

Khlong: Bangkok canals revitalization^{*}

การฟื้นฟูคลองในกรุงเทพมหานคร

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Abstract

This study aims to argue that *khlong* (canals in English) in Bangkok, which mostly being neglected, can be brought back to life as valuable part of the city. The method of study includes finding how *khlong* became neglected. Then the study proposes guideline for *khlong* revitalization in Bangkok. The study has found that Bangkok *khlong* still have wide potential uses. Then the study proposes 7 traits for *khlong* revitalization in Bangkok and follows with general guidelines.

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บทคัดย่อ

การศึกษานี้เป้าหมายที่จะเสนอว่าคลองในกรุงเทพซึ่งแม้จะถูกปล่อยทิ้งให้ออยู่ในสภาพเสื่อมโทรมนั้น ยังสามารถนำกลับมาฟื้นฟูให้มีชีวิต และมีความสำคัญต่อเมืองได้ วิธีการวิจัยเริ่มจากการหาปัจจัยที่ทำให้คลองลดบทบาทลงจนถูกทอดทิ้ง หลังจากนั้นงานศึกษาจะแนะนำทางการฟื้นฟูคลองในกรุงเทพ จาก การศึกษาพบว่า แม้แต่ในขณะที่ลดบทบาทความสำคัญลงแล้วและถูกทอดทิ้งคลองก็ยังคงความสำคัญต่อเมืองอยู่ การศึกษานี้ทำให้เห็นว่าคลองเหลืออยู่ในปัจจุบันนี้ยังมีศักยภาพในการใช้งานอย่างกว้างขวาง การศึกษานำเสนอถักชลประพันธ์ 7 ประการสำหรับการฟื้นฟูคลองในกรุงเทพในช่วงท้าย ตามด้วยแนวทางกว้างๆในการฟื้นฟูคลอง

Introduction

Khlong have changed many times throughout the history of Bangkok. As the focus of the city changed, together with the change of roles and values of *khlong*. *Khlong* are part of the origin of Bangkok and they have witnessed and took part in many of the city's events as well as the ways of life of the people. They relate deeply to the community and play a great role to the city form and functions. The relation of *khlong* and the city has shown in many literatures, stories, arts, etc. There are also witnessed in the eyes of Bangkok's visitors and have been recognized through the appellation "Venice of the East" just did its ancestor, Ayutthaya. Many travel books and tourism websites include a *khlong* visit as a part of the Bangkok attraction list. But the current condition of *khlong* in Bangkok presents a different picture. Many *khlong* have been neglected and are in bad condition. The role of *khlong* is not obviously demonstrated clearly. Problems and issues such as floods, pollution, and encroachment, arise more and more.

There are currently 1,161 *khlong* in Bangkok (Department of Drainage and Sewerage, 2010). The number includes both man-made and natural *khlong*. They can be considered as ancient monuments as they have been part of the city for many years as there was no new *khlong* from the reign of King Rama VI onwards (Piyanat Boonnak, 1982). The use of *khlong* is limited to mostly for drainage and sewerage disposal. Only few *khlong* such as Khlong Saen Saab and Khlong Pasi Chareon are being use for transportation. Some *khlong* are being use for tourism and recreation. But the potential of *khlong* in Bangkok is more than just mentioned earlier. There are some high significant *khlong*. There are cultural assets, economic potential, and environmental values to *khlong* in Bangkok.

What are the reasons that made *khlong* which were once a vital part of Bangkok became neglected? And, what *khlong* revitalization should be?

Materials and Methods

The study is a qualitative research. The study started with a survey of available waterway revitalization from various resources.

The data collection includes literature sources, individual interviews, observations, and participant observations. The research design is flexible advising to evidence process of research and investigation. Individual interviews were arranged with the key persons related to the research. These include personnel from the Department of Drainage and Sewerage, the BMA, personnel from the Bangkok Tourism Division, BMA, luminaries in the wisdom of water management in the delta area of the Gulf of Thailand, and key persons from communities along the selected *khlong*. Observation includes site surveys of physical conditions and uses among various *khlong* in Bangkok in both by land and by water. It also included observations of activities at *talad nam* and *talad rim nam*. Participant observations included hands on experience activities of *khlong* such as the transportation experience from Saen Saeb ferry and Pasi Chareon ferry, tourism including cultural and eco-tourism, festivals, such as *loy krathong* and *Tak Batr Phra Roi*, and on forms of recreation.

The information and data used then be arranged, analyzed, and synthesized. The issues of *khlong* were listed and analyzed. Together, this process was designed to meet research objectives.

Results

Results are presented in four parts; causes of neglected, related issues to *khlong*, why revive *khlong* in Bangkok, and guideline for Bangkok *khlong* revitalization.

1. Causes of Neglected

The structures built from urbanization are extremely responsible for the current condition of *khlong* in Bangkok. As Bangkok became important port city after the excavation of Khlong Lat Bangkok, it attracted more people and became more urban. The majority houses in Bangkok discharge water directly to *khlong*. Therefore, the water in most *khlong* is polluted. Biochemical Oxygen Demand (BOD) in the inner Bangkok where there are dense populations is very high.

Also, urbanize without local wisdom. Each area is different. It should have a deep understanding of the geological aspect of the area as well as the cultural aspect of the people including believes and way of life to manage *khlong* well. Globalization takes away a uniqueness of places and leave communities blank out with no roots and attachment.

Bangkok shifted from water-based city to land-based city. This started from the influence of the westerners after the Bowring treaty. There were more big trading ships in the river, therefore not convenience for people to live in rafted. As well as more roads and bridges are made. At the beginning, the development of *khlong* and road are both being focused. But later, during the reign of King Rama VI, no more *khlong* was excavated. The solution for shallow and dirty *khlong* is to fill it. People would like to have roads more than a dirty *khlong*. The land price will also be raised up. This is the beginning of *khlong* reclining (Piyanat Boonnak, 1982).

As the process of shifting continues less there are lesser concerns on *khlong*. The filling of *khlong* has change the nature of *khlong* to the city. *Khlong* used to be everywhere and is linked like a network. Also, some bridges are made so low which are inconvenienced for boats to pass during the water season.

Litchfield and Associates, American consultant team, developed the Greater Bangkok Plan 2533 in 1960. In that time, many *khlong* has already been filled in. The plan acknowledged significance of *khlong* as drainage, fire protection, sewage disposal, and bathing (Askew, 2002).

In 1961, the first National Economic and Social Development Plan was established and applied. The 1st – 3rd plan (1961 – 1976) focused on the infrastructure of Bangkok (Pakkasem, 1988). The making of water supply made clean water accessible from pipe not from *khlong*. *Khlong* does not need to be taking care of. It can be left as a sewerage pipe. In the 4th – 6th plan (1977 – 1991) Bangkok was promoted to be a location of factories for export products. Factories are encouraged and more wastewater was released to *khlong*.

The use of *khlong* is mainly in the flood prevention. Watergates are built to control the flow of the water. Without serious concern on other factors, Watergate gives unnatural effect to *khlong*. Human controls flows of water. Community gradually loses sense and collective knowledge and skills related to the use of water. And it also means more manpower needed to maintain effective system. The water also became more still. Still water gets dirty easy.

All of these are interrelation factors to each other, the policies that encourage the development of Bangkok made it became more urbanize and neglected the understanding of the geography. More people need more resources as well as more other problems. Land based city reduced the use of *khlong*. The neglected and dirty *khlong* make use of *khlong* decreased.

2. Related Issues to *Khlong*

1) Flood

Shifting from water based to land based city leave Bangkok people with less immune to the water. They cannot live with water like their ancestors. Concrete surface are increasing for more roads, housing, and factories. *Khlong*, *lamrang*, and *lamkradong* are not being maintained. There is less soil for water to be drained after the rain in the water season. Along with the fact of the location of Bangkok and that there are less *khlong* and the existing *khlong* are mostly in a bad condition. Bangkok definitely floods.

2) The new comers

Bangkok attracts new people. Since a lot of people that moved to be along *khlong* do not have a particular set of knowledge in living harmonizing with *khlong*, the relationship to *khlong* is not as strong as before. Some new settlements such as modern housing projects do not use the advantage of being next to *khlong*. Some put high thick wall to prevent thief and flood. But actually, they lose relaxing open space, recreation opportunity, and possible food and occupation from *khlong*. New houses also prefer to open to roads more than *khlong* too. Actually, the main entrance of the houses were totally changed from water to road.

3) Water quality

Khlong in Bangkok is polluted. According to the Pollution Control Department the main cause of the polluted water quality in Bangkok is the untreated municipal wastewater being disposed directly into the water, including residential sewerage and industrial discharge. As Bangkok population is growing the more wastewater are being discharged to the water. The water became unable to cope with the amount of wastewater. The use of *khlong* such as transportation and recreation cannot be well applied. For example, using *khlong* for transportation, the passengers must face the orders that come from the polluted water. Also, during the trip, water might splash to the face and body. Therefore, it might be the cons for the use of water transportation. Recreation and water sports are not appropriate with polluted water too.

4) Image of *khlong*

In the past, people looked at *khlong* as a channel of water resources. It is the life of the people and the city. Making and maintaining the number and quality of *khlong* was part

of city management plan. Therefore, Bangkok was referred as “Venice of the East” from many foreigner’s view. In the present day, *khlong* is being looked at as a channel of water disposal. Water for daily consumption is available through the water supply channel while disposal of wastewater is directly disposed to *khlong*. *Khlong* can hardly be seen as link to the majority of people in Bangkok. In contrast, *talad nam* is still presented as an image of Bangkok in tourist websites and tourism books. Although the popular *talad nam* promoted for tourism is Talad Nam Damneon Saduak which is not in Bangkok. Other *talad nam* is not as popular.

5) Water management policy

Water does not flow naturally in Bangkok today. While *khlong* management involved many agencies, the flow of water is mainly controlled by the Department of Drainage and Sewerage, BMA. Priority of the department is to drain and prevent Bangkok from flood (Department of Drainage and Sewerage, n.d.). Water is always kept away almost as enemy. The relationship of water as enemy is obviously seen in the time of flood. Not only the department but also the whole city was trying to keep water away. While during other time water are kept low to make sure it drains well in the event of rain or flood. “Keep water away relationship” has made Bangkok deficiency immune for water. Trying to control the water and prevent water from *khlong* not understanding and living harmonize with the water. In the past people who live along *khlong* can use *khlong* efficiently. There are foreigners who mention these remarkable skills such as travel in a small boat. As keeping the water level low in *khlong* and keep the city dry is maintained people do not have chances to practice these skills. Eventually these skills are recoiled. Also as connection to the water decreased activities in *khlong* decreased too. Blocking the natural flow of water to *khlong* by making dams and Watergates. Watergates need to be managed and maintained. It needs budget for that. People also loss sense from the nature from this artificial control.

6) Filling of *khlong* and make more roads

Filling of *khlong* and make more roads to occupy the increasing number of cars are necessary. Some bridges are not made to occupy water transportation. Therefore, the network of *khlong* was demolished. Too many cars not only made a bad traffic but also generate a polluted air too.

7) Community loses its identity and loses the sense of belonging

Wisdom such as skills and local knowledge do not pass from generation to generation, the community loses its identity and loses the sense of belonging to the community. This made less awareness and protection of local resources. Therefore, *khlong* are declining, more neglected and lose its importance. The existing of *khlong* in some community is even unnoticed. Some community prefer non-existing of polluted *khlong* because it seems to be not value to them anymore. Monitoring and law enforcement was not effectively applied. Hence existing problems of *khlong* such as polluted and encroaching increased.

3) Why Revive *khlong* in Bangkok

1) Appropriate for Bangkok geography

Bangkok locates in Chaopraya Delta. It is a low land plain. The geography is suitable for rivers and *khlong*. It will assist the city in preventing flood during the water season. Also as sea water level is increasing along with the sinking of Bangkok land suggesting that living with water is undeniable.

2) Significance of *Khlong*

Khlong is what makes Bangkok. The area of Bangkok originally was a swamp. Use of *khlong* suits well with the geography. The settlement was very few at Bangkok until the made of *Khlong Lat Bangkok* in 1522 during the period of Ayutthaya. Then the settlements happened, then it became an important route for trading, then it became Meaung Thonburi Sri Maha Samut and the house of custom (Canen Bangkok). And later, selected to be the location of Siam's capital, Thonburi, after the fall of Ayutthaya.

Khlong is one of the oldest heritages from Thai ancestors. The wisdom of how to live harmony to the water has passed generations after generations and gathered in *khlong* today. It includes; how to apply *khlong* to the city, how to use water in everyday life, how to survive in the time of flood or drought, how to make use of water, how to enjoy the living with water, etc. For example, Khlong Bangkok Noi to Khlong Chak Phra has been developed since the time of Ayutthaya (Udomkitti, 2014).

The importance of *khlong* is also shown in many ways. For example, it was shown in the selection of Bangkok for a capital to replicated Ayutthaya, Thai architectural style, names of roads and places, traditions such as Royal Barges, Loy Krathong, and Tak Batr Phra Roi, the belief of Naga, the understanding of Mount Meru, the singing of Sagawa, the floating market, and many more. And Bangkok today, *khlong* is still a vital element in the flood prevention system and drainage system.

Khlong is the existing evidence of many historic events such as wars, epidemic disease, trading, etc. It witnesses the growths and changes of the city. It is sometimes involved in those events, results in those events, or is the outcome of those events. Study the history of *khlong* will also lead to the more understanding of the political transition and economic growth of Bangkok.

Khlong in Bangkok gains the reputation on its uniqueness to foreigners. Even though the name Venice of the East was used earlier in referring to Ayutthaya from Fernao Mendez Pinto in the letter to the Society of Jesus in Lisbon in 1554, it was again being referred to Bangkok, at least from Salvatore Besso, a Nobleman, in 1911. The image of *khlong* in foreigner's eyes is still seen today in many magazines and tourist books.

Each *khlong* consists a special set of heritage according to the settlement and the geography of it. It can be pride of the community. It can be a valuable asset in cultural, environmental, and economic.

3) Vision of Bangkok 2020

Vision of Bangkok 2020 in BMA plan document mentioned that Bangkok as a potential city for economy, trading, service center in national and regional level need to be developed under the principle of "Sustainable Metropolis." It also gives 3 guidelines to the development; gateway, green, and good life. It believes that following these guidelines Bangkok can be developed to a balance metropolis and enhance the ability for economy competition. *Khlong* can be an important part of this sustainable metropolis in many ways such as giving opportunity for recreation, reduce road digestion, and give community an identity.

Bangkok population, over 10 million, create about 2.4 million cubic meter of wastewater per day and with not enough wastewater treatments plant. BMA has estimated the capacity of current wastewater treatment plants to only 42 percent of the overall wastewater. The rest are flittered (Department of Environment, BMA, 2012). The level of water is monitored in most main *khlong* for flood prevention purposes. But for most other *khlong* that blended in communities, they lack water.

Apart from the flood and other water issues, Bangkok development has increased numbers of other issues too such as population density, lose of communities and cultures, traffic, pollution, lack of green open spaces, quality of life, etc. Also, seeking for more development projects and using more resources does not seem to solve Bangkok's chaos.

4) Existing of *khlong*

There are numbers of *khlong* already embedded to Bangkok. It is there to make the use of it, in education, in economic, in environment, among others. It is there to connect to meanings of the city. It is there to explore other heritage. It can turn into a valuable asset to the city if it is properly planned and managed. In the other hand, ignore *khlong* will not make *khlong* disappear. The neglect, encroach, and misuse of *khlong* will lead *khlong* to a dry, dirty, and hopeless condition. It will only make *khlong* another problem to the city. Therefore, revitalizing *khlong* in a sustainable way may un-tap the valuable asset to enhance the city's environment, economy, and culture.

Having *khlong* forwarded from ancestors to today Bangkok is never going to be a threat. It is the opportunity for the city. *Khlong* can be a valuable asset in economic, environment, and social to the city.

5) Movements to support revitalization

Bangkok today, there are several movements that can support the revival of *khlong* in Bangkok. There is more awareness on the environmental such as global warming pollution, and especially flood prevention. There is the movement of urban renewal and historic preservations. Tourism trends such as nostalgia and eco-tourism also play an important role. The seek for quality of life such as more open green space, recreation area, quality of food, and meaningful city.

4) Guidelines for Revitalization

Revitalization of *khlong* maybe different in context. But there are few traits to always useful in reviving *khlong*.

Traits of *khlong* revitalization

1) *Khlong* revitalization need to considered the connection of geography to the city. This will lead to an appropriate land use that respects the living with nature.

2) *Khlong* revitalization is a merging of conservation, restoration, and development.

3) *Khlong* revitalization is not a start and finish process. It should be continuing as part of the city.

4) *Khlong* is connected as a network system. Same water flows in different context. In other words, each *khlong* may revive differently, but all *khlong* are connected.

5) *Khlong* revitalization success may not be indicated directly by income but also in other benefits such as environmental and social. There are also indirect benefits from *khlong* revitalization too.

6) *Khlong* revitalization uses a multi-disciplinary skills and knowledge.

7) There is no prototype for the revitalization of *khlong* in Bangkok. Each *khlong* is unique and should be dealt with differently.

Directions for Khlong Revitalization

1) Sustainable development will strive balance between social, economy, and environmental. With the balance of these three factors, *khlong* has high potential in successfully connected to Bangkok and its people. The revitalization will be sustainable, beneficial, and beneficial if it meets the needs of community, enhance the economics, and do not negatively affect the environment. Also, it should be beneficial to the community. And it should be self-independent. The management should find ways to distribute income or other benefit to the community as well as find ways to manage *khlong*.

2) Develop towards water-based city is suitable for Bangkok geography. Develop the city in a different direction will need more effort and can create problems such as flood. The development of the city back to a water-based city will contribute much to any *khlong* revitalization projects in Bangkok. It does not mean to move back and live as in the old time, but to move on and make Bangkok a modern water-based city.

3) Revitalize *khlong* holistically is involving multi disciplinary, all stakeholder, and all concern into account, including community, social, and environment. As reviving one aspect or solving one problem may result in other problems. In doing so, all information should be collected from every stakeholder, including the government agencies, communities, social, scholars, business owners, etc. Therefore, a team should be established accordingly.

4) *Khlong* need water to function. But water is a limited resource. The primate city such as Bangkok have difficulty in providing enough resource as well as to take care of waste, including wastewater. Awareness on the sufficient use of water as well as the littering control should be raised, not only at the reviving *khlong* but also to the whole city.

5) Proposing a cooperation charity community taking care of *khlong* as a whole in Bangkok and working with other provinces, and country in revitalization projects. The revitalization community will be aim to be the center of *khlong* revitalization. Their task will be involving in giving all kinds of support to the revitalization projects, including fund raising, community communication, market needs and other knowledge. The community will comprise of many stakeholders from many *khlong*. They can use the community to share their knowledge, seek for help, seek professions, and learn from others, also in promoting their ideas.

6) Identity of *khlong* is the attribute that makes particular *khlong* different from other *khlong*. It can be sense of place, natural character, built character, or culture. Community can be source of identity too (Buason, 2011). Keeping positive identity of *khlong* is not only keeping meaning to place, but also is a valuable asset for tourism. Therefore, finding the true culture of *khlong*, which mostly related to the geography and early settlement. Therefore, study of identity of place is important to the revitalization. Different *khlong* is unique and should be deal with accordingly. And this identity will be a solid foundation for *khlong* revitalization.

7) Be flexible with new circumstances, since there is no one prototype for every *khlong*.

Discussion/Conclusion

The research has shown that *khlong* revitalization is possible. Having *khlong* in use is suitable for Bangkok geography. It is also where the rich culture and identity of Bangkok is located. *Khlong* revitalization should be holistic developed towards water-based city which includes many uses and with the involvement of all stakeholders particularly the community and keep its identity. In contrast developing *khlong* separate away from Bangkok and its city will lead to low immune or low tolerance to water, which is difficult for this area and may result dramatically like in 2011.

References

Buason, P. "The revitalization of the old markets in Thailand." **International Humanities, Social Sciences and arts** [Internet]. ; [Cited 2016 Jun 15]; 4(1):[about 19 p.]. Available from: <http://www.tci-thaijo.org/index.php/Veridian-E-Journal/article/view/6981>

Canzenave, R. J. (2010). "Sea-Level Rise and Its Impact on Coastal Zones." **Science**. 328 (June): 1517-1520

Department of Drainage and Sewerage. (n.d.). **About**. Accessed March 18. Available from <http://dds.bangkok.go.th/about.php>

Department of Drainage and Sewerage. (2010). **Information of Ku Khlong**. Accessed December 20. Available from <http://203.155.220.231/klong2553/klong02.pdf>

Department of Environment, BMA (2012). **Waste and Wastewater Management by Community**. Accessed July 12. Available from <http://www.bangkok.go.th/environment/>

Department of Public Works and Town & Country Planning. (2013). **Bangkok and Vicinities**

Regional Plan. (n.p.).

Piyanat Boonnak, D. B. (1982). **Khlong in Bangkok.** Bangkok: Chulalongkorn University.

Pollution Control Department. (n.d.). **About.** Accessed March 18. Available from
<http://www.pcd.go.th/>

Udomkitti P. “Bicycle route for sustainable tourism management in Taling-chan area, Bangkok.”

International Humanities, Social Sciences and arts [Internet]. 2014 May 31; [Cited 2016 Jun 15]; 7(2):[about 17 p.]. Available from: <http://www.tci-thaijo.org/index.php/Veridian-E-Journal/article/view/17383>