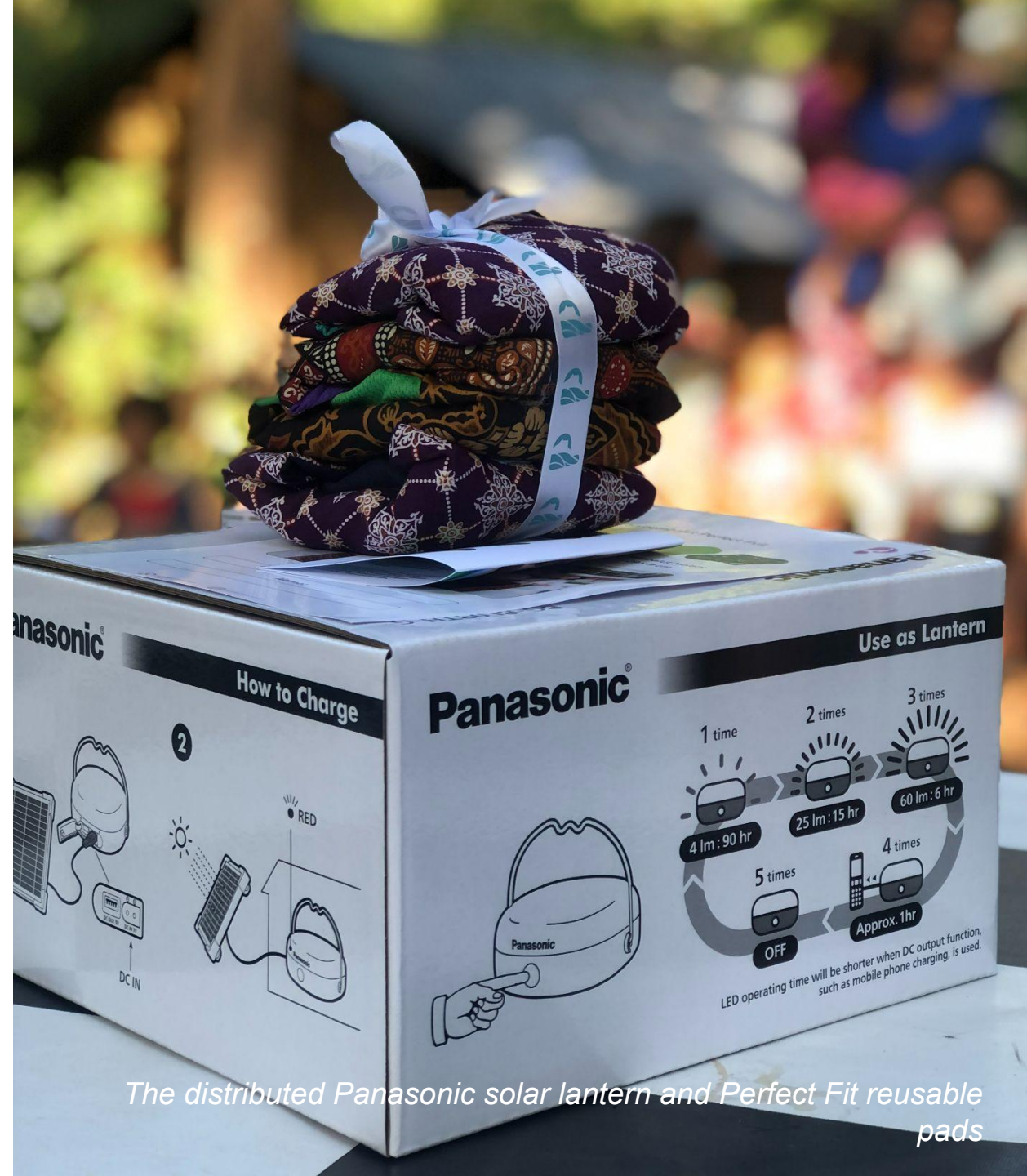
The project is a collaboration between Kopernik and Perfect Fit to integrate solar lantern distribution with menstrual pad distribution and menstruation socialization to overcome period poverty.



Kopernik is a research & development (R&D) lab for social and environmental challenges. Kopernik serves underserved and disadvantaged people around the world by striving to find more effective solutions to poverty reduction through lean experimentation and data collection to test new ideas and find what works.



Perfect Fit started as one of Kopernik's social project back in 2018 to normalize discussion on menstrual hygiene. In 2021, Perfect Fit spun off as an independent social enterprise and currently is the sister company of Kopernik.



The distributed Panasonic solar lantern and Perfect Fit reusable pads

The project is conducted over the period of two years. Both distribution and monitoring activities are conducted by Kopernik and Perfect Fit.

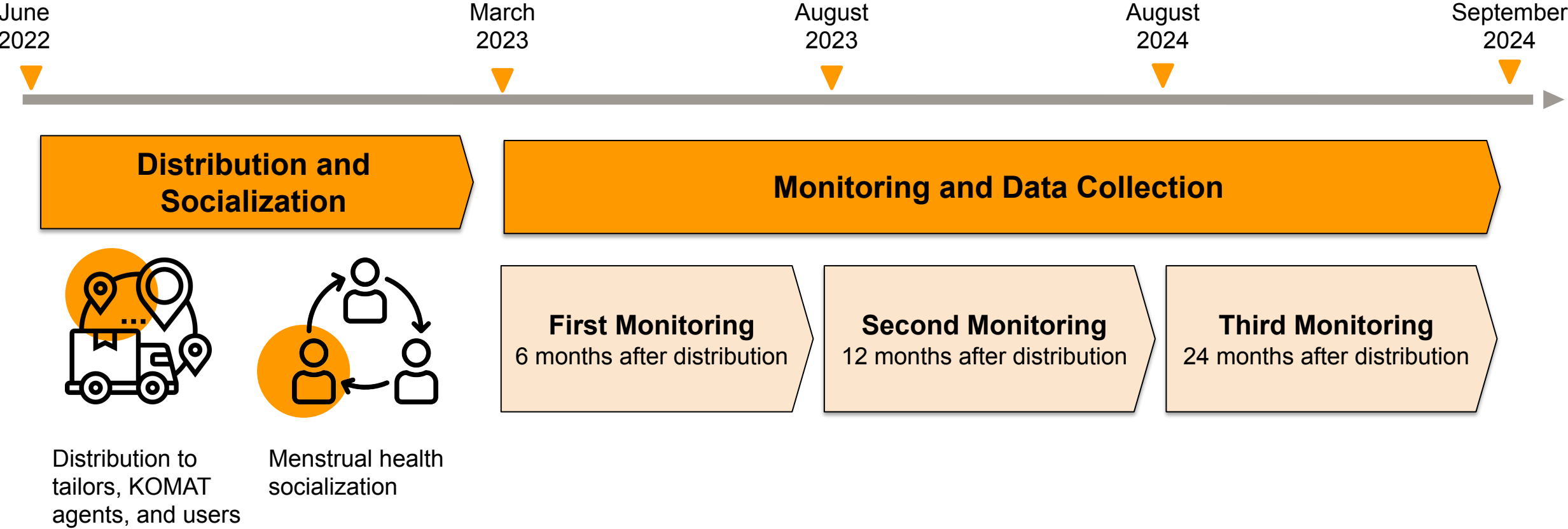


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Manggarai Barat

Manggarai Barat district is located at the western most of NTT that has a population of 256,317 people. The district's capital is Labuan Bajo, a popular tourist destination famous for its island tour to the Komodo island.

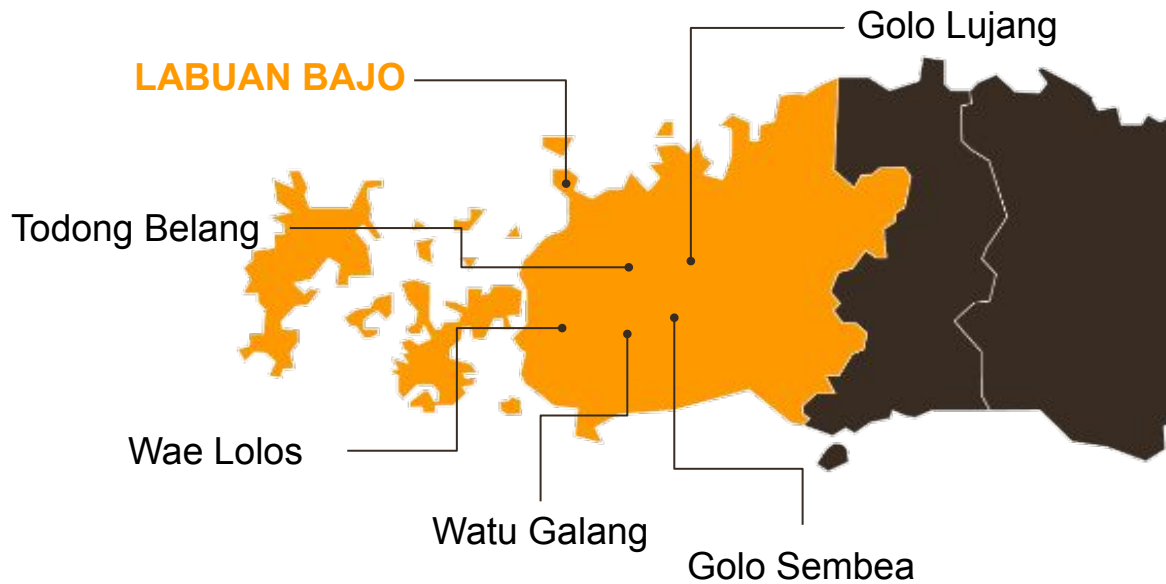
The development of the district, nevertheless, is highly disproportionate because it only focused on the development of Labuan Bajo and its surrounding areas. As a result, many areas in the district still lacks public infrastructure for its citizen - including lack of access to electricity for 57 villages.






A woman in her kitchen in Golo Lujang Village, Manggarai Barat

The solar lanterns and menstrual pads were distributed to the targeted beneficiaries in five villages.

Villages in Manggarai Barat for the distribution



Beneficiaries		Number of beneficiaries	
	Tailors	10	
	KOMAT Agents	30	
	User	Golo Lujang	100
		T. Belang	80
		Wae Lolos	49*
		G. Sembea	27
		Watu Galang	50
Total		346 solar lanterns 306 pad packs	

Sikka

Sikka is a district located in the Flores island of NTT with a population of 321,790 people. The district capital is Maumere. Sikka is flanked by the sea in the north and south, and has mountainous terrain all over the district.

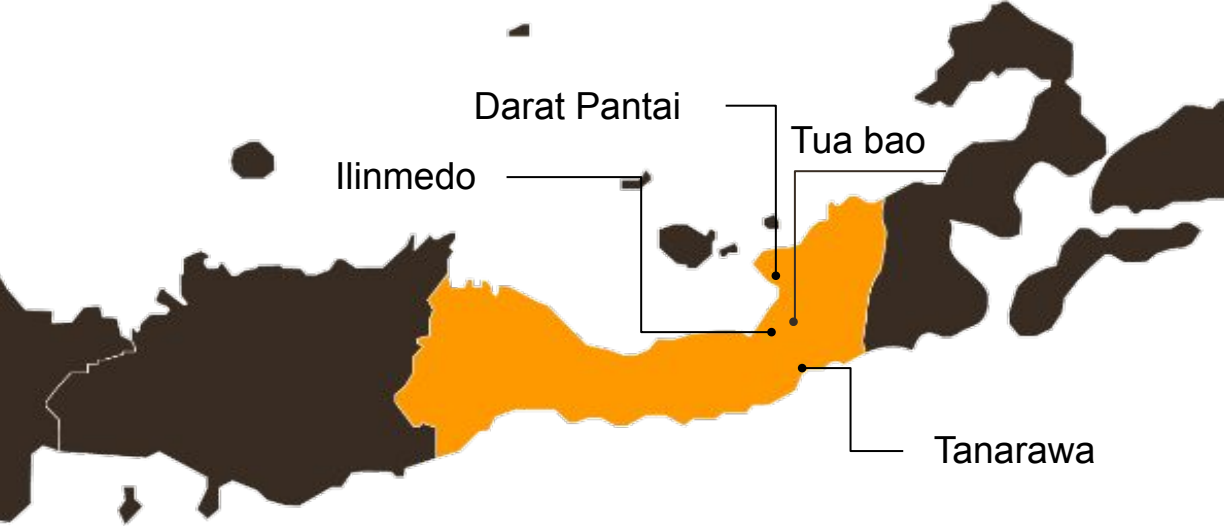
According to the official data, there are currently only 8 villages left in Sikka that has no access to electricity. However, this data is quite misleading because many households from villages with electricity access still have no access to electricity at all due to the remoteness of the location.





Women from Tanarawa Village, Sikka.

The solar lanterns and menstrual pads were distributed to the targeted beneficiaries in four villages.

Villages in Sikka for the distribution



Beneficiaries		Number of beneficiaries
 KOMAT Agents		11
 User	Tua bao	98
	Ilinmedo	70
	Tanarawa	110
	Darat Pantai	60
Total		349 solar lanterns 338 pads

Lembata

Lembata is an island in NTT, with a population of 145.685 people. The district capital is Lewoleba.

The whole island is electrified, however the power supply for the island tends to be unreliable due to the high risk of natural disasters from the island's two active volcanoes and high level of rainfall.

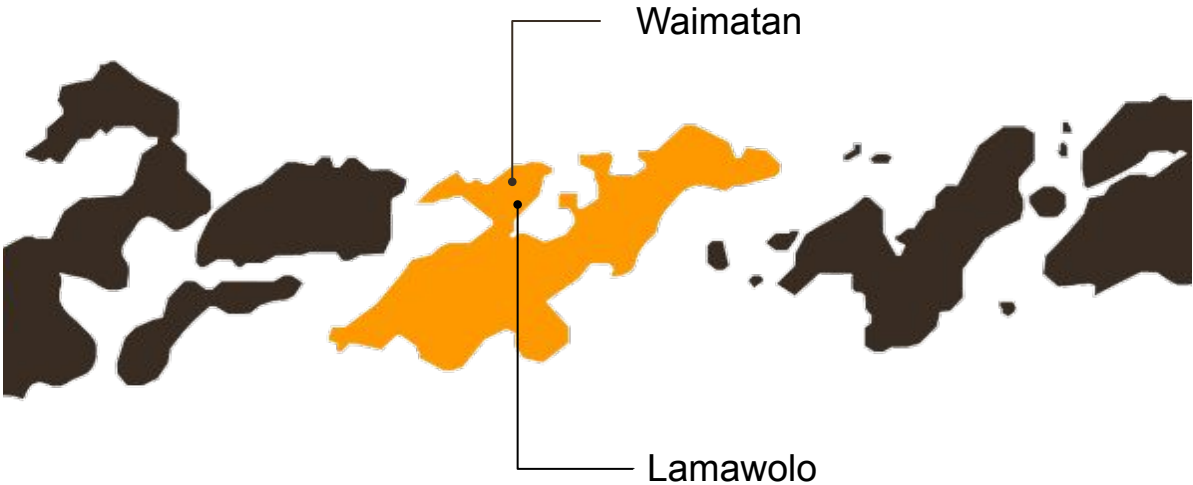
In April 2021, the island was devastated by the Seroja tropical cyclone that causes flooding and landslide and wiped two villages - Waimatan and Lamawolo - from existence. During natural disaster occurrences, the electricity of the island is usually compromised and the residents experience prolonged long periods of black outs.



A woman showing her makeshift kitchen at her home in the relocation site for victims of the Lembata landslide disaster.

The solar lanterns and menstrual pads were distributed to the targeted beneficiaries in two villages that were relocated due to the Seroja tropical cyclone.

Villages in Lembata for the distribution






Beneficiaries		Number of beneficiaries	
 KOMAT Agents		4	
	 User	Waimatan	85
		Lamawolo	48
Total		137 solar lanterns 133 pad packs	

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TAILORS

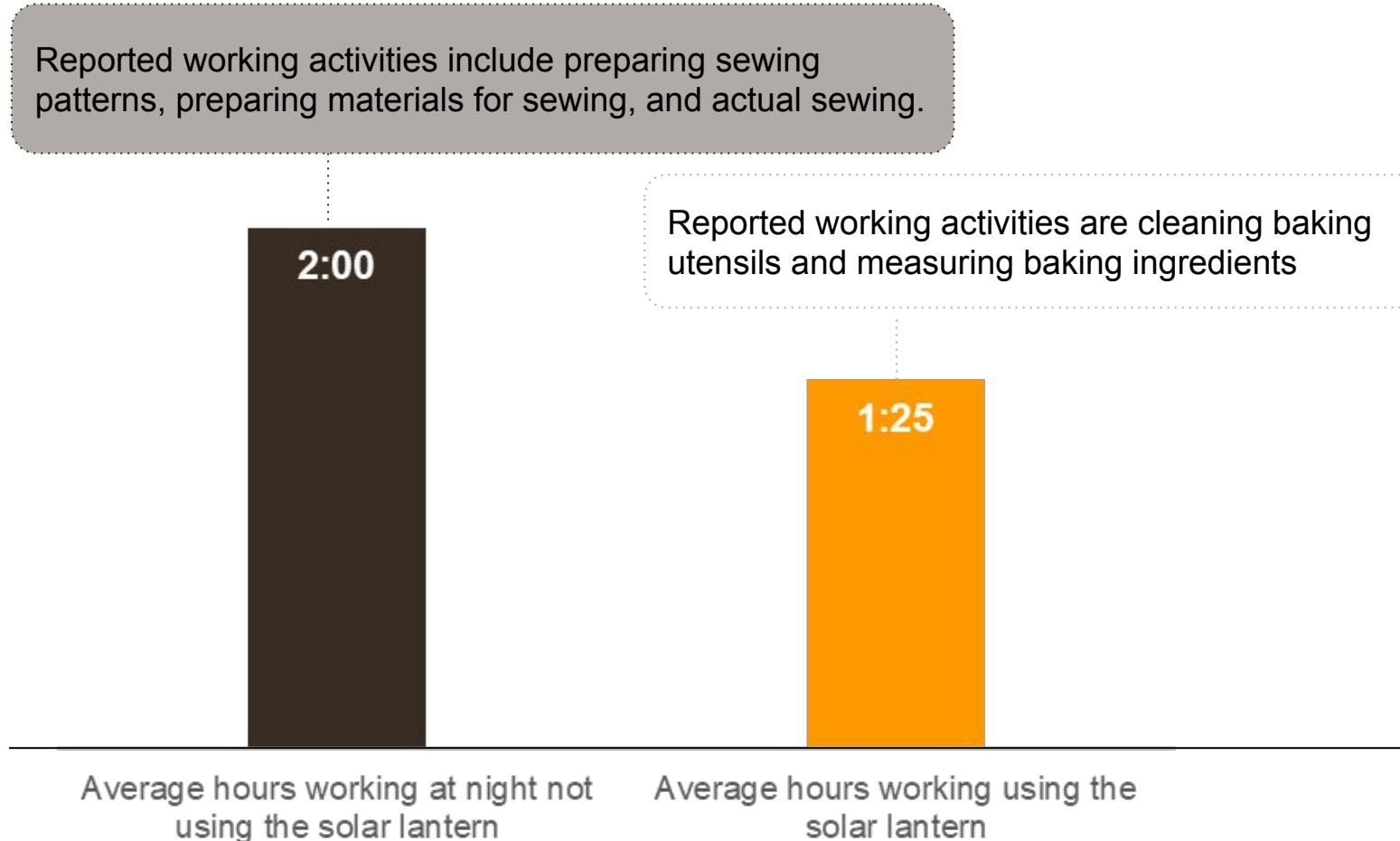




During the project, there is a change where tailors are no longer sewing at night. As such, they spent less time working at night.

Time reported for working

Hour(s), (N = 3 respondents)

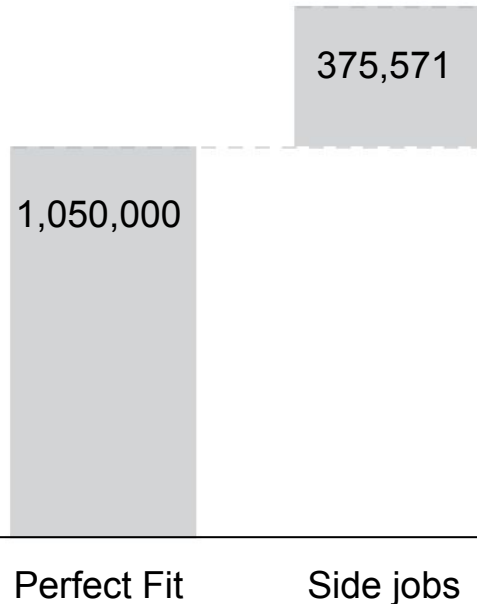




There is a change in income due to tailors' work for producing the pads. During the monitoring, they are not producing any pads which affected their income.

Average income during baseline*

IDR, (N = 7 respondents)



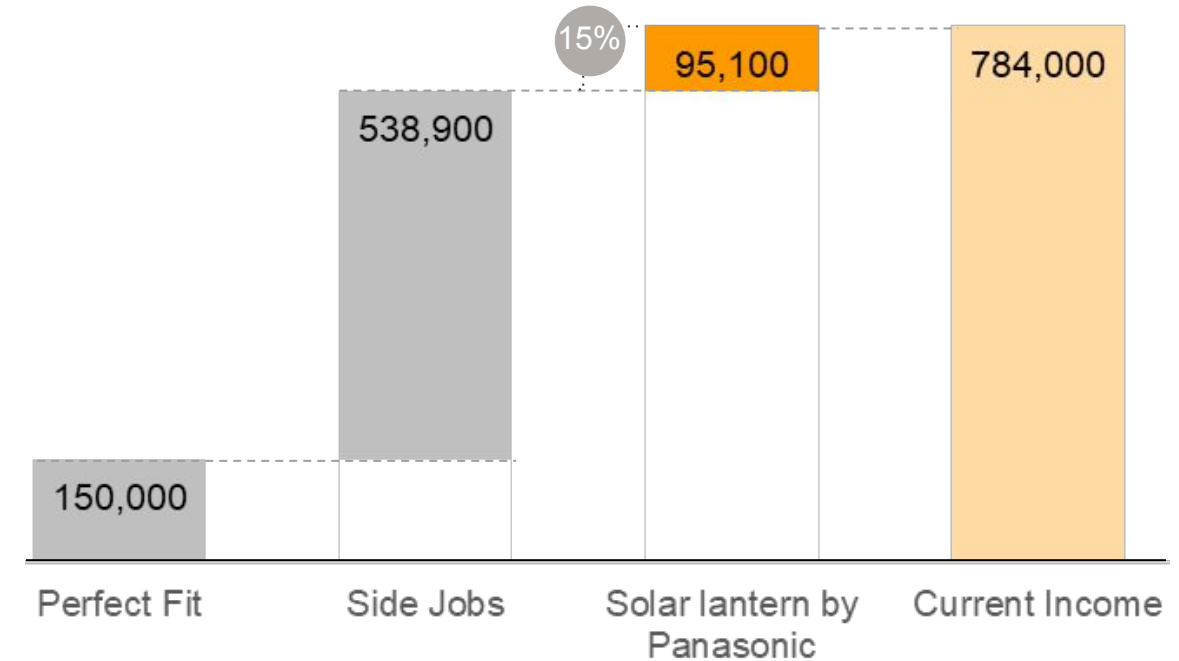
Expected income during 6-month monitoring*

IDR, (N = 7 respondents)



Average income during monitoring†

IDR, (N = 3 respondents)



*Refers to the average income from when the tailors are sewing full-time for Perfect Fit.

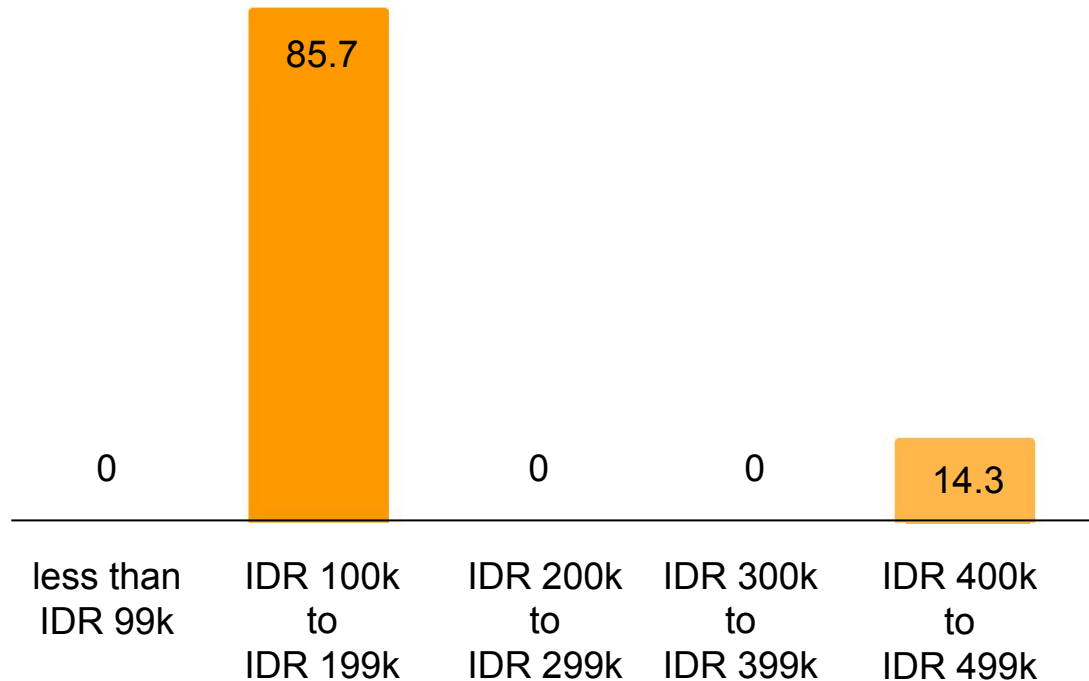
†Income from Perfect Fit are now from sales of reusable pads by the tailors and participation in menstrual health education events.



Solar lantern is expected to reduce tailors' monthly expense on alternative lighting to encounter power outage at night.

Monthly expense for electricity (IDR)

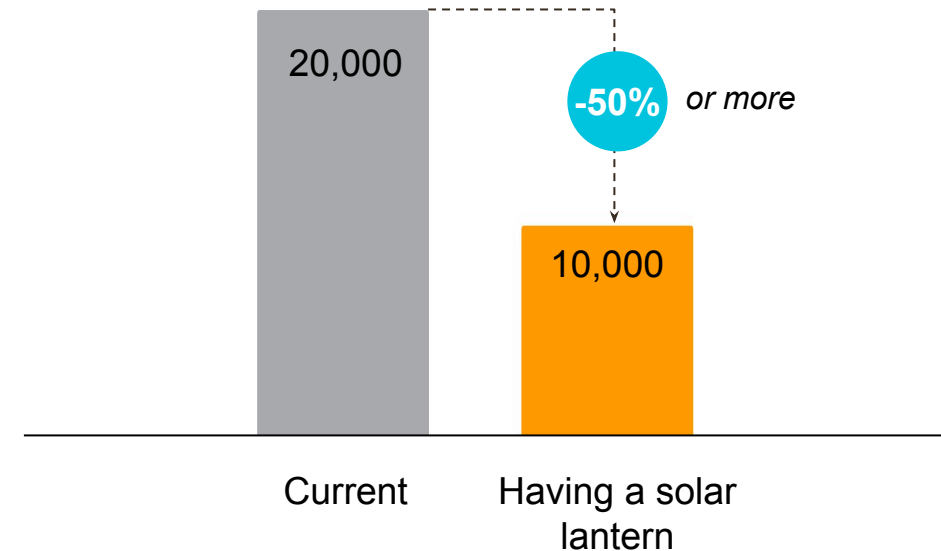
%, (N = 7 respondents)



Majority of tailors spend IDR 100,000 to IDR 199,000 monthly for electricity.

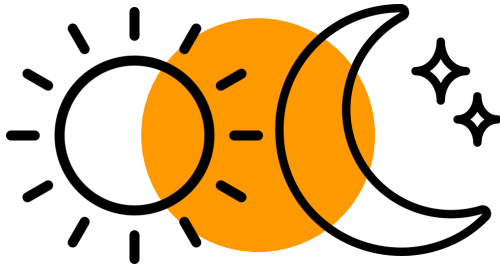
Monthly expense for alternative lighting

%, (N = 5 respondents)

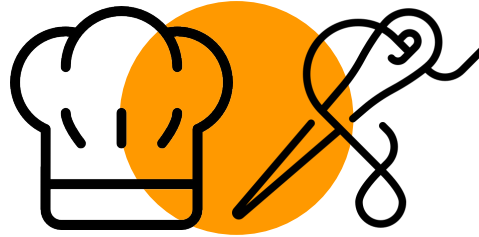


Tailors spend about IDR 20,000 to buy candle, kerosene, and batteries for alternative lighting when power outages occur.

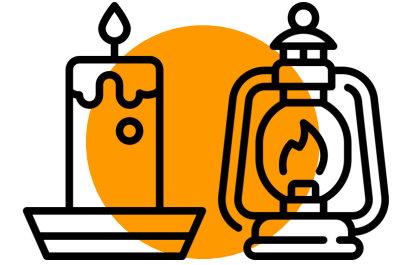
We see changes in tailors' productivity and income, and possibility to reduce spending using the solar lantern.



Productivity



Side Jobs



Spending for Lighting

State During Distribution

On average they **work 8.5 hours daily**. All of them work during the day, but **some tailors need to work at night** to meet their sewing quota preferably from 6 to 10 pm.

Many tailors took side jobs to earn extra income such as **tailoring for other customers, making and selling cakes and handcrafts**. By having side jobs, **a tailor generates on average IDR 1,380,000 per month**.

On a monthly basis, a tailor needs to **spend an additional IDR 20,000** to pay for alternative lighting (candle, kerosene, and batteries) to anticipate sudden power outages.

Changes During the Monitoring

The overstock of reusable pads have diminished the need for sewing more reusable pads. As such, there has been a shift in the tailors' role in Perfect Fit to sell the reusable pads as KOMAT Agent and focus more on other source of income.

The side jobs of the tailors have now become their main day-jobs since they are no longer sewing. Perfect Fit have been providing them with soft skills to do other jobs, so they are able to self-sufficient.

Tailors now solely use the solar lantern during power outages - eliminating the spending for candles, batteries, and oil for the kerosene lamps.

TAILOR

Rina, 24 years old

“ During the active production season, I sew 215 reusable pads per month, helped other tailors who struggle, and conducted quality control.

Sometimes I have to work at night to meet the sewing target, and the lighting at my house is not bright enough.

By joining Perfect Fit, I can support my parents to pay for their motorcycle bill and buy a new handphone. I wish to make Perfect Fit products better known to more people.”



There have been no sewing activities for the tailors since the distribution. However, the Perfect Fit team offers the tailors to participate in selling the reusable pads in the Labuan Bajo area and conduct menstrual health education throughout East Nusa Tenggara.

The tailors are given training in sales and menstrual health, and are actively involved in Perfect Fit's various menstrual health and CSR activities. Nevertheless, adoption to these changes are quite slow as not all tailors are willing to do these activities and prefer to do other types of work instead.



The head of one of the villages in Manggarai Barat ceremoniously received the solar lantern and reusable pads

KOMAT AGENTS

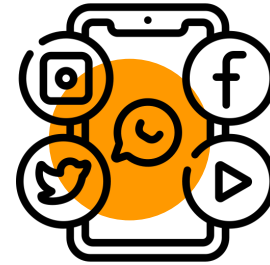


KOMAT agents conduct various promotional activities.



Direct promotion

KOMAT agents doing promotion in social activities such as *arisan* or rotating savings and credit association gathering, religious activity, and health-care activity once in a month. They meet other women and share their experience in using Perfect Fit reusable pads.



Indirect promotion

KOMAT agents promote using social media, mainly WhatsApp and display Perfect Fit products in their shop.



There are KOMAT agents who conduct **both direct and indirect promotion** activities

On average, a KOMAT agent conducts four door-to-door marketing activities in a month during the day.



Marketing and promotional activity

#, (N = 8 respondents), *one respondent is a new agent who hasn't started the marketing and promotional activities.*

4

Average **marketing and promotion activity** per KOMAT agent per month

3

Average **working hour** per KOMAT agent per day

4

Average **door-to-door activity** per KOMAT agent per month

Opportunity

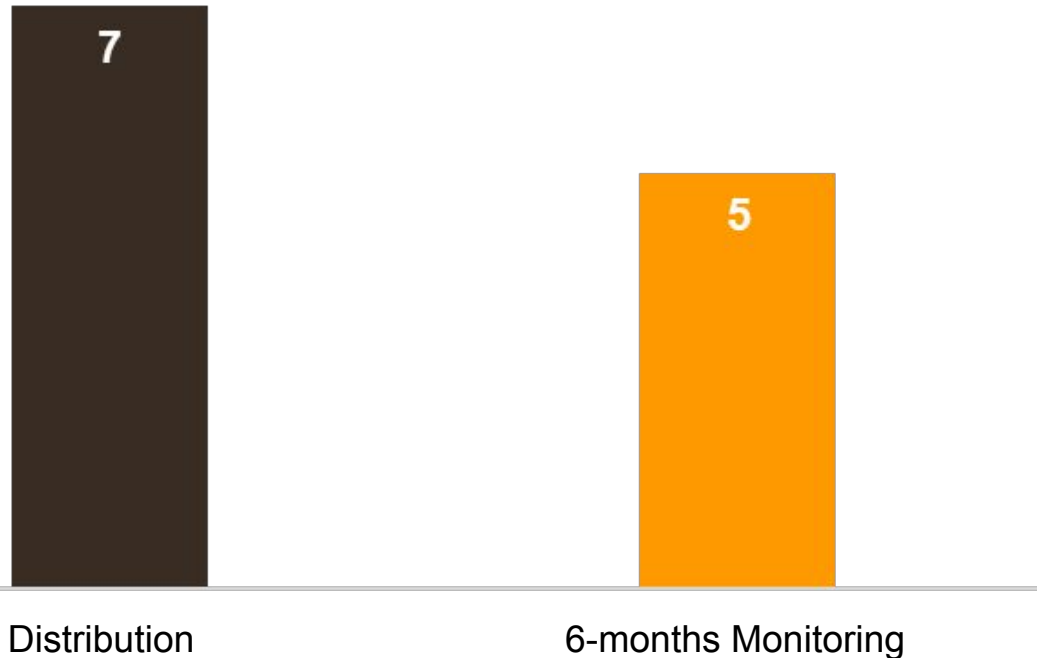
Current direct promotion activity are conducted during the day. By owning a solar lantern, a KOMAT agent can do some extra activities at night.

However, there is a decline in the reported average promotional activities that the KOMAT agents do per month during the monitoring.



Promotional activities

#, (N = 7 respondents)



Current state during monitoring

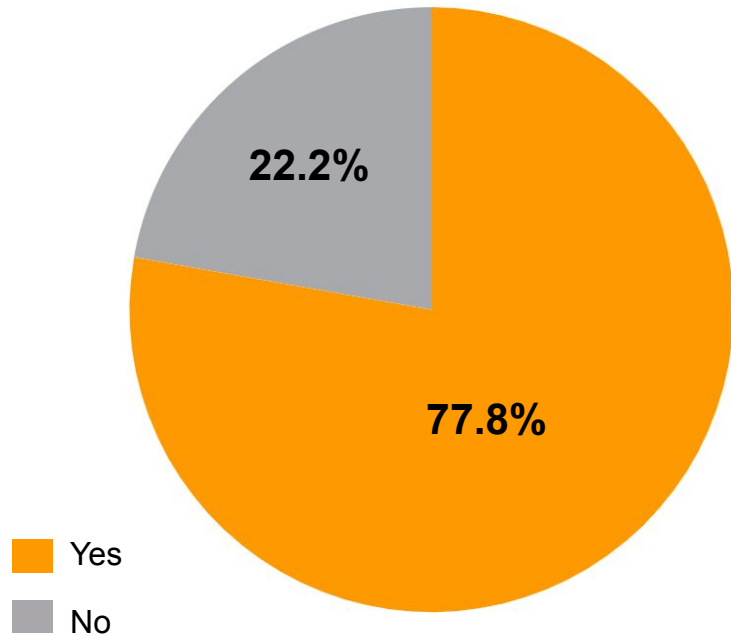
The current economy of the people in East Nusa Tenggara is not great and as a result, not many have the disposable income to buy reusable pads as they are still struggling to buy their daily needs - further discouraging the KOMAT agents to do more promotional activities. Further, since the product is still new (compared to single-use pads), it is not common for them to buy reusable pads. More education on long-term economical benefit is needed.



Two out of nine respondents rely on being a KOMAT agent as their main occupation, while others take on side jobs.

Have other jobs

%, (N = 9 respondents)



Type of occupation

%, (N = 7 respondents)



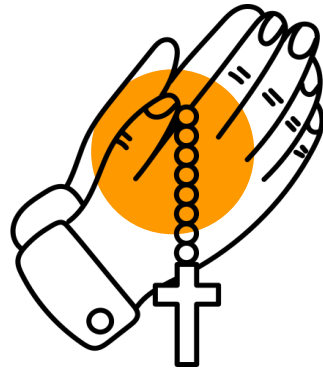
During the monitoring, we found that KOMAT agents used the lanterns for meetings that are not related to Perfect Fit marketing campaign.

Social activities at night

(N = 7 respondents)



Copra farmer meeting



Religious gatherings



Hangouts in front of
own shop

Current state during monitoring

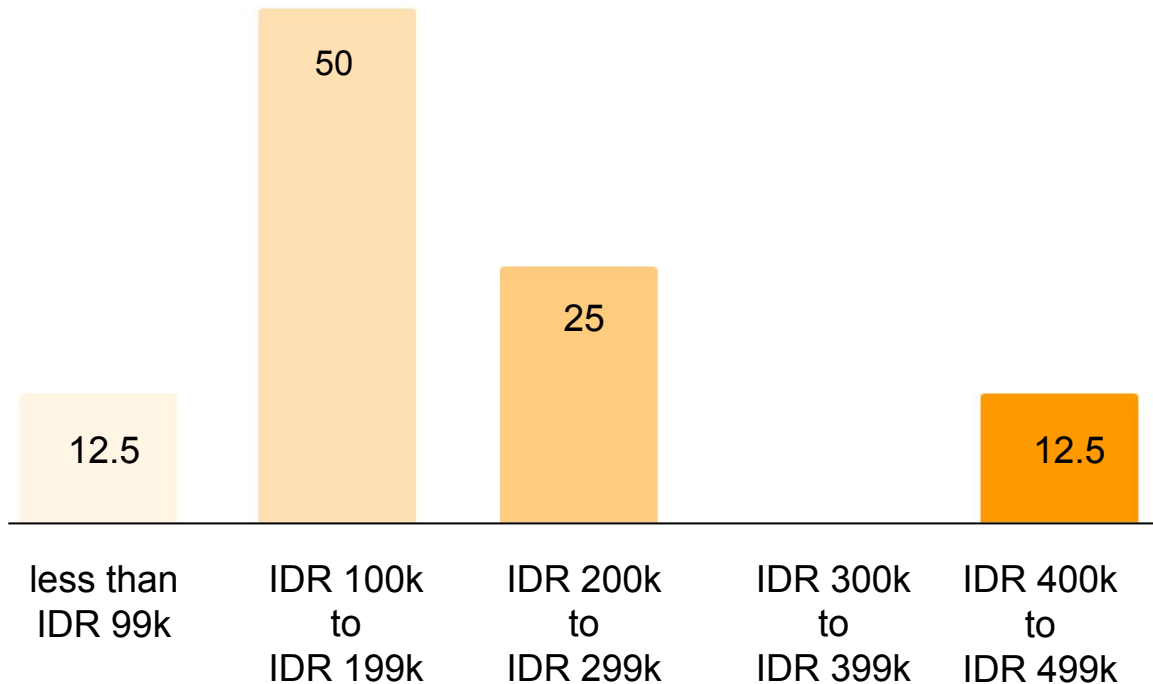
As power outages are common occurrences in Labuan Bajo (at least twice a month from 5 minutes to 4 hours), KOMAT agents frequently brought the solar lanterns to different meetings to light the way at night time and as illumination source during the meeting.



Solar lantern is expected to reduce KOMAT agents' monthly expense on alternative lighting to encounter power outage at night.

Monthly expense for electricity

%, (N = 8 respondents)



Monthly additional expense for lighting

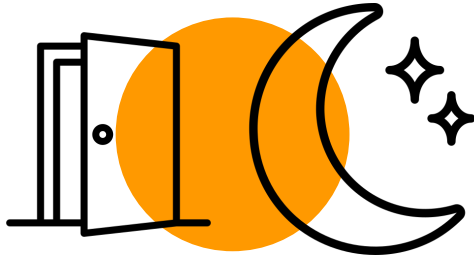
IDR, (N = 2 respondents)

 **IDR 16,000**

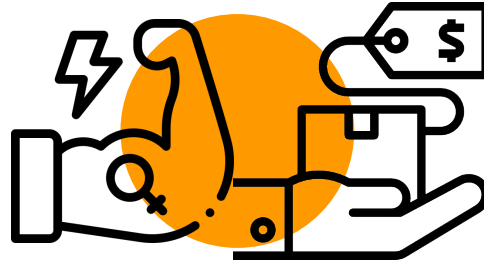
Tailors' extra spending to buy candles, kerosene, and batteries for lighting indicates they need additional lighting source such as solar lantern.



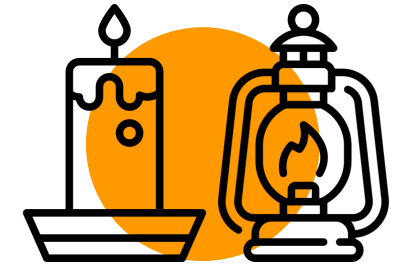
We see opportunities where solar lanterns could help agents' in their marketing activity, doing other jobs, and reduce spending for lighting.



Marketing Activity



Other Jobs



Spending for Lighting

State During Distribution

On average, a KOMAT agent conducts **four door-to-door** marketing activities in a month during the day.

Two out of nine respondents rely on being KOMAT agent as their main occupation. While others **take on other jobs/activity** such as being a student, NGO worker, journalist, masseuse, and journalist.

On a monthly basis, a KOMAT agent needs to **spend extra money IDR 16,000** to buy alternative lighting (candle, kerosene, and batteries) to anticipate sudden power outages.

Changes During the Monitoring

KOMAT agents now only do 1-2 promotional activities per week - that includes both socializations and door-to-door marketing activities.

The solar lanterns are being used as illumination in the shops - belonged to the KOMAT agents - that sells reusable pads. As such, KOMAT agents can still sell their products despite experiencing power outages.

The KOMAT agents experience a reduce of IDR 7,500 in average monthly spending for lighting

KOMAT AGENT

Angelina, 19 years old

“ I am a high school student, who is also a KOMAT agent. I promote Perfect Fit reusable pads in any occasions such as at gathering with my friends, and at my church. I also promote it in my social media. By working as a KOMAT agent, I learned how to value my self. Now I am more aware of environmental and womanhood issue. I hope all women in Indonesia can use reusable pads during their period.”



There has been a push from the KOMAT agents outside of Manggarai Barat for the Perfect Fit to help figure out new promotional strategies that they can apply in their own area.

As the economy of the people remains poor, many future customers do not have the disposable income to buy the reusable pads for their menstrual needs - despite the future savings that these pads give. Therefore, KOMAT agents need to find new selling strategies - like using payment instalments - to help attract new customers. However, KOMAT agents currently do not have the capacity to offer these new selling strategies because they are already busy with their own work. They would need further training and capacity improvement to be able to deploy new selling and payment strategies that are beneficial to both the KOMAT agents and their future customers.



A package of Perfect Fit menstrual products consisted of four pads

USERS

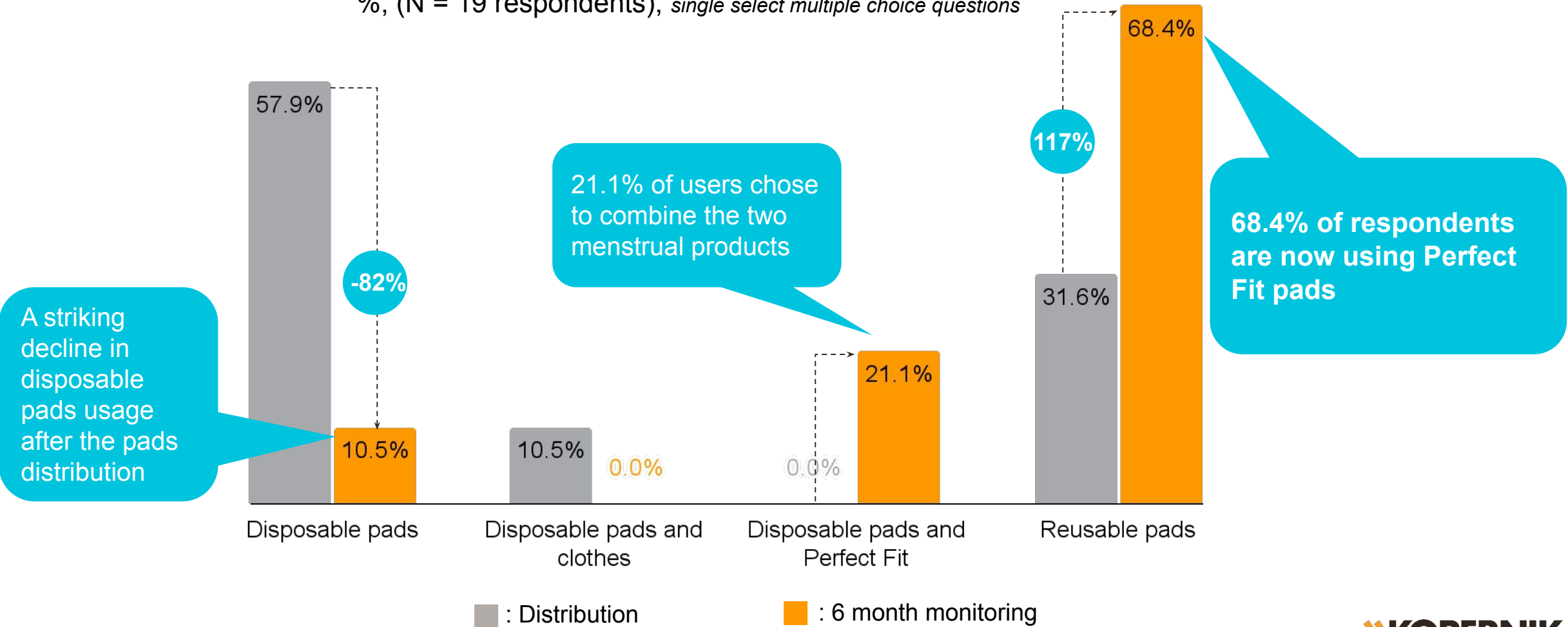




During monitoring, we found that majority of users have shifted from using disposable pads to reusable pads, followed by the combination of the two products.

Menstrual products

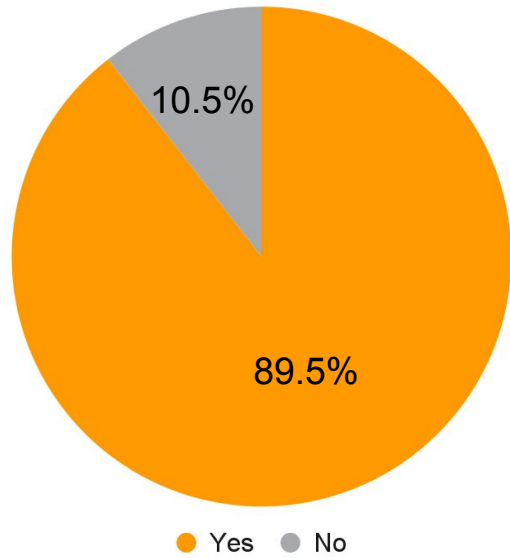
%, (N = 19 respondents), *single select multiple choice questions*





A total of 89.5% users gained economical benefit from menstrual pads, while some of them now only spent IDR 10,300 monthly to buy disposable pads as backup.

Experienced monthly expenses reduction on menstrual pads
IDR, (N = 19 respondents)



Average monthly spending for disposable pads
IDR, (N = 19 respondents)



Current monthly spending for disposable pads
IDR, (N = 3 respondents)



Current state during monitoring

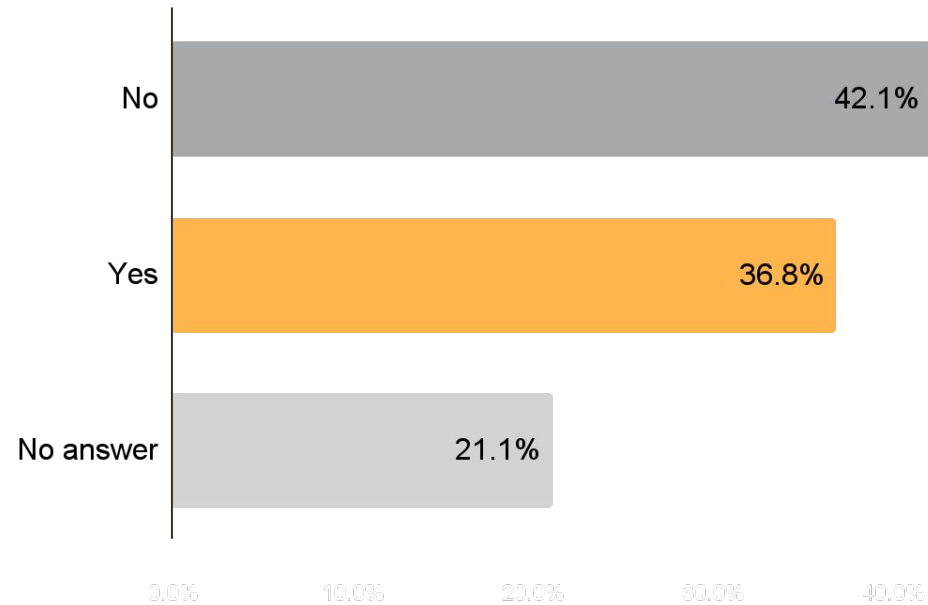
Half of the respondents who reported on using the reusable pads are still buying disposable pads to manage their menstruation. The current rainy season makes these respondents face difficulties in drying their reusable pads for their daily use. As such, they buy **disposable pads as a backup** should their reusable pads did not dry properly. Nevertheless, the average spending for these disposable pads are notably reduced.



The average spending for lighting spending has slightly reduced to 2.3% per month.

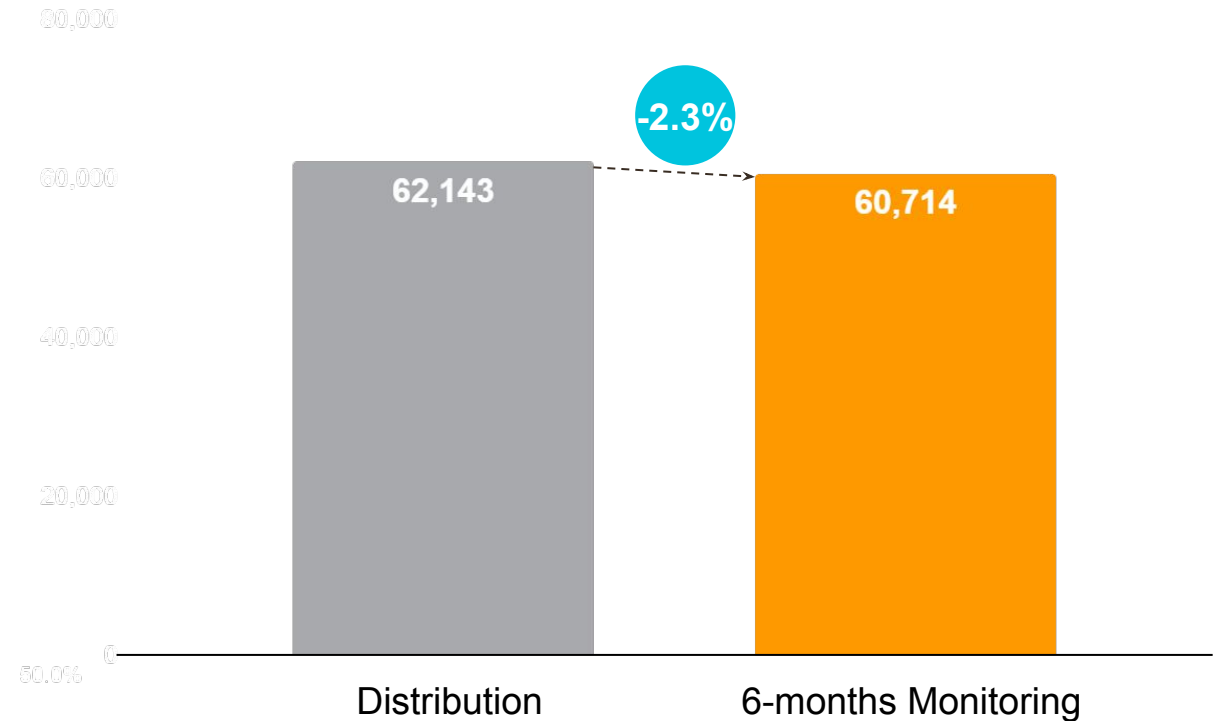
Experienced monthly expenses reduction on lighting

IDR, (N = 19 respondents)



Monthly expense for electricity (IDR)

IDR, (N = 7 respondents*)



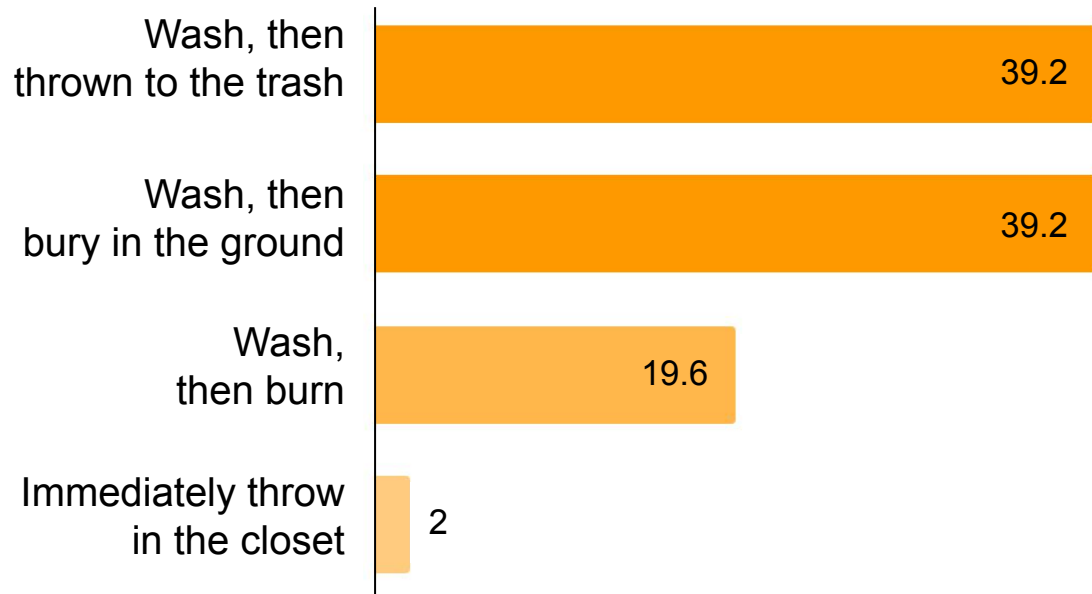
**Only 7 respondents from baseline and 6-month monitoring provided information electricity expenditure per month.*

Despite changing to reusable pads, traditional disposing practices still exist as beliefs in certain long-known myths related to menstruation pertain.



Handling a disposable pad

%, (N = 51 respondents)



Current state

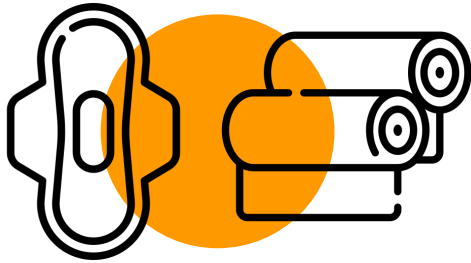
There's a circulating belief among society that menstrual blood is impure, dirty and cursed. A woman have to wash the disposable pads from the blood, then throw, bury or burn the pads. If not, the woman will be haunted by ghosts.

Opportunities

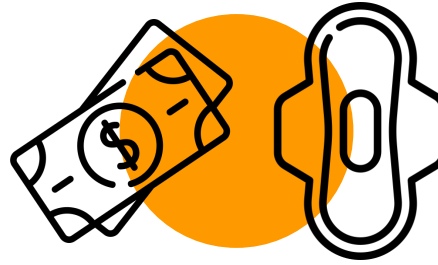
By receiving reusable menstrual pad, women can have better experience during menstruation through better menstrual products.



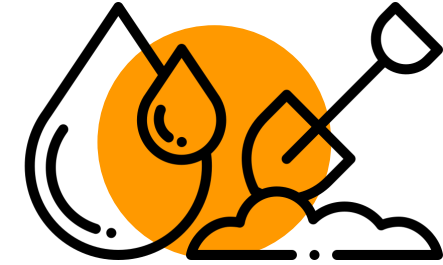
We see changes where solar lanterns and reusable pads alleviates menstruating women from period poverty.



Menstrual Products



Expenses for Menstrual Products



Handling Menstrual Products

State During Distribution

The majority of users respondents use **disposable pads** to manage their menstruation. Some of them still use cloth, and some other have been using reusable menstrual pads.

On average, users approximately **spend IDR 12,000** per month to buy disposable pads.

Majority of users respondents **wash** then **throw** or **bury** the disposable pad due to believe in certain long-known myths related to menstruation.

Changes During the Monitoring

The majority of user respondents have shifted to reusable pads to manage their menstruation. Some of them still use a combination of disposable and reusable pads.

On average, users monthly spending to buy disposable pads have reduced from IDR 12,158 to IDR 10,300.

Some user respondents found that the solar lantern allows them more time to wash reusable pads during night time

We found that many of our respondents do not have access to running water in their house. These respondents rely on rivers and communal water wells that are located quite far from their houses.

During the rainy season, they would also catch rainwater that they use solely for their bathroom needs. Respondents would fill water that will be used for drinking and cooking from the river and water wells, and carry them back to their house. However, for bathing and washing clothes (including their reusable pads), these respondents would go to the river or water wells instead. As such, these respondents do not usually wash their reusable pads during the night. They prefer to rinse the reusable pads first during the night, and wash them properly in the morning at the river or the water well. Often times, these respondents would also change their pads at the river or the water well instead rather than at home so that they can directly wash their reusable pads.



A woman from Tanarawa village, standing near the river where she changes and washes her reusable pads.

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Although the solar lanterns are not being used by the tailors to sew reusable pads during the night, the lanterns still contributes to the tailors' income as it helps them to prepare the things that they need to conduct their work during the night.

There is a decrease in the number of promotional activities being done by the KOMAT agents due to their own work engagements and low interest in the reusable pads. Many users have adopted the reusable pads as their main menstrual products. However, some users still need to buy disposable pads as backups during the rainy season. This is why we have not been able to achieve the targeted IDR 20,000 reduce in menstrual spending.

As users become more accustomed to the reusable pads and can better manage their washing using the solar lanterns at night, we expect to see further decrease in the disposable pads spending in the future.



A monitoring visit to recipients in Manggarai Barat by a Kopernik team member

Through this collaboration, Perfect Fit was able to deliver its mission by reaching more women and expand its impact. The impact of this project was one of the most prominent results of Perfect Fit in 2022.

Perfect Fit team are benefiting from the project to collaborate with international company to support their needs. Thus, this project provided a strong portfolio for B2B projects for Perfect Fit, as it demonstrated the effectiveness of combining sustainable menstrual products with other essential products.

This project could lead to more sales and B2B opportunities in the future, as companies and organizations become more aware of the benefits of integrating sustainable menstrual products with other essential resources to improve the lives of women in need.



The group of 10 tailors recipients in Labuan Bajo

To further ensure expected impact are met, the next monitoring survey will focus on the activities and income of tailors and KOMAT agents, and the spending of menstrual products for the users.

Respondent	Expected impact	6-month monitoring achievement	12-month monitoring focus
Tailors	<ul style="list-style-type: none"> The solar lantern to increase the productivity of tailors by providing lights to work during the night. The solar lantern allows tailors to work extra two hours a day for a more flexible working hours (eg. house chores, minding children) The solar lantern can support tailors in doing their side jobs that is estimated to add IDR 210,000 (USD 15)/month to their monthly income. 	<ul style="list-style-type: none"> The solar lantern are used to illuminate various activities that the tailors do at night, ranging from domestic, leisure, and work. 1.25 average hours reported to work at night (cleaning baking utensils and measuring baking ingredients) The solar lantern support tailors and added IDR 95,100 to their monthly income 	<ul style="list-style-type: none"> Reusable pads selling and menstrual health education activities as KOMAT Agents Breakdown of activities during the night Income from other jobs
KOMAT Agents	<ul style="list-style-type: none"> The solar lantern functions as a source of lighting for the agents to conduct an additional two door-to-door marketing activities per month during the night. The solar lanterns allow the agents to attend informal gatherings that takes place during the night to meet with local figures, build contacts and relationship. 	<ul style="list-style-type: none"> There is a decline in the monthly average promotional activities from seven to five. As power outages are common, KOMAT agents frequently brought the solar lanterns to different meetings to light the way at night time and as illumination source during the meeting. 	<ul style="list-style-type: none"> Number of promotional activities New types of promotional activities Spending on illuminations
Users	<ul style="list-style-type: none"> The Perfect Fit pads can be an alternative menstrual product that are chlorine free and environmentally friendly. The Perfect Fit pads can save IDR 20,000 (USD 1.2)/month. The solar lantern allows users to have extra one hour to wash the reusable pads with ease at night. 	<ul style="list-style-type: none"> The majority of users have shifted from using disposable pads to reusable pads The average spending for disposable pads has reduced to IDR 10,300 per month On average a user has an extra 1.5 hours to conduct activities at night, one of them is to wash reusable pads. 	<ul style="list-style-type: none"> Activities using the solar lanterns Spending on disposable menstrual pads Spending on illuminations