

Design and Construction of Traditional Fishing Boat in Jepara in the Context of Cultural Ecology: The Implication as Arts Learning Resources

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Abstract

The existence of a traditional fisherman community in Jepara is proven based on the system of equipment or technology of fishing vessels. As part that is familiar with the life of the fishing community, this phenomenon is very interesting as well as important to be studied more deeply in the context of the north coast Javanese sub-culture. Based on that, this study aims to explain: (1) the design of fishing boat construction as a representation of the technology system of traditional fishing communities in Jepara, (2) the ecological aspect of the north coast Javanese sub-culture includes the process of creating traditional fishing boat in Jepara communities, and (3) wisdom potential in traditional ship design as learning resources. This study uses a qualitative approach with case study design. The data is collected through interviews, observations and document reviews, and analyzed by using flow mode. The results of the study will provide an empirical explanation of the construction design and boat creation technology in the ecological perspective of the north coast Javanese sub-culture. Traditional ship design in Jepara is potential as learning resources to create the value of cooperation, openness, communication and religious.

Keywords

art; boat; cultural ecology; design; traditional fishermen

INTRODUCTION

The design of construction and technology for the creation of fishing vessels is a cultural heritage that presents the prowess of Indonesian ancestors (people say that Indonesian ancestors were seamen). The greatness of the maritime fleet even became the unification of the Archipelago by Majapahit. Since the 9th century AD, the Indonesian people have sailed far away by boat. They went to the north across the sea, they went to the west across the Indian ocean up to Madagascar, and they went to the east to Easter Island (Naila, 2014:2). The history records that

the marine life of the Indonesian people has been around for a long time (Naila, 2014:2). It is evidenced by the findings of prehistoric and historic sites.

The seafront city shows the phenomenon of urban culture and maritime culture that is full of symbols and traditions in its culture. The harmonious of maritime culture and urban culture offers a different perspective. According to Konvitz, maritime cities are defined as "Urban maritime culture-

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re" (Masimo, 2014). Jepara as the north coast of Java (*Pantura*) is one of the maritime representation of Indonesia. Jepara is located in the political territory of the Central Java province, precisely it is located in the north coast of Central Java. In the cultural context, Jepara and its surroundings are included in the central north subcultural with Kendal, Semarang, Kudus, Demak, Pati, and Rembang.

The maritime greatness of Jepara was well known in the Islamic era, namely Jepara became a very famous port and trade city (Kartodirdjo, 1977). The Jepara's maritime glory can still be felt to this day in the form of the existence of a fishermen community group which is passed down from generation to generation in the fishermen families. The existence of a traditional fishermen community in Jepara cannot be separated from the equipment or technology system of fishing vessels. The ship that is studied in this study is a traditional ship or in Javanese referred to a boat. It can be categorized into ship with engines and ship without engines (Djafar, 2009). In addition to boats, traditional ship in Indonesia in the context of ethnological have many names in each area, namely in Cilacap, it is called *jukung*, in East Java, it is called *ketinting*, and in Madura, it is called *butek*. In around the world, the design and construction for traditional wooden boats have developed over the centuries. The design was designed by considering local fishing method, the distance to fishing area, and the availability of building materials. In addition, there are also modern technology equipment that is also influenced by foreign designs (Savin, 20013).

In the archipelago area, there is a strong tradition of building traditional wooden boats. It is related to two things, namely the elements of nature and culture that are believed and followed by the fishermen community. It is known as cultural ecology. Traditional wooden boats are usually made to locally acceptable standards that have evolved in the context of activities carried out by coastal community. These standards and designs also tend to be very compatible

with local affordability (Savin, 2013; Gulbrandsen, 2004).

The construction design and technology for the creation of fishing vessels in Jepara show a variety of uniqueness, so that it is interesting and important to be studied deeply. Fishing vessels that function as fishing have been used in Jepara in a long time to carry out fishing activities at sea. The fishing vessel equipment is one of the important aspects in fishing activity because it is one of the technical units that determine the success of fishing.

The life activities of fishermen related to traditional shipping of construction design and technology for the creation of fishing vessels in Jepara can be concluded as a part that familiar with fishermen community. If it is referred to the cultural component, everything that is related to the equipment of the fishing community is included in the cultural field, especially in the living equipment and technology system (see Kontjaraningrat, 2002). Based on this statement, the object of this study was examined interdisciplinarily by using cultural theory, especially cultural ecology to position it in the central north Javanese coastal subculture. In the explanation of cultural ecology, technology aspect and characteristics of the physical natural environment are connected with technologi system. Therefore, this phenomenon is very interesting and important to be studied in deeply. In particular, this paper questions the creation of fishing vessels as a representation of living equipment and technology systems in the context of Jepara coastal culture.

This study is related to the study of traditional shipping equipment and technology system in the context of the north coast Javanese subculture. Theoretically, this study is also explained in the context of the ecology of coastal areas as a former of coastal culture in Jepara, Indonesia.

METHOD

A qualitative approach was used in this study by focusing on the field research method. According to the principles of qualitative re-

search, researchers have a role as key instruments. Researchers will research directly, adjust to the time and place to obtain the data holistically (see Hohidi, 2012; Marshall & Rossman, 2006).

The design used is a case study to find out the uniqueness deeply about construction design and traditional shiping technology in Jepara. The researcher will explore the lives of traditional fishing vessels builder and several key informants from several traditional fishermen.

The main subject of this study is traditional boat builder in Jepara. Purposively, the research subjects were focused on five traditional fishermen who utilize boat building service. The research data were collected through (1) observation, (2) interviews, and (2) document studies. *First*, researchers use the “controlled observation” method. The observations were made in the Jepara coastal especially in: (1) boat builders’ villages and (2) traditional fishermen villages namely Panggung Village, Kedungmalang Village, and Surodadi Village Kedung Subdistrict Jepara Regency are two Fishermen villages in Jepara Regency that its community rely on their lives from the sea.

Researchers use visual recording with digital camera as recording tool to complete notes. *Second*, unstructured interviews are used to interview key informants, namely boat builder and traditional fishermen. *Third*, document studies are carried out on the works of traditional boats made by boat builder.

The validity of the research data is maintained by triangulation techniques. Triangulation technique used in this study is source triangulation. This study uses a flow model analysis from Miles and Huberman consisting of: (1) data reduction, (2) data presentation, and (3) verification.

RESULTS AND DISCUSSION

Design and Construction of Traditional Fishing Boat in Jepara

Boats in Indonesia were built by traditional shipyards that its construction is not equip-

ped with plans and general requirements. Fishermenboat in Jepara do not have special education even formal education in vocational high schools or in Institute in the naval architecture major. The ability of boat builder is inherited in the family and in the community.

One of the boat builder in the Deman Urban Village, Pesajen Hamlet, Jepara District, Supomo (48) claimed that he has made the construction of fishing boats since three years ago (2014). In the first time, he was a furniture carving craftsman in Jepara. Then, he learns about ships (helping others), so he can make or produce ships independently.

In the process of building a fishing boat, the boat builder usually has two assistants in facilitating his work. There are division of tasks, namely, the first person helps in installing blocks and layers of wooden boards to form the main body of the boat. Whereas, the second person has a task to smoke the wood to form a wooden curvature as a boat’s body.

The fishing boat construction design in Jepara has three main construction sections which function as a basic construction and fastening, namely (1) keel, (2) bow, and (3) stern. They are the main construction components as a source of strength in the boat. Keel is the most basic part of a boat construction. Keel as a foundation for laying bow, stern, and wooden boat. The bow is the boat hull in the front part of the boat which is placed vertically with a slope of 200°. While, the stern is the boat hull in the back part of the boat with a slope of 150°.

Traditional boat building uses teak as the main material. Teak wood is a typical wood on the island of Java which has very good strength and water resistance. This wood is also widely used in the furniture industries in Jepara, Indonesia. Whereas saw, ruler, carving tool, grinder, planer machine, glue, putty, hammer, and iron nail.

The construction of wooden fishing boat does not use design drawings namely the midship section and construction profile as one of the technical requirements that must be required. The draft or design

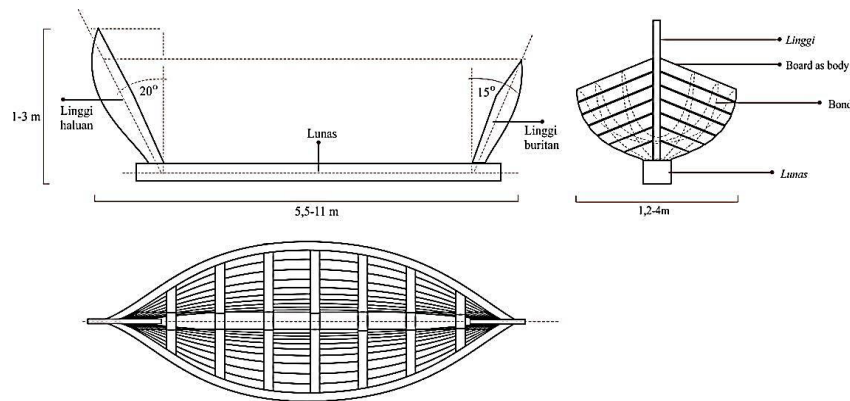


Figure 1. Front, Top, and Left View of boat hull

of the boat is only imagined in the minds of the boat builder and it is communicated verbally to the boat maker's assistants in the form of instructions in the boat building process. The boat that is widely used by the fishing community in Jepara is a type of Sopek boat made from teak wood. Sopek Boat has two types of size, namely a small boat with a length of 5.5 m and a width of 1.2-2 m and a large boat with a length of 11 m and a width of 4 m. The drive system already uses a motor engine. Figure 1 is an example of a construction design offishing boat in Demaan Urban Village, Pesajen Hamlet, Jepara District, Jepara Regency.

Based on observations at the Wisoriver, Ujung Batu Village, Jepara and the Kanal Estuary, Demaan/Pakisaji Village, all Jepara boats have various colors. All parts of the fishing boat, especially the outside part of the boat, namely hull, bow and stern, seats, *omahan* or shade have been painted with bright colors. The most wide boat and arranged or constructed from the arrangement of boards on ivory boat hull is the most dominant color of the boat.

Ecological Aspects in the Design of Fishing Boat in Jepara

Traditional boat or ship is one of the means of transportation and supporting livelihoods on the river and sea. The boat was made based on knowledge gained from generation to generation. The development of the knowledge is based on experience and instinct in adapting to the environment.

Thus, the traditional boat or ship from

an area is one of the means product developed based on the ability to adapt to the natural environment in the area where the owner or the boat builder lives in the cultural context. The adaptation process is fulfilled by the customs of the community. In accordance with many communities who live in coastal areas or many diverse customs in Indonesia, it will determine the diversity of traditional boat shapes both in terms of variation in size and style of cultural arts. Most of the traditional vessels operating in Indonesia are used for fishermen or fishing boat-type vessels. It is related to the livelihood of the majority of the population who live in coastal areas which generally work as fishermen.

There are different shapes and sizes between wooden boats that operate near to the coastal area and in the sea. However, some boats have the same shape in the hull section, which has U-shape. Traditional fishing boat is made follows the fishing operation plan which is determined by the type and size of the fishing gear.

The development of fishery equipment follows the needs based on the development of conditions, for example the adjustment of fishing gear based on the condition of the water layer, namely fishing gear for parts on the surface layer, at the bottom or between the two sides, then the basic conditions that are sandy, muddy, or rocky. Meanwhile, based on the distance of the cruise, a boat or traditional boat can be made for fishing operations near the beach or in the sea. Boat or fishing boat as a means of fishing gear was

built to accommodate the needs of fishing operations as described above.

The uniqueness of coastal cultural ecology is related to ship design (Masimo, 2014). fishing boats in Jepara have a unique ship which is decorated or ornamented on the bow, stern, and boat hull. Between the various parts of the boat, only the bow, stern, and boat hull of the front and back are painted with ornaments. The bow and stern of the front or back and the boat hull in the structure of the boat is the most important thing to be decorated and given ornaments in order to beautify the boat. Ornament given has a function to make the appearance of the boat becomes more beautiful. The ornaments added to the boat are not related to the construction, so the presentations are in the form of two dimensional decorative paintings or drawings. The drawings in the form carving motifs that has Jepara typical. The Figure 2 is an example of a fishing boat ornament in Jepara.



Figure 2. Typical Ornaments on a Traditional Fishing Boat in Jepara

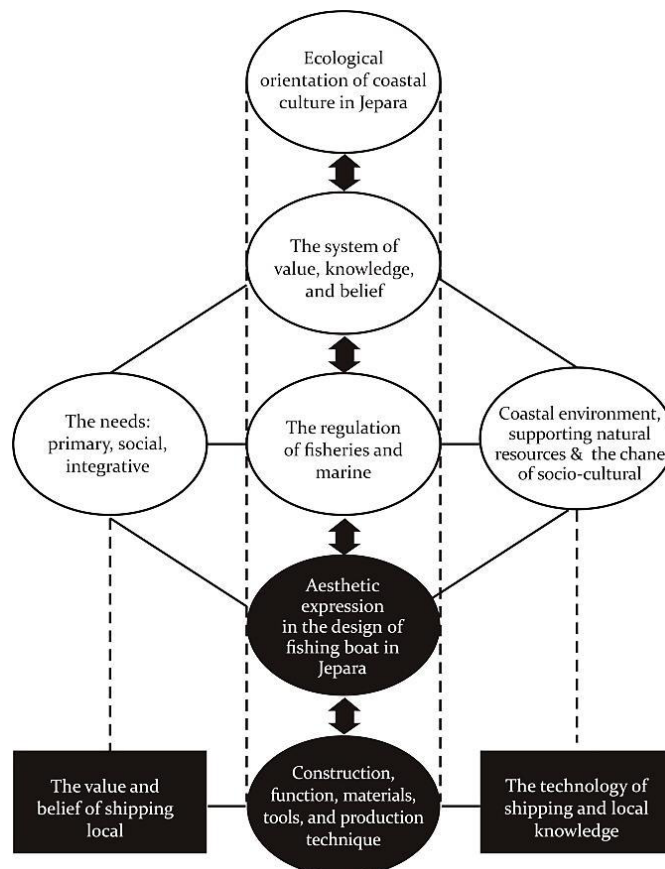


Figure 3. Chart of Cultural Ecology Systems in Design and Construction of Traditional Boat in Jepara

Traditional boat from Jepara is one of the product facilities developed based on the ability to adapt to the natural environment in the area where the owner or the boat builder lives in a cultural context. The adaptation process is fulfilled by the customs of the community. Fishing boats in Jepara use the main material of teak and bangkirai. Teak wood is very famous in Jepara as a basic material for making furniture. Systematically, a review of cultural ecology is presented in the following Figure 3.

In terms of process, the characteristics of cultural ecology in the construction design of fishing boat are:

1. The cooperation between boat builder with others as boatbuilders (the togetherness principle of coastal people)
2. The boat building workshop is opened and can be seen by many people (the openness principle of coastal people)
3. The communication between the main boat builder with boat builder's assistants use straightforward language (the communication principle of coastal people)
4. There is a break (at 12-13 o'clock). It shows the principle of observance in worship
5. The existence of boat ornaments (the art expression of coastal people)

Wisdom Potential in Traditional Ship Design as Learning Resources

The wisdom contained in the ship design and construction can be a momentum for learning resources of community-based fine arts education. The wisdom contained in the design and construction of fishing boats in Jepara has grown and developed in the Jepara region which is spread and passed down from generation to generation. The scope of local wisdom in traditional boat design of Jepara community comes from cultural ecological values, while educational value that can be used is character education with traditional arts and design as the media. The design of traditional boat in Jepara is not only aesthetic, but also represents aesthetic behavior and behavior patterns as

a characteristic of fishing communities in Jepara. Thus, it can be emphasized that the learning resources can be categorized in the criteria of community and cultural resources.

The tradition of traditional ship building reflects a cultural aspect, both of direct and indirect, as well as fundamental life values. Culture has three main forms, namely culture as a system of ideas, behavior, and products (Koentjaraningrat, 2002). Most of the process of the design and construction of building ship, an idea displays aesthetic tastes that represents the local community, aesthetic behaviors, and art work products. Therefore, it is needed a good planning, implementation, and evaluation in the process of accommodation as arts learning resources.

Some of design and construction phenomena of traditional boat in Jepara that are relevant and potential as learning resources are as follows. *First*, the value of cooperation. The Interaction among people who build traditional boats show fundamental cooperation in traditional culture and art activities. *Second*, the value of openness. Traditional boat builder and the community work openly, namely determining the price, quality of the material, and the process of making art seen by many people. Art criticisms also occur in the process of building traditional boats. *Third*, the value of communication. Social communication occurs between boats builders and the community. This communication shows the kinship of the people. *Fourth*, the value of religious. Aesthetic processes in boat building as a form of traditional culture that can not be separated from belief in God's power.

CONCLUSION

The construction design and technology of ship building in the ecological perspective of the north coast of Java subculture. The construction design of fishing boat is a representation of the technology system of the traditional fishing community in Jepara. The type of boat made is *skopek* with the main material is teak wood from Java. The

construction of fishing boats does not use design drawings. The draft or design of the boat is only imagined in the minds of the boat builder and verbally communicated to the boat builder's assistants in the form of instructions in the process of building fishing boats. The ecological aspects of the north coastal Javanese subculture determine the process of building a traditional fishing boat in Jepara. Culturally, the construction design and technology for boat building in the ecological perspective of the Javanese subculture on the north coast. The design is complemented by ornamental paintings that symbolize local wisdom, namely carving motifs typically from Jepara. The boat is built in cooperation consisting of a main boat builder and two/ three assistants. Some of design and construction phenomena of traditional boat in Jepara that are relevant and potential as learning resources are as follows: the value of cooperation, the value of openness, the value of communication and the value of religious.

REFERENCES

- Anwar, K. 2012. "Analisis Produksi Kapal Perikanan Berbahan Dasar Kayu dan Fiberglass". *Laporan Penelitian*, Institut Pertanian Bogor. <http://repository.ipb.ac.id/>.
- Djafar, H. 2009. "Kapal dalam Naskah dan Prasasti Abad XII-XIV: Mencari Bentuk Kapal Majapahit (Sebuah Survei Bibliografis)". *Makalah disampaikan pada Lokakarya Mencari Bentuk Kapal Majapahit*, Direktorat Jenderal Sejarah dan Purbakala, Jakarta.
- Geertz, C. 1992. *Tafsir Kebudayaan*. KANISIUS. Yogyakarta.
- Gulbrandsen, O. 2004. Fishing Boat Design: 2 V-bottom Boats of Planked and Plywood Construction. FAO Fisheries Technical Paper. No. 134 Rev 2, Rome, FAO, 2004.
- Irianto, A.M. 2011. *Epistemologi Kebudayaan*. Lengkong Cilik Press. Semarang.
- Kartodirdjo, S (ed). 1977. *Sejarah Nasional Indonesia Jilid II*. PN Balai Pustaka. Jakarta.
- Koentjaraningrat. 2002. *Pengantar Ilmu Antropologi*. PT. Rineka Cipta. Jakarta
- Marshall, C. & G. B. Rossman. 2006. *Designing Qualitative Research*. Sage Publication, Inc. Thousand, Oaks California.
- Masimo, C. 2014. City and the sea: maritime identity for urban sustainable regeneration. *TRIA : Territorio della Ricerca su Insediamenti e Ambiente*. 0(11): 19-34.
- Naila, F.C. 2014. "Wawasan Sosial Budaya Bahari, Sejarah Maritim di Indonesia dan Kemiskinan Nelayan". *Laporan Penelitian*, Universitas Hasanuddin Makassar. <https://www.scribd.com/doc/144406459>.
- Prayitno, M.M.E. 2012. "Analisa Teknis Optimalisasi Sistem Propulsi Kapal Ikan Menggunakan CVT Gearbox". *Jurnal KAPAL*. 9(3).
- Rohidi, T.R. 2012. *Metodologi Penelitian Seni*. Cipta Prima Nusantara. Semarang.
- Savins, M. 2013. A step-by-step guide to building a traditional double-ended timber fishing craft of Khmer (Cambodian) design. FAO Regional Office for Asia and the Pacific, Bangkok, Thailand, RAP Publication 2013/07, 56p.
- Supriyono, A. 2013. TINJAUAN HISTORIS JEPARA SEBAGAI KERAJAAN MARITIM DAN KOTA PELABUHAN. *Paramita: Historical Studies Journal*. 23. 10.15294/paramita.v23i1.2494.
- Toer. P.A. 2002. *Arus Balik: Sebuah Epos Pasca Kejayaan Nusantara di Awal Abad 16*. Hasta Mitra. Jakarta.
- Yuliati. 2013. "Kejayaan Indonesia Sebagai Negara Maritim". *Proceeding The 5th International Conference on Indonesian Studies, Ethnicity and Globalization*. Yogyakarta, 13 - 14 Juni 2013, ISSN 2087-0019.
- Yunandar. 2004. "Budaya Bahari dan Tradisi Nelayan di Indonesia". *Jurnal Sabda*. 11(2): 22-35.