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► **To cite this version:**

Céline Pierdet. For a control of the urbanisation of embankments in river towns of Southeast Asia. Living Capital: Sustaining Diversity in Southeast Asian Cities, Jan 2007, Phnom Penh, Cambodia. halshs-00344950

**HAL Id: halshs-00344950**

**<https://shs.hal.science/halshs-00344950>**

Submitted on 8 Dec 2008

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January 2007

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## **FOR A CONTROL OF THE URBANISATION OF EMBANKMENTS IN RIVER TOWNS OF SOUTHEAST ASIA**

### **Abstract:**

Embankments in river towns of Southeast Asia were traditionally occupied by populations who practiced fishing and grew markets gardening. Since a few years we can observe a profound change of these activities and of the urbanization. Traditional urbanisation is replaced with urban projects of great size, even with a continuous urbanisation which transforms them in waterfronts. So we have to try to understand why water seems to become today a vector of modernity and to create a recomposition of urban centrality round waterfronts.

Some new urban projects are building in Phnom Penh South with important foreign capitals. Price of the soil is increasing on the embankments while most poor people are evicted from this attractive sector of the Cambodian capital.

So is this process common to others river towns in Southeast Asia such as Bangkok or Shanghai? For a long time were embankments in a neglected state because they were often insalubrious. Are they now destined to become common urban showcases for international investments?

### **Key-words:**

Urbanisation, riverfront, investor, Phnom Penh, Mekong river

### **Résumé :**

Traditionnellement, les berges des cités fluviales d'Asie du Sud-Est étaient occupées par des population pratiquant la pêche et/ou les activités de maraîchage. Or depuis quelques années, elles enregistrent une mutation de ces activités et du tissu

urbain. L'urbanisation traditionnelle fait place à des projets de grande ampleur, voire à une urbanisation continue des berges, les transformant en *waterfront*. Dans quelle mesure l'eau ne constitue-t-elle pas aujourd'hui un vecteur de modernité et n'engendre-t-elle pas une recomposition de la centralité urbaine autour des fronts urbains fluviaux ?

De nouveaux projets d'urbanisme voient le jour à Phnom Penh au sud de la ville, caractérisés par un changement d'échelle par rapport à l'urbanisme traditionnel, et par des investissements de capitaux étrangers importants. Le prix du sol ne cesse d'augmenter sur ces terrains remblayés, provoquant l'éviction des populations les plus pauvres dans un secteur de la capitale redevenu très attractif.

Ce processus d'occupation des berges par un dense tissu de buildings s'est déjà produit à Bangkok ou à Shanghai. Est-ce dans cette logique que la capitale cambodgienne s'inscrit à son tour ? Les berges des métropoles asiatiques, longtemps délaissées car souvent jugées insalubres, sont-elles aujourd'hui destinées à devenir de banales vitrines pour les investisseurs internationaux ?

**Mots-clefs :**

Urbanisation, berge, investisseur, Phnom Penh, Mékong

## **Introduction:**

For some years only, we are surprised by the speed with which the riversides of Phnom Penh change. This Southeast Asian capital of only 1,3 million inhabitants (2004), located in the confluence of the Mekong river, the Sap river and the Bassac river, began to highlight its riversides very recently. Until now, the embankments located in the centre of the capital were considered by the Municipality and the inhabitants to be insalubrious areas. These embankments were not valorised. Their lands fertilized every year by the flood of the Mekong river were left to the fishermen, to the populations which put them in cultures during the decrease of the water level.

However, this confluence area, named Chaktomuk, has a great symbolic dimension, as we have already could explain it<sup>1</sup>, due to the importance of water in Cambodian culture. This symbolic dimension besides constituted a driving force in 2001, when the Municipality interested in the peninsula. But since public equipments were accomplished on riversides, the prices of the soil increased and plans were changed in part.

It is this process which it is now a question of beginning to explain in this paper. Some new urban projects are building at the mouth of the Bassac river, with important foreign capitals. Price of the soil is increasing on the embankments while most poor people are evicted from this new attractive sector of the Cambodian capital. This process began in the most part of other Asian fluvial metropolitan areas for a long time. Traditional urbanisation is replaced with urban projects of great size, even with a continuous urbanisation which transforms them in waterfronts. So we have now to try to understand why water seems to become today a vector of modernity in Phnom Penh and how it creates a recomposition of urban centrality round riversides too, from other examples taken in Asia. Are the Phnom Penh's riversides now destined to become also common urban showcases for international investments?

At first, it will be a question of describing fast the urban plans which affect riversides since a dozen years now, but with a much quicker rhythm lately. Then, we shall explain why urbanisation in a vast alluvial lowland, as that of Mekong river, requires the realization of polders behind the embankment, and in what the permanence of a city depends at first on the resistance of tiny dikes. Finally, it will be a question of analysing the urbanization process of the riversides in the Asian cities and

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<sup>1</sup> C. Pierdet, "La symbolique de l'eau dans la culture cambodgienne – Fête des eaux et projets urbains à Phnom Penh", in *Géographie et Cultures*, Paris : CNRS-L'Harmattan, n°56, juin 2006, pp. 5-22.

showing in what the recent changes put in danger the stability of cities and hydrosystems.

## **1. Urban plans at Chaktomuk area since 1993**

After the leaving of the Vietnamese troops from Cambodia in 1989 and the lifting of embargo, Phnom Penh Municipality attributed a new importance to riverfronts and to the confluence area, in a context of national reconciliation. We can identify three stages in this process.

### **1.1 The rediscovering of the river with quay Sisowath plan**

Since the beginning of 1970s, because of the war and the genocide, open spaces were very neglected by Municipality. And quay Sisowath was always occupied with a lot of sheds and warehouses which blocked them for the beginning of the twentieth century (*cf.* photo 1).



Photo 1: Quay Sisowath, June 1992 (ECPAD – M. Riehl)

In 1993, the royal Government, in cooperation with Paris Municipality, took the initiative in clearing the embankments of these sheds and warehouses between the royal Palace and the esplanade of the railway station. This first important project consisted in opening the view on the river. Quay Sisowath became a new place for walking where parks have been created.

So this first important plan of 1990s inscribed the city of Phnom Penh in the evolution registered by numerous river towns of industrial countries for about twenty years. They have got to offer recreational spaces to inhabitants and to modernize their image.

### **1.2 The mouth of the Bassac river since the great flooding of year 2000**

On the one hand, the flooding began in July 2000 and the level of the water reached 11,20 m in September; on the other hand, between the beginning of 1970s and 1990s, the dredges were stopped in the Chaktomuk area and an island, recently named Pich island, developed at the mouth of the Bassac river. So the flooding of the year 2000 accelerated this process: the surface area of the island reached 58 ha in 2001.

This part of the city had never been developed. After the end of the flooding, the Municipality began to build a dike along the Bassac river. The objective of the Municipality was to use the silt accumulated at the mouth: so it built a polder on which to extend the city. After that, the Municipality, with the financial help of private companies, planned a public garden and a walk along the river, and roads.

The dike was extended from the Cambodiana Hotel to the Monivong bridge. With this plan, the Municipality contributed to protect the city from the floods and to improve the life's conditions of the inhabitants. In a second time, it allowed to reorganize the land ownership along the river.

### **1.3 The integration of the Changvar peninsula in the city**

In year 2000, the embankments of the peninsula were still occupied with agrarian populations who were farmers or fishermen, or with restaurants and karaoke. During the floods, the inhabitants of the peninsula suffered serious damages because the back of the embankment was flooded. Moreover since the beginning of 1970s, the peninsula progressed to the south, up to the royal Palace, because of an accumulation of silts. This process increased too with the great flooding in year 2000.

A third plan, which was financed by the Municipality and by donations of private companies, consisted in protecting the inhabitants of the peninsula from the floods and

in attracting the inhabitants of the city and the tourists<sup>2</sup>. For symbolic reasons too, they tried to stop the progression of the peninsula in front of the royal Palace.



Photo 2: The Changvar peninsula, June 2001 (Phnom Penh Municipality)

This project covered around 15 ha and began in January 2001. It was situated on the accumulation of silts. A dike was built around the tip of the peninsula and the flooding areas were filled up with silts which were taken at the south of the peninsula (cf. photo 2).

Dikes and quays were built to protect the inhabitants from the floods. And public gardens were planned around a conference centre. They are now very seen frequently by the Cambodian families, especially in the evening.

→ *So in this central part of the Cambodian capital, these plans allowed the inhabitants to appropriate the riverfronts and the river which were traditionally occupied by agrarian populations. And in the same time, the Municipality valorised this central place with public equipments and protected the city against the floods.*

## **2. The problem of the urbanisation in the alluvial lowlands and in the deltas**

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<sup>2</sup> The peninsula is linked up with Phnom Penh by a bridge which crosses the Sap river. The bridge was bombed in October 1972 and opened again to the circulation in 1993. Its reconstruction was financed by Japanese cooperation.

The question is to understand how a lot of cities have been developed along so powerful fluvial organisms, most of the time from a tiny bank, when the natural pressures are maximal.

## **2.1 Numerous natural pressures**

The cities which have been built in the alluvial lowlands are among the most threatened by the floods. And in the deltas, they have to cope with the risk of flooding or of change of the course of river. So it is a necessity to control this water which is omnipresent in the deltas, in particular in the deltas which are situated in Asia of Monsoons, because of the high densities of population and the dangerous rivers.

According to the geographer François Durand-Dastès, there is an “interaction between the high densities and the rice cultivation. It is an activity with a high productivity which allows a numerous population to live (...). Inversely it mobilizes an important hand of work.”<sup>3</sup> So the urbanization, in spite of the natural pressures, is a necessity to control and valorise the land. For example, in the delta of the Chao Phraya river, where high densities of population allowed the development of rice cultivation and of horticulture – and vice versa -, the city of Bangkok is protected against the floods only with a system of dikes and pumping stations. This metropolitan area is situated at an altitude of only 2 meters in 25 km of the sea.

## **2.2 The extension of a city from a bank**

The embankments result from a natural process: when there is an exceptional flood, the rising of the river sets silts on the banks. The embankments, which surround the alluvial lowland, rise up flood after flood. In numerous alluvial lowlands, two embankments surround the minor bed of the river. They are rarely submerged, but on the other hand, the low lands located between the embankments and behind them are flooded each year during the period of high waters. So in the regions where they were no protections against the floods, the men fitted to this pressure and they built villages and roads on the embankments<sup>4</sup>.

That's why the extension of a city from a bank, behind the embankment, requires to fill up the low lands and to protect the city from floods with a system of dikes. For example, in Europe, in the Netherlands, the abbeys developed polderisation

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<sup>3</sup> F. Durand-Dastès, *Les systèmes d'utilisation de l'eau*. CDU et SEDES, 1977, p. 67.

<sup>4</sup> F. Durand-Dastès, *op. cit.*, 1977, pp. 42-43.



process, with building of dikes and filling up the lowlands, from the Middle Ages, what favoured the urbanization. But in the majority of the countries, the polderisation process began only after the industrial revolution. So the geographer Jacques Bethemont explains that it allowed the transformation of “towns on water into towns on ground”<sup>5</sup>.

On the other hand, from the natural embankments which surround the alluvial lowland and which protect several cities from floods in the same time, a second stage consisted in building quays in each city when the natural embankments were not enough effective. The quays protect the cities against the floods, make easy the road traffic and separate the urban activities from the fluvial activities.

We had to insist now on the fact that the natural embankments and the artificial dikes are tiny and long buildings which are very brittle.

### **2.3 The brittleness of the dikes and the embankments**

In the deltas, the towns have the advantage of the proximity of the river and of the sea. Nevertheless the urban networks are not much developed. Most of the time, there is only one city which is located at the head of the delta because this site makes easier passage from a bank to the other one. In spite of the evolution of techniques, cities remain very vulnerable in these quasi amphibious areas. When the dikes break, the floods can be very impressive.

Recently, cases of breaks of dikes increased in the world everywhere. The case of News-Orleans, located in the delta of Mississippi, was very mediatized since the passage of cyclone Katrina on August 29th, 2005. This city settled in 1718 on a bank of this delta, under the level of waters of the lake Pontchartrain. Experts had established for a long time that resistance and height of dikes were deficient in case of cyclone of category 5. Besides, these dikes were very badly maintained. But their comments were not taken into account and the embankments of the lake Pontchartrain broke on several hundred of metres. The city was flooded under several metres of water. Other cases of breaks of dikes occurred for instance in April 2006 in the delta of Danube, following strong floods.

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<sup>5</sup> J. Bethemont, “Villes et deltas”, in *La ville et le fleuve - Colloque tenu dans le cadre du 112<sup>e</sup> congrès national des sociétés savantes* (Lyon, 21-25 avril 1987). Paris : éd. du CTHS, 1989, pp. 330-331.

→ *So it is really important to understand to what extent these tiny buildings are brittle and require a constant maintenance, while urban pressure augments continuously, due to the acceleration of urban growth and attraction of the waterfronts.*

### **3. The speeded up urbanisation process of the riversides in the Asian cities**

The recent evolution registered on the riversides of Phnom Penh reflects the evolution registered in other Asian metropolitan areas for about twenty years.

#### **3.1 The recent evolution of the Phnom Penh's riversides after the increase in prices of the soil**

Since 2001, the Municipality of Phnom Penh planned public equipments to attract investors. It planned roads, public gardens and made provide with mains services new plots of land situated along of the river. Near Bassac river, a second stage consists today in dividing plots of land created between economic activities, in an area of the capital become very attractive now. With the strong registered increase in prices of the soil, the Municipality can so clear important benefits during the sale of fields to the investors. In 2001, the Municipality had planned three zones on the western riverside of the confluence area. From the north to the south, it was of:

- a cultural, already existent zone, with the National Museum, the Royal Palace, the Buddhist Institute and the Bassac Theatre;
- then, a tourist zone, with hotels of high social status, close to the hotel Cambodiana;
- finally, a zone of office-blocks in the south, up to the Monivong bridge, with the establishment of the embassies of Russia and Thailand.

A boat-casino, named Naga, was berthed behind the hotel Cambodiana since 1994. A Singaporean investor rented this freighter in the Malaysian group Naga Resorts for 135 000 dollars a month. In accordance with the initial wishes of the Municipality, which liked to re-qualify this space, the freighter left in 2004 (*cf.* photo 3).



Photo 3: The mouth of the Bassac river (C. Pierdet, September 2003)

But since, the development plan of the mouth of the Bassac river was changed to take into account the added value by the development of riversides. And a very big complex of game was built behind the Buddhist Institute and the National Assembly. This ten-storeyed building exceeds broadly the height of buildings until then in force on the riversides of Phnom Penh, as well as the Monument of Independence. In the same way, in 2001, in an interview with the review *Cambodge Nouveau*, the manager of the *Bureau des Affaires urbaines* (BAU) explained that the Municipality planned to make dig the Pich island, or even to suppress it. Since 1980s, this island is cultivated as soon as the level of the river decreases. But the inhabitants of the island were evicted in 2005. The island was sold by the Municipality to a subsidiary company of Canadia Bank for the realization of a gated community, in exchange for the building of bridges on the Bassac river to ease congestion in the traffic of the bridge Monivong.

→ *So we can say that as soon as public equipments are planned or accomplished, the private capitals concentrate on the zone. As long as riversides were considered to be insalubrious areas, they were left in activities with weak added value. With the increase in prices of the soil, plans are often changed in a speculative purpose, what produces a reconstruction of the urban centrality to the advantage of the Chaktomuk area.*

### **3.2 The riversides of the Asian metropolitan areas: traditional urban showcases for the foreign investors, today in full mutation**

In the most part of the fluvial metropolitan areas of Asia, the riversides support today high densities of buildings. But for instance, in Bangkok, the left bank of the river is occupied since the beginning of the 20th century by monasteries, but also by hotels, banks, a post office, the customhouse, etc.<sup>6</sup> These ancient buildings, among which some of them still exist, are located just by the waterside. Riversides are almost completely privatised and this process is ancient. Today even, riversides are occupied by great hotels as the hotel Sheraton, or central post office. There is not public area to go for a walk along the river, on the left bank, in the centre of the city.

In the same way in Phnom Penh, it was impossible to accomplish a promenade all in one block along the river, going of the walk of the railway station to the Monivong bridge, due to hotels and other private buildings which advance to on the riverside. The Cambodiana hotel interrupts the continuity of the walk.

We can take another example with the city of Shanghai, which is located on the Huangpu river, in 30 km of the confluence with the Yangzijiang, and in 80 km of the sea. According to Pierre Gentelle<sup>7</sup>, from 1930s, the towpath which edged Huangpu river was transformed into a walk, today named The Bund, along which being constructed about fifty buildings: seats of foreign banks, of foreign societies, etc. Therefore there also, the attraction for riversides is ancient. In April 1990, a new zone of business, named Pudong, was planned on the right bank of the Huangpu river. In 15 years, this quarter which was before occupied partly by factories, was absolutely transformed. The massive influx of State capitals, as well as those of the Municipality and of foreign investors allowed to hire development and incorporation speeded up of this quarter in the city. The quarter was linked to the old centre by the realization of two bridges, a tunnel and a line of subway. Today The Bund constitutes the central business district (CBD) of Shanghai. It concentrates a very big number of foreign banks, and the Stock Exchange of Shanghai. More than 200 skyscrapers in futuristic forms were constructed there, such as the Jinmao tower or the TV tower, which are famous all over the world.

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<sup>6</sup> S. Van Beek, *Bangkok, Then and Now*. Bangkok: AB Publications, 2001, 131 p.

<sup>7</sup> P. Gentelle, *Chine et "Chinois" outre-mer : à l'orée du XXI<sup>e</sup> siècle*. Paris : SEDES, 1999, p. 211.

The cities of Bangkok or Shanghai are opened to the foreigners for a long time. In these cities-harbours, the riversides constituted the front-door of the city. They supported with it the first picture which presented itself to the visitors. And considering difficulties of urbanisation, the main commercial, administrative buildings, etc. were established on these riversides, or even industrial establishments. Today, in a very speculative context with a strong land pressure, the waterfronts know a very strong mutation with the establishment of numerous skyscrapers to increase the profitability. It is now a question of re-qualifying these built-up areas buildings of which are now sometimes ancient. But Claude Chaline<sup>8</sup>, who broadly studied the evolution of waterfronts in cities-harbours, particularly in the United States, showed well how new plans tended to make the waterfronts into urban showcases, plated on agglomeration. The plans are often fragmented, devoid of general vision, and left on private initiatives. Most of the time, these plans are in dominant feature service sector, commercial, with some cultural activities. But they integrate badly with the whole agglomeration and with its functioning. Due to the presence of often futuristic architectural forms, as in Shanghai, which are located by the waterside, these waterfronts also become very attractive places, which it became necessary to visit. The geographer Chaline so a lot dwelled on the necessity to support pedestrian ways along riversides and to make them accessible to the inhabitants.

### **3.3 Urbanisation and hydrosystem in Southeast Asia: the increase of imbalances**

At last, we had to understand that this increase of density of the soil on riversides or on these filled in areas has serious consequences to their stability. The development of metropolitan areas along these major rivers between others required the building of quays and dikes to protect them from dangerous floods. In the same way their development required the building of dams upstream to supply the inhabitants with electricity. But a river is a hydrosystem, what means that when we act on its course by constructing a dam, by accomplishing quays, etc it has consequences downstream. It changes above all the sedimentary balance sheet of the river, the processes of erosion and accumulation which are in work on embankments, but its flow too.

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<sup>8</sup> C. Chaline (dir.), *Ces ports qui créèrent des villes*. Paris : éd. L'Harmattan, 1994, pp. 45-46.

For example on the eastern embankment of the Changvar peninsula, the owners of the houses which are built at the edge of the Mekong river must build walls to protect themselves from floods, but also from the erosion which affects this bank (*cf.* photo 4).



Photo 4: The eastern embankment of the Changvar peninsula, along Mekong river  
(C. Pierdet, September 2003)

In the same way two islands formed in Chaktomuk area because of the stopping of dredgings between 1970 and 1990. Last example: in December 2004 the *Kohsantepheapdaily* published a photography of the riverside which is located right behind the Cambodiana hotel. The bank collapsed on several metres at the time of the decrease of waters.

The articles of Cambodian newspapers relate more and more often that rice fields were devastated by a violent flood, or that riversides collapsed, drawing away in their fall some houses. Accumulations of silts bother the circulation or the fishing. All these problems are not new, but they have tendency to worsen. And especially, they move regularly.

➔ *It is necessary to understand that the embankments of a river are part of its hydrosystem. A too intensive urbanization of riversides risks worsen certain*

*imbalances, particularly for the populations who live on the embankments or in other cities situated downstream. It is brittle areas which ask for a frequent surveillance.*

### **Conclusion:**

These first elements of thinking allowed us to clear some stakes of the control of the urbanisation of riversides, particularly for the city of Phnom Penh. By comparison with plans accomplished in a metropolitan city as Shanghai, those of Phnom Penh are still of weak importance. However, the last plans of gated community in the mouth of Bassac seem already less well inserted into the whole metropolitan area. And the other plans have already had consequences to the evolution of all the riversides of the confluence area: some of them move back more and more, while silts continue settling elsewhere. It is necessary to encourage the Municipality to plan urban plans which are well inserted in the city and to preserve the public areas and the gardens which are located at the edge of the river and today approachable to all inhabitants. A general vision of the urban development must be favoured, and consequences of plans to the evolution of riversides must be anticipated and controlled.

### **Bibliography:**

- APUR, *Phnom Penh à l'aube du XXI<sup>e</sup> siècle*. Paris, 2003, 123 p.
- Bethemont J., "Villes et deltas", in *La ville et le fleuve - Colloque tenu dans le cadre du 112<sup>e</sup> congrès national des sociétés savantes* (Lyon, 21-25 avril 1987). Paris : éd. du CTHS, 1989, p. 325-333.
- Chaline C. (dir.), *Ces ports qui créèrent des villes*. Paris : éd. L'Harmattan, 1994, 299 p.
- Durand-Dastès F., *Les systèmes d'utilisation de l'eau*. CDU et SEDES, 1977, 182 p.
- Gentelle P., *Chine et "Chinois" outre-mer : à l'orée du XXI<sup>e</sup> siècle*. Paris : SEDES, 1999, 312 p.
- Pen Khon, *Chaktomuk*. Phnom Penh Municipality, October 2002, 149 p.
- Pierdet C., "La symbolique de l'eau dans la culture cambodgienne – Fête des eaux et projets urbains à Phnom Penh", in *Géographie et Cultures*, Paris : CNRS-L'Harmattan, n°56, juin 2006, pp. 5-22.
- Review *Cambodge Nouveau*, 2001.
- Van Beek S., *Bangkok Then and Now*. Bangkok : AB Publications, 2001, 131 p.