FABRIC PATTERN FROM UPCYCLE PACKAGING MATERIALS

Supawadee Juysukha
Faculty of Fine and Applied Arts, Suan Sunandha Rajabhat University, Thailand
Email : supawadee.ju@ssru.ac.th

ABSTRACT

This study was conducted on the local wisdom of the stamp making process for Batik patterns through a participatory action research. The objective is to gather the knowledge and understand the wisdom transferring process to local youth or those who are interested.

The case study used for this research is the Batik production process, through a combination of data collection methods including formal and informal interviews, participatory and non-participatory observations, descriptive data analysis and in-depth interview analysis along with group discussions. The results of the research can be summarized as follows:

1. Stamp or block making for Batik fabric pattern printing from upcycle packaging materials in the area. Since the majority of the population in the area of Southern Thailand, are Muslims, roti and milk tea are popular in the area resulting in numerous leftover cans of condensed milk. With the traditional wisdom, local knowledge and waste materials, an efficient use of waste material is found.
2. The process of transferring wisdom is divided into 2 levels: the local community level and the public level. At the local community level, an occupation community, a group of people aiming to create occupations in the community, is responsible for the transferring. For the public level, those responsible for the transferring of the local wisdom are those who are interested in the local wisdom and pay attention to the use of waste materials for design works. This can be designers, manufacturers and educational personnel.
3. Community product identity with intriguing, standout and unique production process.

Keywords: Batik/ local wisdom / upcycle packaging materials

INTRODUCTION

Sustainability is mostly categorized into three major dimensions, namely, human well-being, the economy, and the environment. These three categories can be regarded as a means of improving human well-being and maintaining the resilience of the ecosystem. This can also be linked to packaging materials. Packaging materials are a significant part of our lives due to their daily usage at grocery stores, supermarkets, restaurants, etc. Packaging plays an important role in ensuring that the products are preserved during handling, transporting, and storage. This research focused on the sustainability of packaging materials and the steps which should be undertaken to ensure and enhance sustainability. Packaging materials have shown significant importance for the protection and safety of their contents, and they have been widely used in various areas of life. (see Ibrahim et al. 2022)

"Pulled Tea" or "Teh Tarik" in the Malay dialect refers to a culinary culture commonly found throughout the Southern provinces in Thailand. The drink is unique in its richness and mellow taste from the combination of tea, condensed milk and fresh cow's milk or goat's milk, boiled with hot water. The above mentioned tea drinking culture has led to a high number of condensed milk can wastes in the area. Material sustainability is a function of several factors ranging from the economic to the environmental, including costs and impacts, the functionality of aesthetic properties, the production to the processing of end-of-life, and from local- to global-scale effects.

RESEARCH OBJECTIVES

1) To study design thinking process, local wisdom, beliefs, arts, culture, and way of life;
2) To study the production process of fabric pattern;
3) To transfer knowledge that can be used for further designs and developments to sustainably create value added and worth for local products in various contexts; and
4) To create a guideline for designs from upcycle packaging materials.

METHODOLOGY

1. Data collection

The researcher combined qualitative and action research methods to collect primary data from field data collection in Southern provinces of Thailand. The secondary data were from various sources of literature and books about the culture, production processes and pattern of local wisdom derived by printing the resist with a metal stamp called a cap. The collected data were applied to create a sample technique of fabric block printed and dyeing with natural colour. A satisfaction survey of the sample technique was conducted by using the prototype to a sample of 100 consumers in order to use the satisfaction assessment results to improve the techniques. According to Plattner et al. (2009), the Design Thinking process consists of six process steps with iteration loops: Understanding, observing, defining problems, finding ideas, developing prototypes and testing. The initial three phases, the so-called problem space (see Lindberg et al. 2010)), describe the problem and its causes (what is the problem and why is the problem there?).

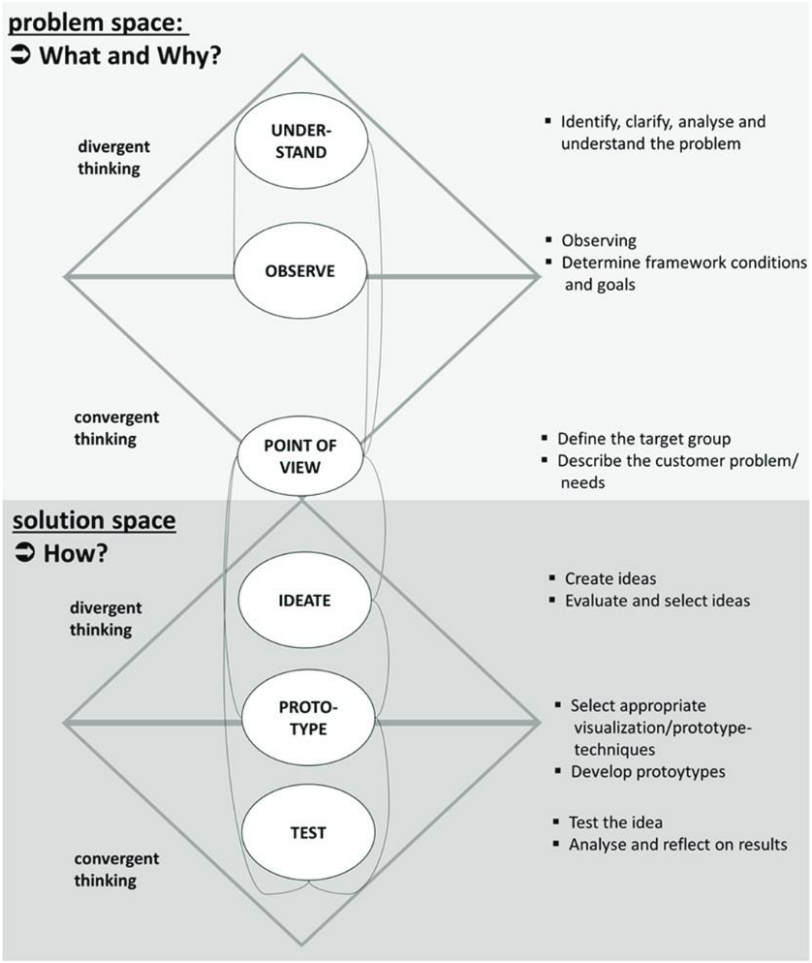
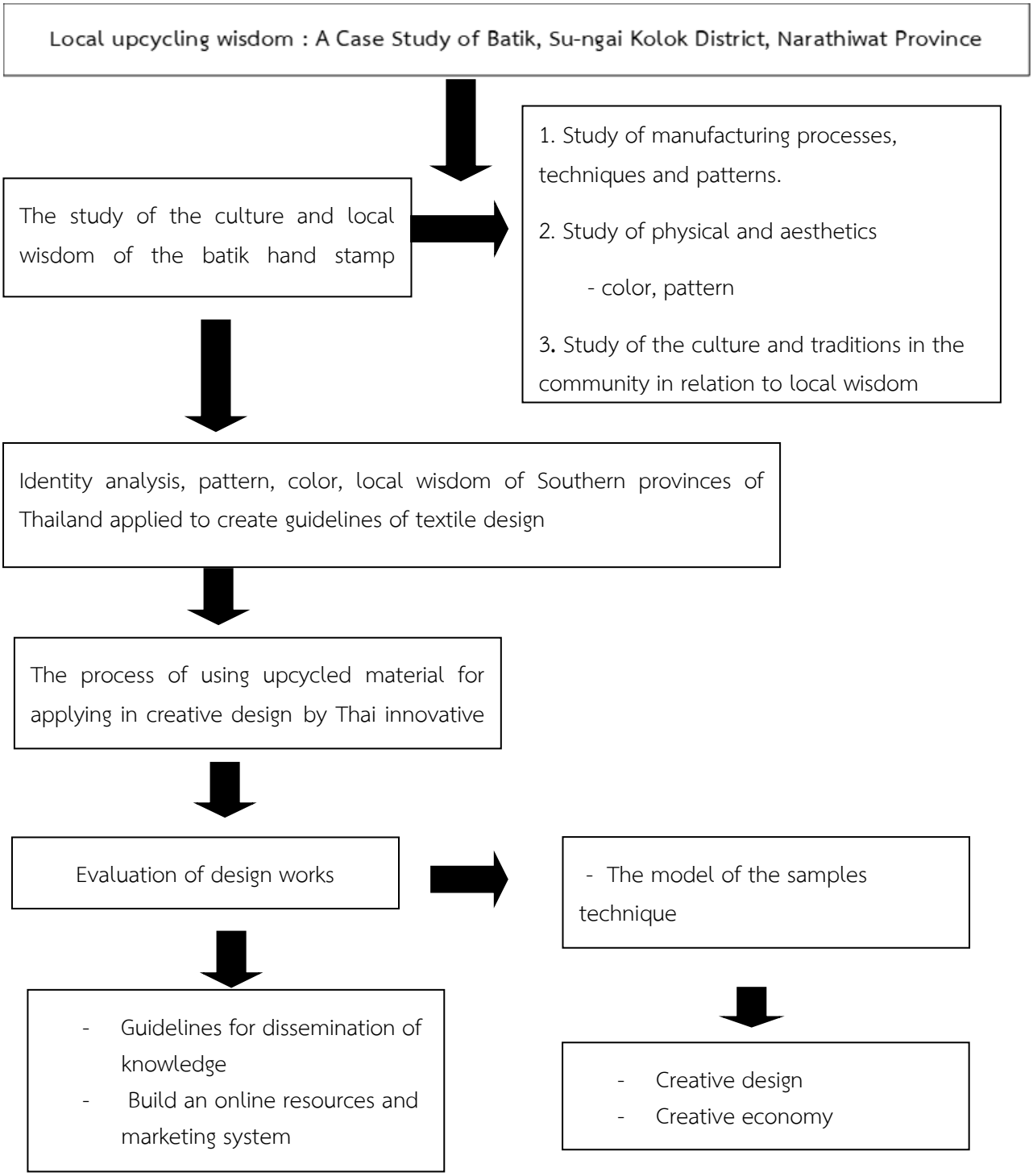


Figure 1: Process of Design Thinking supplemented with the Double-Diamond modelSource: Plattner/Meinel/Weinberg (2009), Lindberg et al. (2010) and Design CouncilUK (2005)

This research framework uses the main conceptual frameworks as follows :

1) Conceptual framework of the manufacturing process, technique, and pattern
2) Conceptual framework of physical and aesthetics
3) Conceptual framework of crafting analysis
4) Conceptual framework of creative economy


Local upcycling wisdom : A Case Study of Batik, Su-ngai Kolok District, Narathiwat Province
The study of the culture and local wisdom of the batik hand stamp
1. Study of manufacturing processes, techniques and patterns.
2. Study of physical and aesthetics
- color, pattern
3. Study of the culture and traditions in the community in relation to local wisdom
Identity analysis, pattern, color, local wisdom of Southern provinces of Thailand applied to create guidelines of textile design
The process of using upcycled material for applying in creative design by Thai innovative
Evaluation of design works
- The model of the samples technique
- Guidelines for dissemination of knowledge
- Build an online resources and marketing system
- Creative design
- Creative economy

1. Research methodology

1) Record the culture and process of the local wisdom in Southern provinces of Thailand.
2) Communicate with art experts in Batik and block stamp printing in Southern provinces of Thailand to study the pattern design, colours, and production methods.
3) Study the documents about the culture of making Batik textile to study the pattern design, colours and production methods.
4) Collect data from field documents and small group discussions with experts.
5) Analyze data to establish guidelines for textile design.
6) The textile design experiments with the following steps :
   - Experiment with upcycled material block print into different fabrics
   - Bring patterns, techniques, production processes of Batik in Su-ngai Kolok District, Narathiwat that are analyzed
   - Bring patterns, colour of natural dye to develop into sketches.
   - Experiment with laying patterns according to the culture to suit the textile design.
7) Present the results of data analysis and research results in descriptive research with illustrations and textile designs by techniques of upcycled material block printed with natural dye.
8) A satisfaction survey of textile design works was carried out by the research methodology as follows:
   a. The sample was 100 consumers from the purposive sampling for study.
   b. The action data analysis was done using seminar and workshop program.
   c. Data Analysis

Religious, traditional, belief and cultural factors

Educating people from different areas to understand the local religions, cultures, traditions and beliefs of the local people as well as using other complex identities to categorize people are important to eradicate categorization based on singular identities. Currently, people are grouped based on religions and ethnics while complex identities may add occupation dimension and other interests to alleviate social conflicts. Therefore, understanding the local culture is essential in presenting the processes and methods of community product creation. Stories from small communities such as families, villages, sub-districts, districts, provinces, up to the national level and exchanges of ideas are the main element of the tea gathering with teacups and roti plates at the center, creating a relaxed atmosphere without stress or hurry.

Block printing fabric factors

“Batik” is a Javanese word referred to in English as Batik or Tjap stamped. The terms is used to in reference to a type of dyed fabric that combines the arts of craftsmanship and dyeing techniques together. As a result, batik means a type of dyed fabric through wax drawing or wax printing. Water cannot seep into the wax patterns and the colors will be dyed on the areas without the wax. Color may infuse in wax cracks creating unique batik patterns. Making batik motifs can be made through pattern painting with a canting or with metal blocks. The wax liquid mixture are made of wax, taper and turpentine. Especially, if you do not want too many cracks to form, add turpentine to increase the stickiness of the wax as it hardens.The

batik making process consists of two main steps namely the material preparation process and operational process. The main materials are fabric, wax liquid and tools for wax drawing or printing and dyes.

Figure2 :batik pattern stamps from used condensed milk cans

Source : Supawadee Juysukha

Fabrics with natural fiber are suitable for batik. The most popular fibers are cotton, linen, hemp, and silk which can be used but are relatively expensive and should be washed beforehand to remove some protein stains on the silk surface in order for the wax and color to adhere better. Most synthetic fabrics are not good at cold water dyeing except synthetic fibers from cellulose such as viscose and rayon that are good for color adherence.

Figure 3 : Experiment with different fabrics
Source : Supawadee Juysukha

Wax liquid for batik printing is a mixture of beeswax and paraffin, or can be mixed with turpentine and animal fat help keep the wax sticky, not hard or brittle. The melting point for wax is at 35-50 degrees Celsius can completely melt at approximately 120-140 degrees Celsius. The temperature should not be hotter than this as the wax will diffuse through the fabric, not forming into the desired pattern. The wax should also not be too cold as it will solidify, stick to the printing stamp and stick to the fabric in an uneven and unclear pattern. The wax printed fabric must be dried while cold water is used by some to quicken the hardening process and create breaks in the wax patterns as desired.

Figure 4 :Temperature testing
Source : Supawadee Juysukha

Production Process

For the fabric preparation, the fabrics for batik drawing or printing should be boiled with soda lye first to remove all dirt and coatings such as starch and optical brightener. This will help the dyes to adhere better. The boiling process involves the following chemicals: soda ash, caustic soda and artificial soap.

Batik patterns can be made through 3 methods

Wax drawing on the fabric according to the desired pattern (free hand drawing). The method may make use of brushes, pieces of wood or chanting, depending on the size of the lines and patterns. The second method is a stencil method using a thin transparent plastic sheet. This method is ideal for detailed and beautiful patterns which can be replicated in other fabrics as one sheet of stencil can be used 40-50 times. The third method is a method that has been passed down as an art and culture of Su-ngai Kolok, Narathiwat province, which is wax

stamping for consistent patterns. The stamp can be are made from copper, brass, zinc or teak, depending on the area.

Batik stamp making

This refers to use of iron, wire, zinc, brass or other metals that have the ability to retain the temperature, carved pieces of wood in some areas where wood is a local material, or ropes, nails or corks to be created into patterns for wax stamping.

Expected benefits

The interesting and important part of this research is the batik stamp making process from condensed milk cans. In Su-ngai Kolok district, Narathiwat province, the only craftsman who oversees this creation is Ya Bin Dolo. From the local identity combined with the concept of waste material upcycling, the researcher therefore saw a way to develop this into a model for other localities and pass on this way of thinking to the outside communities to acknowledge and value batik for the continuity of batik production process as a local identity.

Figure 5 : used condensed milk cans
Source : Supawadee Juysukha

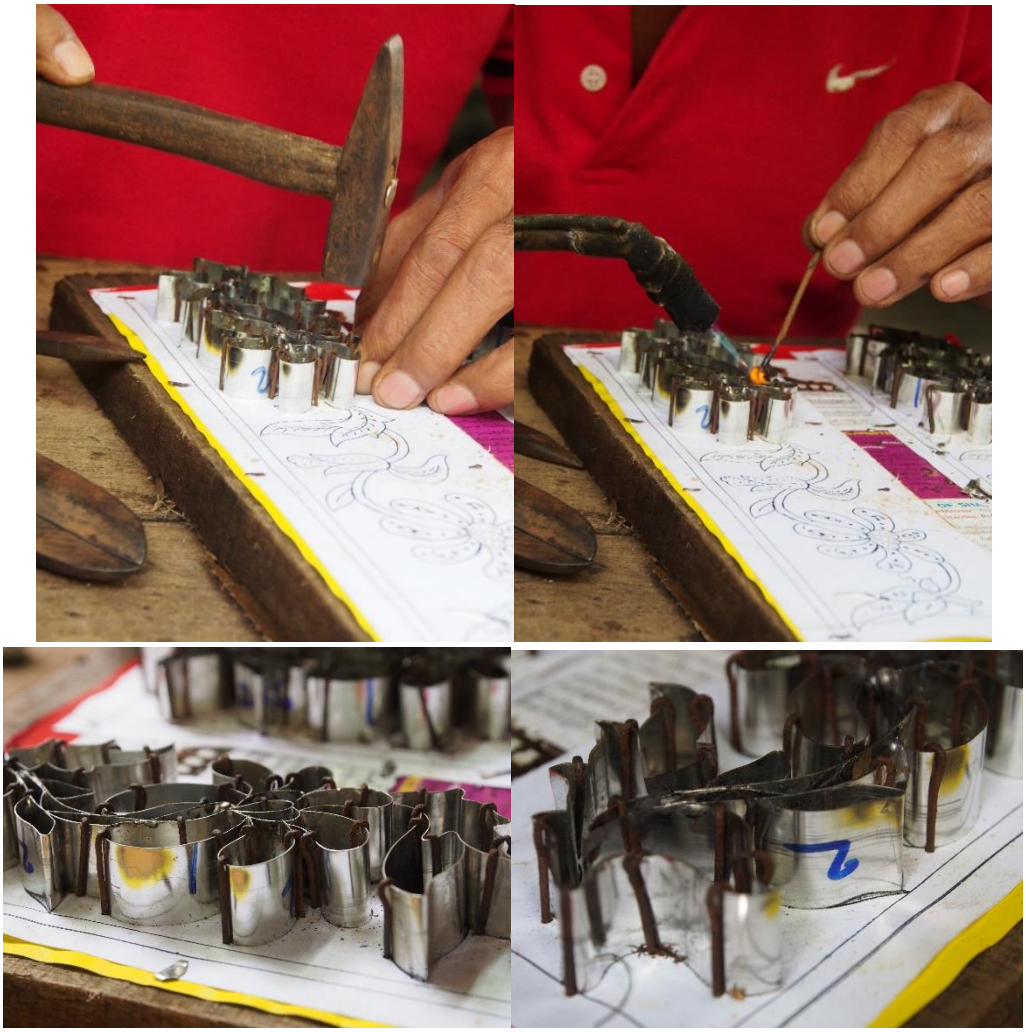


Figure 6 :Making batik block printing process
Source : Supawadee Juysukha

Figure 7 : Presenting on seminar and workshop platform
Source : Supawadee Juysukha

RESULTS

In order to develop the batik printing process, a local identity of Su-ngai Kolok district, Narathiwat province, to be developed in the context of wisdom, culture, economy, way of life and, importantly, the environment, the researcher thus proposed the natural dyeing and batik pattern creation from a can of condensed milk, a local upcycled material, with the limitation of cold water dye only for the natural dye to be used.

Figure 8 : Natural indigo dye
Source : Supawadee Juysukha

Figure 9 : Natural colour dye
Source : Supawadee Juysukha

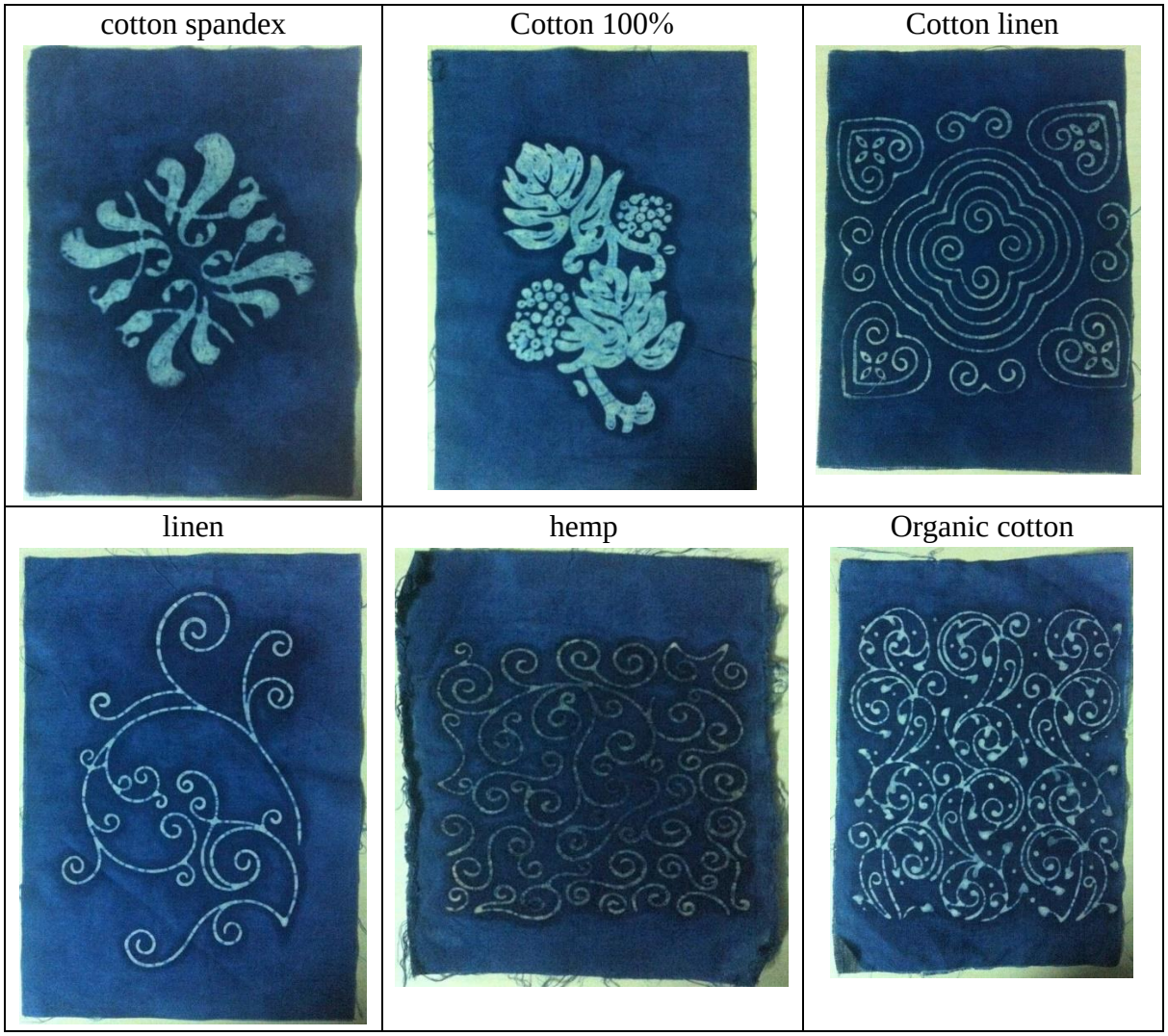


Figure 10 : Model of sample technique
Source : Supawadee Juysukha

CONCLUSION AND DISCUSSION

This research has presented the need for sustainable packaging, which is a result of the growing demands and environmental impact of packaging materials and material end-of-life. The research also presents the importance, types, and applications of packaging. Based on the findings of this study, the following drawbacks and solutions were discussed on how to ensure the sustainability of packaging materials. The researcher has taken experiment with different fabric and natural colour dye base on upcycling material block print. Drawing from this concept, the researcher has studied and analyzed to create a guideline for the development of local waste products, combined with local wisdom, culture and way of life for sustainable community products. The products are to provide various benefits from the continuation of cultural wisdoms, the local way of life and increased income for people in the community as well as the environmental benefits for sustainable developments.

The use of the advantages or strengths of the existing wisdom products to properly meet the needs of consumers, difficult to imitate, can be created high prices according to their needs. (Permat and et al., 2013)

Recommendation

1. In the next study, other fields of the arts technician should be further developed for the sustainable design processes.
2. The research findings should be joined in the international seminar and workshop.

REFERENCES

Chanoknart Mayusoh, Supawadee Juysukha, Noppadon Sangwalpetch, Taechit Cheuypoung. (2020). The Arts of Contemporary Embroidery Designs, by the study of pattern Gingerbread Studios in Vimanmek Mansion. Art Pritas Journal 8(2), p. 57-73.

Ekawit Na Thalang. Popular Local Wisdom in 4 Regions: Lifestyles and Learning Process of Thai Local Villagers. Sukhothai Thammathirat Open University, 1997.

Ekawit Na Thalang. Potential of Independent Thai Ways. Witheethas Foundation, 2002.

Ibrahim, I.D.; Hamam, Y.; Sadiku, E.R.; Ndambuki, J.M.; Kupolati, W.K.; Jamiru, T.; Eze, A.A.; Snyman, J. Need for Sustainable Packaging: An Overview. *Polymers* 2022, *14*, 4430.

Jureerat Buakaew. Researches on the Relationship between Cloth and Islamic Thais' Lifestyles in Thailand's Southern Border Provinces. The Prince of Songkla University (Pattani Campus), 2000.

Korn Worakawin. The Map of Local Knowledge of Thailand (South). The Institute of Academic Development, 2010.

Korn Worakawin. The Atlas of Thailand and Provincial Public Activities. The Institute of Academic Development, 2010.

Lertchai Sirichai. Local Wisdom: From Facts to the Paradigm of Social Strengths. Walailak University, 2004.

https://doi.org/10.3390/polym14204430

https://www.researchgate.net/publication/329310644_Handbook_of_Design_Thinking