



## GENDERED DESIGN IN STEAM



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*“We want that technology to be specifically for the women. We want to modernize it, but we want it to be beneficial to these women particularly.”*

— Pendo Bigambo

ID79

# Modernization of the Tanzania's Batik Industry as a Potential Source of Income for Unemployed Women: The Case of Dar es Salaam



Batik is an artistic technique that is created by applying wax to fabrics in specific patterns, followed by dyeing the fabric repeatedly until it has achieved the desired design and colour. In Tanzania, the batik industry is dominated by small and medium firms, mainly led by women in both rural and urban areas who practice the art of batik usually in their own homes. Through survey and interview methods, this study identifies the many challenges associated with the industry, particularly with the techniques that are currently used in the batik industry in Tanzania. Upon analyzing the data from the survey and interviews, modernized and standardized batik techniques were introduced to the industry for the purpose of assisting batik producers in creating high quality and sustainable batik products with potential to be sold in international markets.



Workshop participant showing fabric dyed using natural dye extracted from onion peels, while varying the mordanting agents to enhance certain colours.

### Outcomes

- Development of a standardized method to eliminate issues associated with using synthetic dyes which require large amounts of chemicals that are often detrimental to the general health of batik producers.
- Reduce use of chemical dyes by developing techniques that utilize natural dyes extracted from onion peels and turmeric root for batik dyeing. Using natural materials also reduces the amount of chemical waste that is disposed of by the batik producers.
- Workshops encouraged networking and sharing of knowledge amongst the producers of batik in Dar es Salaam, Tanzania, leading to potential business developments within the community.
- New standardized methods allow batik producers to create products with improved quality and potential repeatability. New patterns and designs attract more customers, as well as allow batik products to access new markets.



Top: Dyeing batik using natural dye extracted from turmeric root. Bottom: Participants tying stamped batik in preparation for dyeing during workshop two: standardized batik dyeing techniques. Location: Dar es Salaam.

### Methods

- Data was collected through interviews and a questionnaire to establish the current state of the batik production industry in Tanzania. After analyzing the data, women who produce batik within the Dar es Salaam region were invited to two workshops that would introduce new, efficient, and safe methods of producing batik. There were 18 participants for workshop one and 25 participants for workshop two.
- Researchers developed new technology and standardized methods to promote safety, sustainability, and producibility within the batik industry. These developments included producing a folding table to increase workspace, and using natural dyes extracted from onion peels and turmeric roots in order to reduce dependency on chemical dyes.
- The first workshop, in June 2021, focused on developing new batik motifs and patterns as well as establishing challenges that women batik producers in Tanzania face. Local batik producers worked with professional graphic designers to co-develop new patterns and designs.
- The second workshop, in July 2021, invited participants to produce batik using the designs developed in workshop one. During this workshop, participants were able to practice using the newly standardized dyeing methods to see how they compare to conventional methods.



Top: Dr. Bigambo demonstrating standardized batik techniques by stamping patterns on to fabric during workshop two. Bottom: Participants displaying batik results after stamping and dyeing the fabric with natural dyes. Location: Dar es Salaam.

### Lessons & Future Directions

- Researchers and participants are working together to produce a manual which will contain all batik dyeing procedures and techniques that were developed during the research and workshop periods. The manual will be available in two languages, English and Swahili, so as to reach a large group of users. Proposed publication is mid-September 2022.
- Two journal articles on the status of the batik industry in Tanzania and on the application of natural dyes in batik dyeing are being prepared. This is in response to the lack of data available prior to the start of this project. Proposed publication mid-August 2022.

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