

Exploration Of Lontar (*Borassus Flabellifer* L.) Material in East Flores Region (Case Study Of Larantuka, Tanjung Bunga, and Solor Island)

Zalfa Hanifa¹, Meirina Triharini², Prananda Luffiansyah Malasan³, Arianti Ayu Puspita⁴,
Raditya Ardianto Taepoer⁵

^{1,2,3,4,5}Fakultas Seni Rupa dan Desain, Institut Teknologi Bandung

⁶Graduate School of Engineering, Chiba University, Japan

¹zalfahanifa.zh@gmail.com, ²meirina@itb.ac.id, ³prananda.l@itb.ac.id, ⁴ariantiayup@gmail.com,

⁵radityaardianto@gmail.com

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ABSTRACT

Lontar is distributed in various areas of Indonesia, especially in East Nusa Tenggara (NTT). Over the past few years, lontar weaving in East Flores has experienced rapid development in various aspects. However, very few studies have been conducted through direct observation involving weavers and local people. In the same way, product development rarely considers the weavers' point of view as holders of the weaving tradition. This research is conducted to analyze the dynamics that emerge in the community and formulate further stages of exploration by considering relevant aspects. This research used a mixed methods approach, first conducting qualitative research based on field observations in four villages in East Flores, and simple material exploration. The results of this research are the design of a production system, a study of factors that influence the development of lontar material products and their impact on local communities, product creation collaboration, and an overview of the growth of local communities in Indonesia and how they can work together with other parties outside their region.

Keywords: lontar, local craft, weaving tradition, design collaboration, dynamics analysis

ABSTRAK

Lontar tersebar di berbagai daerah di Indonesia, terutama di Nusa Tenggara Timur (NTT). Selama beberapa tahun terakhir, anyaman lontar di Flores Timur mengalami perkembangan pesat dalam berbagai aspek. Walaupun begitu itu, kajian melalui observasi langsung dengan melibatkan penganyam dan masyarakat lokal sangat sedikit dilakukan. Begitu juga pengembangan produk dengan mempertimbangkan sudut pandang penganyam sebagai pemegang tradisi. Penelitian ini dilakukan untuk menganalisis dinamika yang muncul di masyarakat dan merumuskan tahapan eksplorasi lebih lanjut dengan mempertimbangkan aspek-aspek yang relevan. Penelitian ini menggunakan pendekatan metode campuran, pertama-tama melakukan penelitian kualitatif berdasarkan observasi lapangan di empat desa di Flores Timur, serta eksplorasi material secara sederhana. Hasil dari penelitian ini adalah rancangan sistem produksi, kajian faktor-faktor yang mempengaruhi perkembangan produk material lontar dan dampaknya bagi masyarakat lokal, kolaborasi pembuatan produk, dan gambaran pertumbuhan komunitas lokal di Indonesia dan bagaimana mereka dapat bekerja sama dengan pihak-pihak lain di luar daerahnya.

Kata Kunci: lontar, kerajinan lokal, tradisi menganyam, kolaborasi desain, analisis dinamika

INTRODUCTION

Lontar (*Borassus flabellifer* Linn.) is a member of the genus *Borassus* and the *Gymnospermae* family of single-seeded (*monocotiledoneae*) *Arecaceae* plants. Almost all parts of the lontar tree are useful. As a result, it is frequently called "the tree of 800 uses" [10]. In particular, the islands of Java, Madura, Bali, West Nusa Tenggara (NTB), and East Nusa Tenggara (NTT) are home to large populations of this species. The lontar plant is well-known for its advantages in Indonesia and other nations including India, Myanmar, and Cambodia. The habitat that supports the growth of lontar plants is dry soil, with an altitude of 0-500 meters above sea level[1]

Products made from lontar are utilized in everyday chores like cooking, farming, selling, religious activities, and traditional ceremonies. The products sold by weavers are quite diverse, such as office souvenirs, accessories, and baskets. However, in practice in the industrial market, weavers' tacit knowledge is not developed much. Weavers work on orders according to the wishes of consumers, or collaborators[2]. Tacit knowledge is described as "we can know more than we can tell" [3]. The tacit knowledge possessed by local artisans is gained through extensive experience in working with materials and processes and can mainly be obtained through practical and personal contact between artisans and outsiders. Based on this statement, the author concludes that it is important to give weavers space to explore and participate in creating and initiating products. Therefore, in this research, the process of exploration and collaborative development were carried out through discussion and prototyping stages, which were also based on learning about lontar raw materials and local culture.

This development process cannot only consider aesthetic values, but also understand how lontar is produced, which parties will contribute, and what factors affect it. This is because design also affects various stages of production and involves many fields in the industrial process. Exploring material with the community also aim to analyze the capacity of the weaving community, the potential for development with less waste material, and a study of production system.

METHOD

This research used a mixed methods approach, first conducting qualitative research based on field observations in four villages in East Flores, and simple material exploration. The decision to study in the community of East Flores was made purposively, where many women work as palm leaf crafters, either as their main job or as a side job while farming. Primary data and secondary data were the two types of data sources used in this research. The primary data is information obtained through interviews with respondents. The secondary data is information from a literature review on the use of lontar leaves in East Flores, East Flores culture, economy, geographical conditions, and other related data. Observational data was collected by observing the process of harvesting and processing lontar into products with attention to risk and production flow. Interviews were also conducted with lontar climbers, weavers, and local communities regarding tradition, social and culture, and economy. This data was then used to formulate factors influencing the industry and study the production flow alternative and product development by considering aspects that had been discussed in interviews with many related fields.

DISCUSSION

Literature Review

Lontar is a material that was used as a script in South Asia and Southeast Asia. In Indonesia, lontar scripts are found in Sunda (West Java), Java, Bali, Madura, Lombok, and South Sulawesi. Lontar, a writing medium in addition to stone and metal, has been known since the 5th to 10th centuries [4]. This plant species has a single stem, a trunk diameter of around 50 cm, and a height limit of 40 m. The trunk is rough, slightly blackish, with a thickening of the leaf sheaths at the bottom. The crown is dense and rounded; the old leaves droop but remain attached to the petioles [5]. There are six species of lontar spread around the world, two of which grow in Indonesia, namely *Borassus flabellifer* and *Borassus sundaicus* [6], [7]. The lontar population in East Nusa Tenggara is estimated at 4,000,000 trees, consisting of 950,000 young trees (<10 years) and 3,050,000 mature plants (> 10 years) [8].

The lontar plant is mentioned in the book *Agama Asli di Kepulauan Solor* by Paul Arndt. In his book, Arndt describes the use of lontar in traditional houses, places for offerings, magical objects, and containers for palm wine. In some traditions, lontar leaves also have sacred value because they are associated with offerings and spiritual healing. One of the important roles of this plant is in the construction of the *Korke* offering house, an offering house built for the highest manifestation of *Lera Wulan*, or God, who, in the belief of the Solor people, is the supreme god [9].

The weaving technique of three axis commonly used in East Flores is used by many weavers spread across Asia. In various regions of Indonesia, this weaving technique is also called *anyam gila*, or mad weave. This term is also used in woven products from India and the Philippines. Mad weave was originally discussed by L.E. Bland in the article "Basket Making at Malacca" in Virginia I Harvey's "The Techniques of Basketery". In the article, Bland wrote, "This weave is called mad weaving. This webbing is very complicated to learn and is calculated enough to drive a beginner crazy" [10]. *Anyam gila* is most frequently used on plain weave in Sulawesi. The Toraja people call the woven axes the three *rawi* [11]. Woven with a three-dimensional pattern has been widely used by the people of East Flores. This pattern is also a characteristic that is favored by weavers in the Flores area.

In East Nusa Tenggara, James J. Fox investigates the ecological differences between the people of Rote and Sawu Island and those of Sumba and Timor. In his book, Fox explained "The ejection economy is not just a livelihood but influences concentration, distribution, and provides various possibilities for the population." [12]. Research on the comparative use of lontar on the islands of Rote and Sawu with the people of Sumba and Timor has characteristics that are not much different from the lives of the people of NTT today, especially East Flores. One of them is the use of lontar in activities that are also sources of livelihood like gardening, which serves as an example of the pattern of how the local economy can move simultaneously, even have dependencies, and be theoretically centralized. [12] Lontar plays a vital role as a material that serves both primary and secondary needs, according to literature from the late 19th and early 20th centuries, in terms of its use in domestic appliances, plantations, and meeting food demands through honey and palm wine.

Field Observation

Participant observation was the method for gathering field data, meaning the researcher joined the group being researched. Researchers get knowledge through direct experience as observers and participants. The data collected covers all aspects related to the weaving community and the materials used. To create qualitative data, observation results are combined with interview results. The

observation sites were chosen in the East Flores region of East Nusa Tenggara, specifically Wulublolong Village, Lamawai Village, Sinar Hadigala Village, and Riangkemie Village, where the weaving community is located and where lontar leaf shoots are harvested.

The process of observation from the beginning of harvesting palm shoots until they become woven shreds involves many actors such as palm climbers, weavers, the surrounding community, who then also show technical problems and unrest during the industrial process so that it enhances the researcher's point of view and consideration to do the exploration and development stages. This of course includes leaf quality, color, and shape which will be discussed. Interviews are an approach to extracting narratives and analyzing the stories that exist between palm products and the people in the research area.

Raw Materials and Community

The tops of the lontar leaves are picked up by climbers and dried in the sun until they changed color. The weaver receives the dried leaves after they have been processed in accordance with the specifications for size. At the weaver's home, shredded leaves are boiled in a fire to preserve them. During the dry season, lontar leaves are dried outdoors. On Solor Island, however, it is forbidden to dry leaves outside during the rainy season; instead, the leaves must be dried inside the house.



Figure 1. East Flores Field Observation Activity

On Solor Island and other parts of East Flores, boys have been taught the tradition of climbing and cutting palm wine from generation to generation. In addition, it is more challenging for lontar leaf shoots harvested during the wet season to dry in the sun. As a result of the moisture and mold, this may cause the leaves to turn yellow. White leaves are used to weave high-quality woven products. The tops of the plucked lontar leaves should not be exposed to raindrops, as this will cause spots on the leaves. Avoid exposing the tops of the plucked lontar leaves to rainfall as this will result in spots on the leaves. Furthermore, in terms of risk, the highest risk is the safety of the climbers. Lontar leaf shoots are at the top of the tree, with a height of 30-40 meters.

In Tanjung Bunga District's Sinar Hadigala Village, weaving has long been a custom. One of the senior weavers stated that she first learnt to weave in elementary school and from his mother. The weaver currently has many students learning about weaving techniques. Weaving as a main job has only just begun after woven products have entered the national market.

Exploration

The purpose of shape exploration is to determine the skill level of the weavers when executing new designs. The woven design used is a triangular design in the shape of a container with a lid. The design of woven containers with lids is usually called *anyaman dese*. Pattern exploration in Sinar Hadigala Village is focused on conducting trials to make pattern designs inspired by patterns in other media,

such as woven fabric patterns, with also the hope that this experimental learning can later be understood by the object of research in determining the visual characteristics of each design style that experiences repetition and visual development [13].

Result and Analysis

The interview and observation data were analyzed using interpretative identification to identify factors that influencing the development of the industry and alternatives for system production. This analysis also concludes the study of motivation, the role of industry actors, and the community's interpretation of lontar.

Factors Affecting the Lontar Industry

According to the findings of the data analysis previously discussed, this industry is supported by three primary elements. They are raw materials, businesses, and communities. The following figure shows how these three components are connected to other supporting variables.

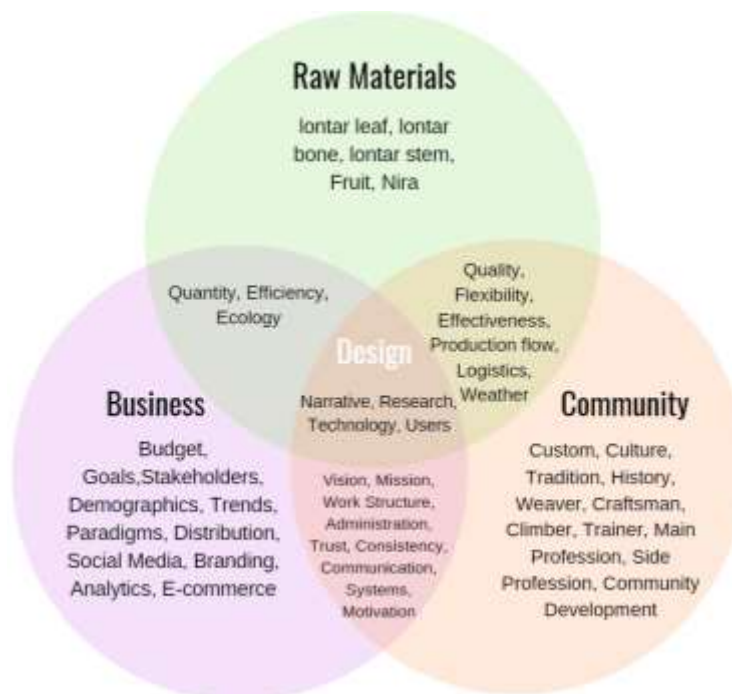


Figure 2. Diagram of Factors Affecting the Lontar Industry

The changes in the work practices of traditional craft communities to keep up with the price and production scale demands of the global market have created a dependence on external economies[14]. Business is one of the main components that grows from economic motivation and development in society. Business has a liaison role in entering modern industry through digital-based marketing targeting markets outside the East Flores area. Business also plays a role in the media by conveying narratives of culture and traditions to consumers. In Nusa Tenggara itself, some weavers work with craft companies such as PT Karya Du Anyam, Ria's Bag, and Ramahija. From PT Dua Anyam, weavers get orders from outside the NTT region or even from abroad[2]. Likewise, Ria's Bag and Ramahija act as business actors and market lontar products ordered from weavers. These three companies involve social media to build product brands, convey narratives through posts and descriptions, and create new designs based on the tastes of their respective consumers.

In addition to the leaves, the lontar plant also produces stems, fruits, sap, and leaf bones, all of which are consumed locally and sold in traditional markets as raw materials. Raw materials need specific processing because they are a source of income outside of industrial settings. As a result, when choosing lontar leaves for weaving, quality, quantity, and ecology are all considered. Communities consisting of weavers, crafters, and shoot pickers have an important role in processing plants into industrial products. In practice, the community is also the holder of customs, culture, and traditions that have long existed and are maintained by the people of East Flores.

In this activity, the point to be emphasized is how actors outside the island need to understand the importance of adjusting habits and tolerance to build trust between the two parties. In this study, the designer as well as the researcher as a designer who makes products according to industry standards does not play the role of absolute decision-maker. Through an initial study of the main factors in the lontar industry process, the researcher concluded that the designer is in a facilitator position that connects several creative industry figures who are accustomed to following global trends with the weaver community who want to present cultural and traditional narratives.

Moreover, when compared the weaving communities on Solor Island and Tanjung Bunga have major differences in motivation and production capacity. Solor weavers have high skills because they are used to receiving orders in large quantities, with disciplined time management. The orders they receive also involve many businesses with changing design requests, so weavers are required to always sharpen their skills. Tanjung Bunga weavers tend to make the same design requests with uncertain timing, so their skills are less developed and slower. Based on the author's analysis, these two aspects are closely related to the development of systems and structures. The community's understanding of specific roles in a work structure creates initiative and consistency in the industrial process. The division of specific roles also provides an overview of work patterns that are easily understood by individuals so that they can more easily carry out activities and make adjustments.

Alternative Production Flow Analysis

The community on Solor Island divides the weavers into small groups with one supervisor who monitors the work as well as a person whose role is to convey information. Likewise, the community in Tanjung Bunga has several group representatives, so they do not need many tools and media. To illustrate, in running an industry activity, group representatives are key in linking one group to another and standardizing. The availability of raw materials, efficiency in the processing to prevent the risk of demand imbalances, and flexibility in the timing of the weaving process to allow it to adapt to the circumstances of the community members involved have been revealed through data review and analysis.

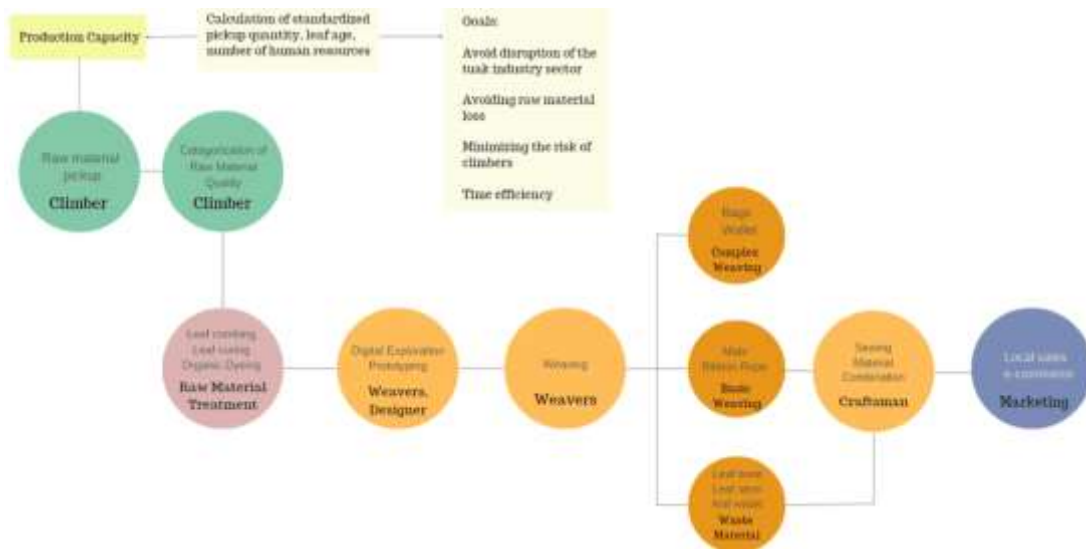


Figure 3. Diagram of Lontar Woven Production System

This system focuses on the categorizing of products into three categories—complex woven, basic woven, and waste materials—with crop yields used to gauge production levels. Weavers can create simple woven items while working in their farms. This category does not require high skills and can be completed in a short time. The basic woven that have been made will be passed on to the crafters to be processed into products with a combination of materials such as fabric and wood. Complex woven products are those that demand more advanced procedures and longer working times. High-skilled weavers who work full-time can fall into this category and the basic woven category. The products made are baskets, open-close containers, and other products with complex techniques. Residual leaves from the remaining weave categories can be reprocessed into compost, product frames, or new products that will be developed in the next research phase.

Craft Design Collaboration

Design Process

In the design process with researchers, weavers were involved in the concept discussion process, both parties talked about the narrative they wanted to convey in the product. This process proved to be effective in creating products based on local insights that were certainly not known to the collaborators. The design can also be made according to the weaver's capacity, and allows the weaver to do further exploration based on the agreed concept. Researchers also tried to apply colors and weaving patterns in digital form which were then discussed back to the weavers, so that the weavers could provide direction based on their preferences. In addition, collaboration by strengthening the discussion stages of both parties while utilizing technology to facilitate the process creates a more blended work culture and reduces the gap between the two parties by building familiarity through the same media.

The difficulty in this process lies in the communication between researchers and weavers and reaching out to weavers who live far away. Many differences in interpreting language terms often make weavers and researchers need to synchronize perceptions repeatedly and make many mistakes in making products. Weavers who live in distant places are also difficult to reach because they do not hold communication tools, so their work cannot always be monitored.



Figure 4. Product Development Process

Design Prototype

The creation of design alternatives is not only focused on designing products with commercial value, but also raising various aspects of lontar in the daily lives of the people of East Flores that can be represented in aesthetic as well as verbal and descriptive narratives. The aim is to strengthen the identity of lontar weaving as a special product of the people of East Flores. East Flores is quite famous for the production of forest honey, titi corn, and cashew nuts, which are also often used as souvenirs by travelers. Previously, local people have used palmyra weaving for titi corn and cashew nut containers, but it only serves as a tool without considering aesthetics. Therefore, the idea of the proposed design concept is to combine the two trademarks of eastern Flores in food production and lontar weaving with a design that adapts to the tastes of the modern craft market. The product to be made is a woven souvenir case that can also be showcased as a banquet case in the living room.

The design of woven lontar was tried to be combined with a material that is easily available in East Flores, which is bamboo. Unlike lontar that easily fracture, bamboo has more solid material character, making it suitable to be used as a handle. In addition, bamboo is also a popular material in the craft industry, so in terms of technique and market research, it is already well developed.

The collaborative prototyping in this research is not intended to try a method that can trigger the weavers' creativity to get out of their comfort zone and solve problems with a larger scope. The results of this exploration provided important data that became the basis for determining the urgency of product development based on the local knowledge of the weavers.



Figure 5. Design Prototype

CONCLUSION

The writers conclude that the development of the lontar industry as one of the craft industries in Indonesia has tremendous potential, not only in the economic aspect but also in regional development and the preservation of traditions that are disappearing. The craft industry is also a means of introducing culture and being part of global trends. Analyzing data in the field and having discussions is an important foundation in determining the necessary steps to maximize the potential of lontar in modern industry.

Through discussions, communities and designers can channel ideas from various perspectives according to their expertise and develop products that consider innovation, sustainability, heritage, tradition, and cultural narratives. The collaborative process is also not only aimed at producing a product, but understanding how participants from different backgrounds can adapt and develop by sharing stories and experimenting with new approaches. This activity also shows how the role of weavers has great potential not only in making traditional products, but participating in developing products with new values based on local knowledge.

This is an important elaboration because the collaborative process between researchers and communities also produces quite complex dynamics in terms of communication and ways of working that certainly have a big impact on running continuous cooperation. Analysis of factors and systems in the field generate criteria and roles needed to develop this industry. Therefore, it is hoped that the data contained in this research can be used as material in continuing industrial processes that consider important aspects of the needs of local communities and customers.

Further research from this study is an evaluation of the results of system development and product making based on the transformation of local peoples' daily product forms and community capabilities in developing products independently, also a study of the relationship between palm craft in Asia, especially Southeast Asia and its development and transformations.

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