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Polish aid

Polish Aid Grant
Final Report - Kopernik

1. Organization & Program Information

Project name	Kame Tane (We Weave Together) Supporting Women Weavers in Adonara & Lembata with Ergonomic Weaving Tools
Project number	n/a
Name of the institution	Yayasan Kopernik
Name of the partner institution/contractor	Harness Loom
Project implementation period	July - December 2022

2. Description of the project implementation

2.1 Information on the achieved goal of the project

Supported by Polish Aid, Kopernik provided support to women weavers in Adonara and Lembata to minimize physical pain caused by their current weaving tools through the provision of ergonomic weaving tools. Below are the achievements from the project implementation:

1. Replication and distribution of nine ergonomic weaving tools

The ergonomic weaving tool is a modified traditional weaving tool which eliminates the risk of health hazards without altering traditional warping and weaving techniques. The ergonomic weaving tool is developed without a backstrap loom, but modified with a swing and lever mechanism as a tension controller. The tool is also elevated from the ground to allow for a better sitting position.

Together with Harness Loom, we produced seven ergonomic weaving tools and distributed them to women weavers in Adonara and Lembata. Each tool is also equipped with a chair and stool to allow a comfortable sitting position, as well as a solar light to support lighting during warping and weaving. Four ergonomic weaving tools have been produced and distributed to Adonara, and three produced during this program period to Lembata. An additional two tools from the previous program phase were also distributed to Lembata. Therefore nine tools in total were distributed to weavers.

During the program period, we visited Harness Loom's workshop several times for quality control monitoring to ensure the ergonomic weaving tools were consistent and functioning well prior to shipping.

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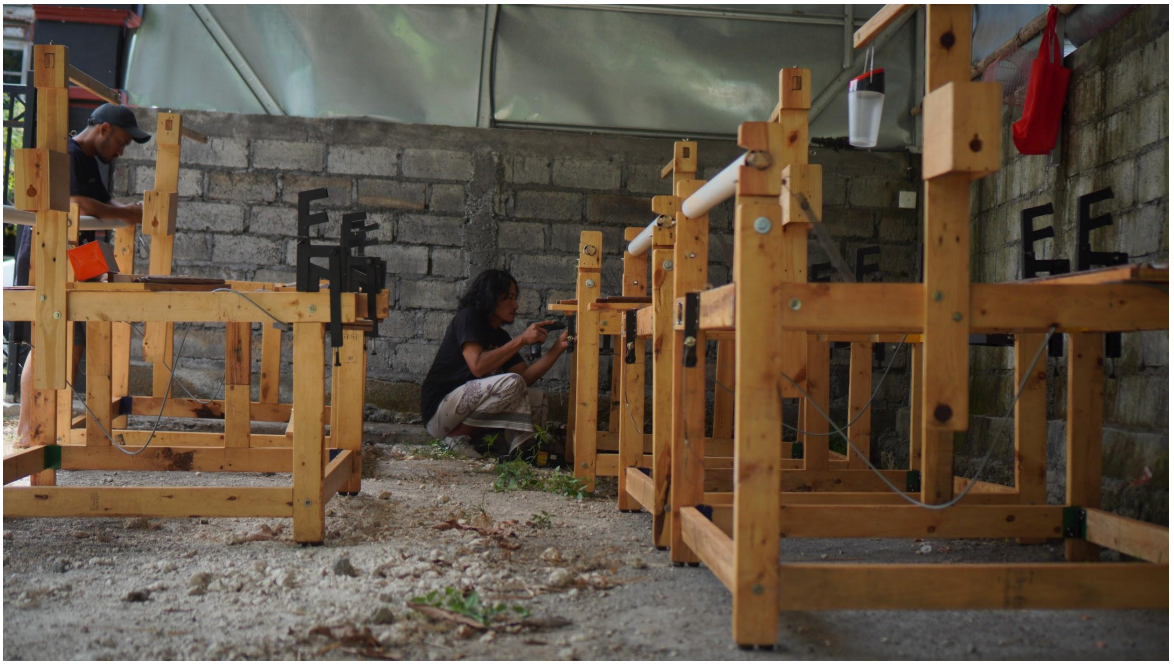
The fully assembled ergonomic weaving tool produced during the program period



Kopernik and Harness Loom conducted quality control monitoring before shipping.

2. The ergonomic weaving tool provided a more comfortable weaving experience

We partnered with two local coordinators in Adonara and Lembata to coordinate the activities with women weavers in both project sites. The local coordinators successfully arranged the ergonomic weaving tools distribution to each participant, assisted with the assembly, monitored the tool utilization by women weavers, procured and distributed yarn, and provided troubleshooting support.

Despite a limited implementation period of only two weeks before the dissemination event, six women weavers in Adonara were able to utilize the five ergonomic weaving tools regularly and effectively. However, only one weaver in Lembata had time to use the ergonomic weaving tool, due to time constraints and community events. Nevertheless, some other women weavers who live nearby the project participants have seen the tool and have become interested in learning and trying the use the tool by themselves.

A weaver in Adonara is warping with the ergonomic tool assisted by a local coordinator.

A weaver in Lembata is using the ergonomic weaving tool for weaving.

The endline survey showed that women weavers in Adonara reported a significant reduction of pain levels during warping and weaving using the ergonomic weaving tools. Meanwhile, the results from Lembata were inconclusive due to insufficient data collected.

3. Development of ergonomic weaving tool construction and assembly guideline

To accommodate the interest of weavers or communities in replicating the ergonomic weaving tool independently, we have developed and shared the construction and assembly guidelines. At the dissemination events in Adonara and Lembata, we explained the details of the guideline to the weavers, village officials, and craftsmen. We then handed over two printed copies of each document to the local government and weaver groups. During the event, we received a lot of interest from the government and community members from the neighboring villages in replicating the tools using locally available resources, that will be funded by the village fund. This session also invoked discussion and feedback for future modifications to improve the comfort and effectiveness of the ergonomic weaving tool.

Ergonomic Weaving Tools Construction Guideline (left) and Assembly Guideline (right).

2.2 Information on the implemented activities

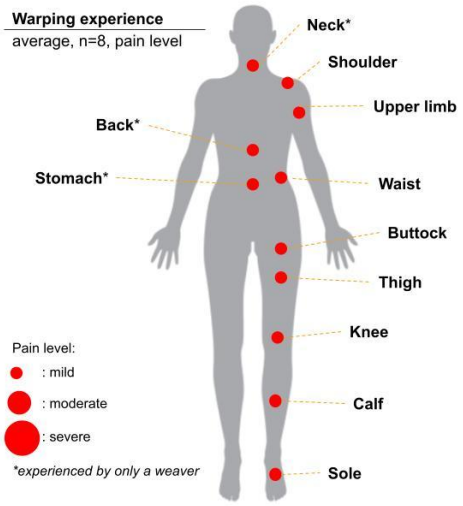
The project activities we have successfully implemented are detailed below:

1. Baseline survey

Prior to the project implementation, we conducted a baseline survey of women weavers in Adonara and Lembata. The baseline survey focused on identification of current weaving practice and pain levels resulted from prolonged use of the traditional tools.

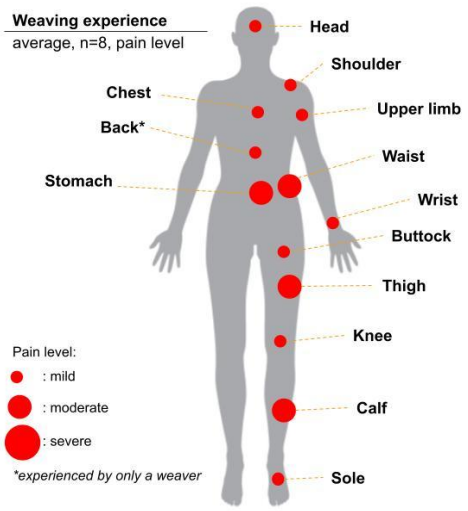
- Adonara

  Eight women weavers participated in the baseline survey in Redontena village, Adonara. Since there is no weaving group in Redontena village, women weavers weave individually at their own houses. On average, each participant spends 4.5 hours daily for warping, five hours daily for weaving, and can produce four woven fabrics in a month.



Mama Nes, an Adonara weaver is warping in the traditional tool

Women weavers in Adonara use two separated tools to warp and weave. For warping, they use a semi elevated wooden tool, where they can sit in a chair to operate it. One of the participants warps using the non-elevated traditional tool, therefore she sits on the floor to warp for hours at a time. On average, women weavers in Adonara experience mild pain all over their body from neck down to the soles of their feet during warping using the traditional tool.



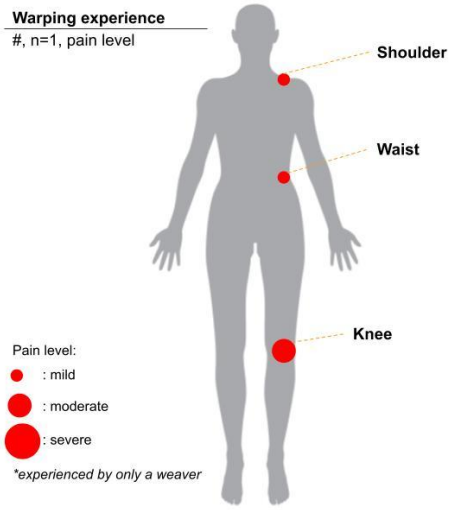
Mama Sedo, an Adonara weaver is weaving in the traditional tool

During the weaving process, women weavers in Adonara use a traditional weaving tool with a backstrap loom and sit on the ground. As a result, they experience moderate pain in the stomach area, waist, thigh and calf. The pain in the waist is due to the tied back strap loom, while pain in the thigh and calf is caused by the sitting position where their legs are stretched out for hours at a time. The pain in the stomach area is due to repeated hits to the stomach from the reed.Weavers generally experience mild pain all over their body from the head down to their feet.

- Lembata

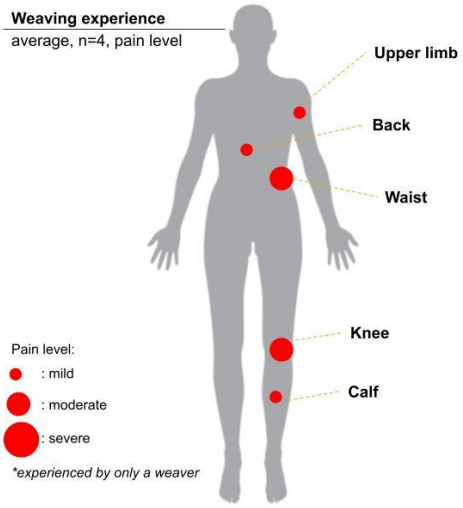
Four women weavers participated in the baseline survey in Tagawiti village, Lembata. All of the weavers participants are members of Mentari weaving group in Tagawiti village. They have a collective weaving schedule every Friday from 9am to 5pm at the village hall. There is a division of labor among the weaving community members, where some weavers are assigned to warp based on their skills, while the others weave.

At home, they weave during their spare time in between household activities. They spend 2.5 hours daily for warping and four hours daily for weaving, and can produce 1.5 woven fabrics in a month.



Mama Ilona, a Lembata weaver is warping in the traditional tool

Women weavers in Lembata still use the traditional non-elevated tool for warping. The pain is concentrated in the knee area due to the sitting position. The pain in the knee causes the weaver unable to walk for some time after prolonged weaving.



Mama Peni, a Lembata weaver is weaving in the traditional tool

Women weavers in Lembata use the same traditional weaving tool as in Adonara. They experience moderate pain at waist and knee during weaving using the

traditional tool resulting from the tied back strap loom. While the pain on knees is due to the sitting position.

In addition to identifying the current weaving practice and pain levels using the traditional tools, we also brought a unit of the ergonomic weaving tool from the previous project to each village. We demonstrated the way to assemble the tool and provided the weavers a chance to try the ergonomic weaving tool for themselves. We also gathered feedback from their initial experience with the tool.

The ergonomic weaving tool was first trialed by women weavers in Lembata.

2. Production and shipping of the ergonomic weaving tools

We used feedback collected from weavers during the baseline survey to guide the production of the ergonomic weaving tools. Firstly, we redesigned the rotator block to make the weaving process more convenient. Secondly, we used special bolts to make the assembly process easier, and upgraded its size to strengthen the structure. We then coordinated the procurement of materials and monitored the production of ergonomic weaving tools by Harness Loom in Bali.

After finishing the production, we shipped seven ergonomic weaving tools (four units to Adonara and three to Lembata) using the same vendor we worked with for the ergonomic weaving tools pilot project. In the meantime, the production of chairs and stools for the ergonomic weaving tool was completed by wood craftsmen in Adonara. The chairs and stools were then shipped to Lembata by boat.

The making of ergonomic weaving tool components.

3. Development of ergonomic weaving tools construction and assembly guidelines

We developed the ergonomic weaving tools construction and assembly guidelines for future replication purposes. The ergonomic weaving tools construction guideline is a collection of information related to the procedure of creating an ergonomic weaving tool from scratch. The target user for these guidelines are those who are seeking detailed instructions to manufacture the tool. This guideline consists of a list of materials and tools needed during the manufacturing process, the breakdown of parts of ergonomic weaving tools, technical drawings, and the assembly procedure.

As for the assembly guideline, it provides information regarding the procedure for assembling ergonomic weaving tool parts into a complete and functional tool. The target user for this guideline is anyone who receives the ergonomic weaving tools knock-down package and wants to assemble the tools by themselves. This guideline consists of a description of each part included in the knock-down package, a list of tools needed to assemble, and the procedure of ergonomic weaving tool assembly.

4. Monitoring the use of ergonomic weaving tools

Monitoring activities included assembling, troubleshooting and data collection during the utilization of the ergonomic weaving tools by weavers, and were conducted by the local coordinators. Local coordinators assisted the project participants in assembling the ergonomic weaving tools using the printed assembly guidelines and video as their

references. Local coordinators found no significant difficulty in assembling the ergonomic weaving tool. In addition to the local coordinator, the troubleshooting for the ergonomic weaving tool was also being supported by the weaver's family members, mostly male family members.

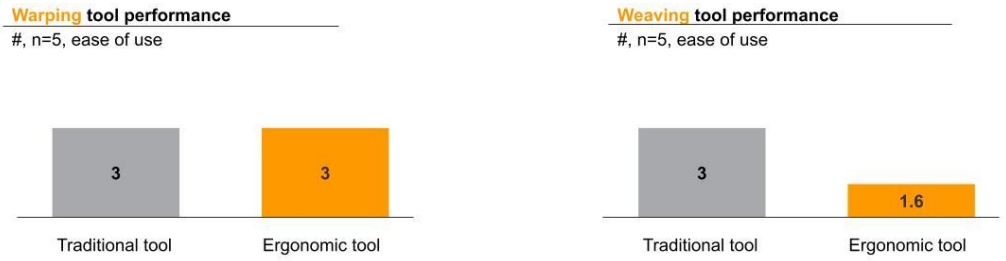
In terms of data collection, we developed a monitoring survey form, and explained all questions and methods for the weavers to the local coordinators. Initially, the local coordinators planned to have a weekly interview with the weavers to collect data. However, due to the delay in the tools delivery in project locations, they were only able to interview the weavers in Adonara once, and unable to interview weavers in Lembata.

At the end of the monitoring period, our local coordinator in Adonara was able to showcase the tool to the village and sub-district officers in a local event. Women weavers in Adonara then took advantage of this opportunity to initiate a discussion regarding replication opportunities with the local government.

5. Endline survey

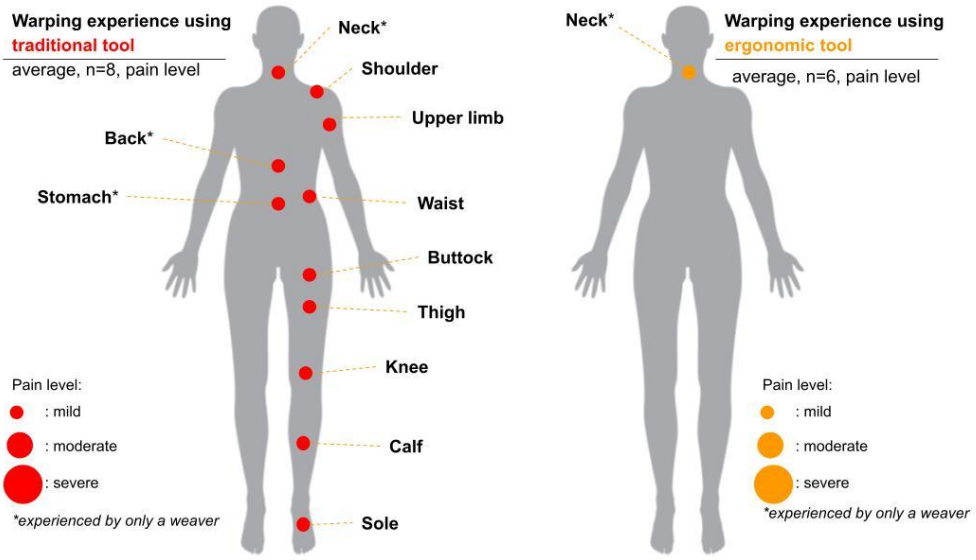
Upon completion of the project activities, we conducted an endline survey with women weavers in Adonara dan Lembata to understand the impact of ergonomic weaving tools in eliminating the risk of health hazards in warping and weaving activities. The endline survey focused on identifying the ergonomic tool performance for warping and weaving through its ease of use, as well as weavers' experience in using it, indicated by pain levels.

- Adonara

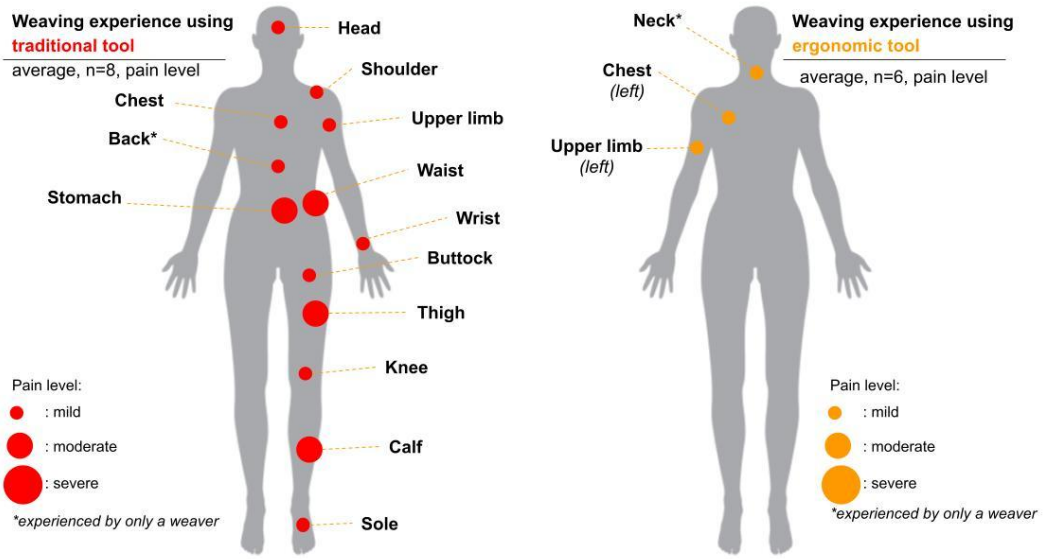


Scale 1-3:
1: difficult, 2: moderate, 3: easy

During the endline survey, women weavers identified that the ergonomic tool was as easy to use as the traditional one, despite the short period of time using the ergonomic weaving tool. They found no difficulties in using the tool for warping as there are no technical changes applied. However, they found that the ergonomic tool is a little bit more difficult to use for weaving because of the new mechanism in tension control, adjustment on the swing arm and lever mechanism. Nevertheless, most of them believe that the ergonomic tool could get easier for weaving the longer they use it.



During the endline survey, we learned that almost all participants in Adonara no longer experience pain during warping using the ergonomic tool. The elevated tool supported weavers to flexibly warp while standing or sitting on a stool. They also mentioned that warping using the ergonomic tool is more relaxing and enjoyable.



As for weaving, we discovered that pain in the stomach area, waist, thigh and calf disappear after weavers use the ergonomic tool for weaving. Nevertheless mild pain on the left chest and left upper limb are present as a result from operating the lever to control the tension.

- Lembata

  Due to the community events as well as the delay in the tools delivery in project locations that limited our ability to conduct the online survey, we were unable to conduct an endline survey in Lembata.

Therefore, the data from Lembata was insufficient to draw a conclusion from the intervention. As a consequence, we will continue monitoring the use of ergonomic weaving tools by the weavers after the project closure.

6. Dissemination event

We have successfully wrapped up the project through two dissemination events in Adonara and Lembata attended by 96 stakeholders consisting of government officials, village officials, women weavers, women groups, and craftsmen.

Types of stakeholders	**Number of participants**		**Total number of participants**
	Dissemination event at Redontena village, Adonara 28 November 2022	**Dissemination event at Tagawiti village, Lembata 26 November 2022**	
Sub-district officer	1	1	**2**
Head village(s)	3	1	**4**
Head of a noble family	1	-	**1**
Village officers	5	5	**10**
Women weavers	36	14	**50**
Women groups representatives	13	12	**25**
Craftsmen	4	-	**4**
Total	63	33	**96**

At the dissemination event, we shared the results of the project, step-by-step guide to read and utilize the construction guideline and assembly guideline. Below are some highlights of the discussions:

- Women weavers in Adonara and Lembata are willing to continue using the ergonomic weaving tools for warping and weaving.
- They are eager to modify the lever mechanism in order to improve the tool performance and make the weaving process easier. Some ideas such as changing the lever to hand brake mechanism was generated during the discussion.
- The ergonomic weaving tools have increased the women weavers' experience in weaving allowing them to share their experience, encourage the village officials to replicate the tools, as well as promote the conservation of their traditional weaving culture to the participants.

- The head of the village stated publicly that the village would propose a budget for this replication to obtain the village fund and provide a dedicated space for the community to weave together.
- Craftsmen from the surrounding area were also invited to the event and have expressed their interest to be involved in the replication process.

2.3 Changes made to the project during its implementation

There were several activities that had to be adjusted during the project implementation, these are detailed below:

1. **Location**

We initially proposed this project to be carried on at the same village where we conducted the pilot testing for the ergonomic weaving tools, in Weranggere village, Adonara and Bungamuda village, Lembata. However, we decided to move the project sites after receiving recommendations from our local coordinators in Adonara and Lembata. They suggested to proceed the project in Redontena Village, Adonara, and Tagawiti Village, Lembata. Women weavers at these villages also had the same issues with discomfort while using traditional weaving tools and showed a huge interest in trying the tools.

2. **Number of beneficiaries of the project**

The initial idea was to deploy seven ergonomic weaving tools to seven weavers groups in two villages Adonara and Lembata. Assuming an ergonomic tool in each weaving group can be utilized by at least five women weavers, in total there will be 35 women weavers supported by this project. However, the suggested villages by local coordinators are quite large. This could be challenging for local coordinators to monitor the implementation. On top of that, maintaining a close distance between women weavers and local coordinators is important to ensure the monitoring and troubleshooting of the new tool can be done immediately. Therefore, we focused on distributing nine ergonomic weaving tools (seven brand new units and two existing units) to nine dedicated women weavers in the two villages.

In Adonara the five ergonomic weaving tools were placed at each weaver's house by considering the number of other women weavers living in their area who can utilize the tools as well. As for Lembata, the four ergonomic weaving tools were placed at the village hall where they have regular gathering for weaving every Friday.

2.4 Information on the beneficiaries of the project

Our beneficiaries are women weavers who live in Redontena village in Adonara, and Tagawiti village in Lembata, and rely on weaving as their livelihood and primary source of income. During our baseline surveys, we engaged twelve weavers, eight in Adonara and four in Lembata. All of them are more than 50 years old with more than 30 years of weaving experience.

In total, we selected nine weavers as participants to test the ergonomic weaving tool, five of them are from Adonara, and four are from Lembata. We selected weavers based on the recommendation from our local coordinators, their skills and experience in weaving, and interest in using the ergonomic weaving tools. We recruited young weavers as well.

As for the indirect beneficiaries, we involved all women weavers in Redontena and Tagawiti village, especially those who live nearby the participants. In total, 14 women weavers have utilized the ergonomic weaving tools in Adonara and Lembata.

2.5 Information on difficulties in the implementation of the project

1. Shipping the ergonomic weaving tool

The shipping of ergonomic weaving tools from Bali to Adonara and Lembata took longer than expected. The actual shipping itself took four weeks, however the tools had to queue for the ship departure schedule from Surabaya for a month. It was also difficult to track the position of the units as many parties were involved in the process.

The ergonomic weaving tools only arrived in the second week of November in Adonara and Lembata that had pushed back the schedule for other activities. We initially planned to have five weeks of monitoring period, however with the delay in the tool shipment, we only had two weeks before the dissemination event to assemble and monitor the use of the tools by the women weavers.

Unit number	Destination	Bali to Surabaya *(road transport)*	Surabaya to Destination via Maumere *(sea transport)*	Remarks
4 units	Adonara	19-22 Sept *(4 days)*	22 Oct-11 Nov *(3 weeks)*	The queue of cargo ship in Surabaya for a month (23 Sept-21 Oct) has delayed the tools arrival, monitoring and data collection period.
3 units	Lembata	19-22 Sept *(4 days)*	22 Oct-8 Nov *(3 weeks)*	

The actual shipping process and timeline

2. Family issues

During two weeks of endline survey schedule, two of four women weavers participants in Lembata lost their family members. Therefore, we carried on the activities with available participants in data collection and endline survey.

3. Communication with local coordinator

The role of local coordinators in this project implementation is critical. We hired two local coordinators in this project, one in each location. During the monitoring process, we had challenges in terms of communication with our local coordinator, especially in Lembata due to an unstable internet connection. We tried to contact her regularly through WhatsApp and phone calls. Despite the difficulty, it turned out that she had already completed her coordination activities well.

4. Communication with drafter

We initially planned to hire a drafter to generate the ergonomic weaving tool 3D model images and technical drawings that will be loaded into the construction guideline. We issued a contract for two months to complete the specified task. During the working process, we found difficulties communicating with the drafter and monitoring the progress of the task. Due to personal reasons, the drafter responded very slowly and did not send the progress until the specified deadline. In the last two weeks before the contract ended, we decided to terminate the contract and took over the tasks ourselves.

3. Promotion of the project

For promotional purposes, we have published several postings about the program on our social media platforms, as follows:

- *Instagram: 20 September 2022: Kame Tane Weaving Together with Women in Adonara & Lembata*
- *Twitter: 19 September 2022: Kame Tane Weaving Together with Women in Adonara & Lembata*
- *Facebook: 20 September 2022: Kame Tane Weaving Together with Women in Adonara & Lembata*
- *LinkedIn: November 2022: Kame Tane: Weaving Together with Women in Adonara & Lembata*

3.1 Photographic material

Please attach five photos of the project implementation to the report. In order for them to be used in printed publications of the Ministry of Foreign Affairs, they should have a resolution of not less than 300 dpi, with a dimension of 300 mm wide. The size of a single file should not exceed 25 MB. In the next field, please provide the following information about each of the photos you upload:

• Name and surname of the photographer, or the name of the organization for which he works.
• Date and place where the photo was taken.
• Brief information about who and what the picture shows (people, situation).

Picture 1

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Andre Dananjaya, Kopernik | 28 November 2022, Redontena Adonara | Participants of Kame Tane project dissemination event in Redontena village, Adonara, East Flores.

Picture 2

Andre Dananjaya, Kopernik | 28 November 2022, Redontena Adonara | Participants of Kame Tane project dissemination event in Redontena village, Adonara, East Flores.

Picture 3

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Andre Dananjaya, Kopernik | 28 November 2022, Redontena Adonara | Women weavers in Redontena village, Adonara trying to use the ergonomic weaving tools for the first time.

Picture 4

Randiano Tamelan, Kopernik | 26 November 2022, Tagawiti Lembata Adonara | A women weaver in Tagawiti village, Lembata trying to use the ergonomic weaving tools for the first time.

Picture 5

Hanif Fauzi, Kopernik | 26 November 2022, Tagawiti Lembata | The local coordinator explaining the features of ergonomic weaving tools.

Picture 6

Matildis Jawa | 22 November 2022, Lembata | Weavers tried warping with custom motives using the ergonomic weaving tool.

Picture 7

Kamsinah Bolen | 18 November 2022, Adonara | The weavers weaved using the ergonomic weaving tool with support from people in the village .

Picture 8

Putu Yuta, Kopernik | 19 September 2022, Jimbaran | A fully assembled ergonomic weaving tool in weaving mode

Picture 9

Randiano Tamelan, Kopernik | 26 November 2022 | Dissemination event in Lembata.

3.2 Results of the project (for promotional purposes)

Please describe only actually conducted actions and achieved results. The description should take around 4 short paragraphs (1000-1500 characters) including:
- Summary of results of the activities and their results (max 500 characters)
- Indication of the actual time of the implementation of the project
- Indication of the possible changes of the project (for instance omitting some of the planned activities or conducting some extra activities)
- Description on how the project has led or may lead to a sustained change for the beneficiaries and how the project can continue to bear fruits after it has been concluded.

Supported by the Polish Aid, Kopernik has provided support to women weavers in Adonara and Lembata to minimize physical pain caused by their current weaving practices, through the introduction of an ergonomic weaving tool. This project was conducted in Redontena village, Adonara and Tagawiti village, Lembata, between July and December 2022. We deployed nine ergonomic weaving tools to the women weavers, and handed over construction guidelines and assembly guidelines to the villages for further replication.

Despite the short period of implementation, we found that the program brought a positive weaving experience for the participants. The ergonomic weaving tools have significantly reduced pain experienced in the stomach, waist, thigh and calf areas due to prolonged weaving using the previously used traditional methods.

Since its implementation, the program has attracted interest from the local governments, neighbouring villages and craftsmen to potentially adopt and replicate the tools with some adaptation. The communities were eager to replicate the ergonomic weaving tool with adjustments based on the feedback from women weavers.

This level of interest indicates that there is a high potential for further adoption and replication of the ergonomic weaving tools.

4. Additional materials from the project

(Please attach any additional materials – documents, publications, films, recordings etc. Two attachments possible, each of max. 25 MB (each of them could be a collection of files packed by Zip or RAR). If more attachments are available, please upload them to an external disc and provide a link.

- *Video summary of the project*
- *Ergonomic Weaving Tool Construction Guideline*
- *Ergonomic Weaving Tool Assembly Guideline*
- *Kame Tane Final Report Presentation*