



# Songkram River Basin: Floating Vernacular Architecture

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**Abstract.** Songkram river basin is located in the Upper North Eastern of Thailand (so called Isan). As a part of the 4 factors, one of the vernacular architecture of Songkram river basin, “Pae Sadung Yak”, the unique local fishery raft that strongly shown the sense of simplicity and wisdom. This research extract new design concept of vernacular architecture which will transform this bamboo fishing raft into the new application as a floating resort. The results of this research are not only preserving the intangible heritage local wisdom of this particular “Rock Salt”, but also the creation of circular economy which could elevate the wealthier status of the people in the area and attract people from different cultures such as the outsider or tourists and lead them to experience the new “Isan lifestyle” which handcrafted design for sustainable tourism.

**Keywords:** Circular economy · Four factors · Songkram river basin rock salt · Sustainable · Tourism · Vernacular architecture

## 1 Introduction

Apart of an abundance landscape along its length of 420 km, there are two essential elements that lead to the earliest settlement in the area of Songkram river basin, which are “salt” and “fish”. According to the archaeology findings and also from the local people, there has been a very long history of Rock salt trading between “Bo Huahead” (Rhino head), the ancient rock salt well in Songkram river basin with other communities in Mekong region such as people in Laos and Cambodia. Rock salt and fermented fish which are the common food culture in South East Asia were produced locally and being traded with other goods for more than 400 years. The intangible heritage local wisdom of finding and producing this rock salt has been continually passed on from generation to generations. However, this knowledge is fading away due to the economic of the salt boiler people or “Khon Tom Klear” who currently surrounded with problems. The selling price of this salt is incredibly cheap when compared with its both history and quality. While the living expenses are increased, which is the reason why there will be no newer generation to heir this knowledge in the near future.

Due to the aims of this research is not only about finding the way to preserved this intangible heritage local wisdom, but also to elevate the wealthier status of the people in the area with circular economy. Thus after primary and secondary research, the

“Isan Salt Route” project has been introduced to the Ministry of Culture, Ministry of Foreign Affairs, and especially, Tourism Authority of Thailand. With the aim of growing awareness of losing this valuable knowledge to the related stakeholders. The concept of this project is to research through the rock salt and its surrounding contexts that related to the 4 factors, which are, gastronomy, fashion, cultural landscape, and arts. Then divided into 3 phases which are growing awareness phase, developing products and services phase and a knowledge explosion phase.

Thus, the objective of this article is a part of the 2 phase, “Pae Sadung Yak” the floating vernacular architecture of Songkram river basin which is the unique local fishery raft that represent the sense of simplicity and wisdom that reflected the relationship between people and their cultural landscape. Even though, its shape and form is definitely attracted to the people who see it, but however, it is need to be redesigned in order to serve the new function as a floating resort for the visitors (Fig. 1).



**Fig. 1.** Picture of the Songkram river basin: The floating vernacular architecture.

## 2 Literature Review

As mentioned, there are many literatures that related to Songkram river basin. Mostly are in the areas of archeology, sociology, geology and fresh water fishery. However, what could be concluded in the area of Songkram river basin is comprised of a number of different wetlands that derived from in-basin and the Mekong river that forming one extensive lowland floodplain system. The wetlands are unique in many ways, not only because of the dramatic Mekong-influenced floods which turn the floodplain into one massive shallow lake system each rainy season, but also because of the high value of livelihood services and ecological functions, the wetlands offer local communities that harvest the biodiversity resources for income and substance needs [1].

Moreover, in terms of Vernacular architecture, “Toop” which is a temporary building that used for boiling saline water and producing salt is usually mentioned in

terms of its wisdom. Due to the location of Bo Huahead which is located in the floodplain and the water level is really high, so every year the salt producer have to fixed their toop before starting the new season of salt production. However, in regards with the floating vernacular architecture, the fishery raft that used to do fresh water fishery throughout a year for household consumption, seems to be common and not being mentioned.

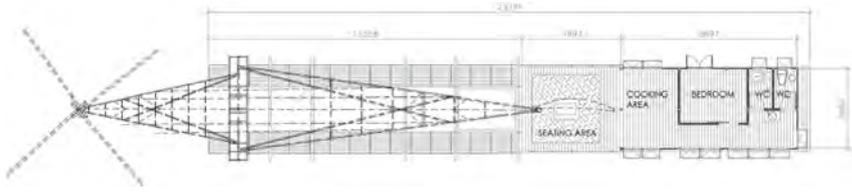
### **3 Design Methodology**

The research methodology of “Pae Sadung Yak” the floating vernacular architecture of Songkram river basin is framed to investigate throughout all of the related issues such as architectural form, functions, materials, construction technique and its surrounding context. Then all collected data will be analysed together with the participation of local people in order to summarised and used as a design program. The new design will be combined with the new application of usage that conform to the activities of the visitors which will be taking place on this floating vernacular architecture in order to provide the empirical experience of both, the new Isan lifestyle and the way of life in Songkram river basin.

### **4 The New Design of “Pae Sadung Yak” of Songkram River Basin**

The fundamental of vernacular architecture is to improve the limitation and the relationship between people and their context. Same as “Pae Sadung Yak” that originally design to respond to the way of living in Songkram river basin where the water level is totally different between dry season and wet season. In addition, there is a the mass number of the upstream fish migration from Mekong river in every flooding season [2], which is a reason why the local people create a square lift net on a bamboo raft and a small utilities space on the other side. With this local wisdom, the raft can go anywhere in any season.

Thus, to redesign the new floating architecture, researcher started with the new floor plan because some facilities such as bedroom, living area, kitchen, shower room, and toilet are need to be added on. In terms of the architectural form and materials, bamboo, a local material is being used in different area such as round raft, plaited bamboo partitioned, and the lift net structure as well. Moreover, the researcher has also selected the hand craft local products such as reed mat and traditional textiles to decorate in some area. In terms of activities, the outdoor terrace is placed in the centre of the raft in order to provide the utilities space that can support the multipurpose of usage (Figs. 2, 3 and 4).



**Fig. 2.** Picture of the new floor plan of the floating vernacular architecture.



**Fig. 3.** Picture of the new floating resort: the view from Songkram river.



**Fig. 4.** Picture of the new perspective of circular economy: Experiencing Isan lifestyle.

## 5 Conclusion

The vernacular architecture is the architecture of truth because it is created in order to serve its owner way of life. All related issues are the reasoned of its shape, form, space, function, and proportion. Thus, in order to regenerate the new use of some particular architecture, architect or designers should take all related contexts that surrounded the architecture itself into consideration. In addition, the participatory of the local people always important because they have been living their life with their vernacular architecture for longtime, which is mean that they can provide some useful information for the design object accordingly.

**Acknowledgments.** The author acknowledged the 2020 Research and innovative creation funding, Faculty of Decorative Arts, Silpakorn University, Thailand.

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