



THE EFFECT OF MORPHOLOGICAL CHANGES IN THE BATANGHARI RIVER SIDE AREA IN PASAR, JAMBI CITY

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Abstract : *Jambi City departs from civilization of the settlements along the banks of Batanghari River, since ancient Malay. The long history shows the importance of this riverside area. During the colonial period the modern city was built which is now the old city area with a part known as Pasar area. Morphologically, this early city can be seen as a complete smalltown formation. The rapid development of the city in the era of independence left traces of significant morphological changes. From a pattern that supports the basis of economic life on the control of river trade routes, it becomes oriented to the mainland. How influence of changes in the morphology of the riverbank area on the dynamics of the area is a problem that interesting to research. So with a qualitative descriptive approach, the study is directed to find a series of morphological changes that affect life of the area. It was found that there were omissions, additions or transformations of important functions in the area that changed orientation and balance of area. The loss of function of the port is the first factor that has a major impact on the region. Likewise, changes to the open space of Wilhemina Park and the implementation of a closed area parking system have made the Pasar area isolated from urban macro circulation, which previously actually supported the area.*

Kata Kunci: *morphological changes, river side area, pasar, jambi city*

INTRODUCTION

The existence and development of cities cannot be separated from the influence of geographical conditions. The city of Jambi, which is located in the Batanghari River basin, originated from a settlement civilization based on river access. Its life is inseparable from the role of the longest river in Sumatra as a route for human traffic, logistics and trade connecting inland areas upstream and downstream, which are connected to inter-island sea routes in the archipelago. The markers of ancient civilizations recorded in the downstream area can be seen from the remains of the temples and other artifacts. Among them are the Muaro Jambi Temples Complex which is about 20 kilometers on the east side of the city, as well as several artifacts within the city, such as the Solok Sipin Temple. Jambi has been the center of Malay power since the 9th century [1]. Until the time of the Jambi Sultanate, the economy continued to rely on trade excise in the form of agricultural products originating from the upstream areas of the river [2].

As a settlement on the banks of a river, proximity to the body of the river and its

tributaries is a major consideration. The existence of the river is also the orientation of the building. Traces of old settlements can still be found, both in the opposite city area and on the banks of the Asam River which empties into the Batanghari River. Houses on wooden stilts by the river with porches and stairs leading to the river. In swampy areas along the Asam and Marem Rivers, the stilt model anticipates the rise and fall of the river level which is affected by the condition of the Batanghari River.

In the past, when transportation access and urban facilities were more developed on the mainland, changes occurred in the houses and the orientation of settlements. Then the access becomes ambiguous, towards the river and land. In the end the side towards the river was abandoned. So that from the direction facing the orientation to the back side. The river is a source of livelihood and forms culture, so it's just a waste area. In many of the houses there are still boats or canoes stored under the stilts. Settlements on the banks of the river become slums which are considered a city problem.

In the colonial period the Dutch had completely controlled this area from the rule of the Jambi Sultanate after the 1858-1907 Jambi War [3], a modern city was built whose structure forms the basis of the center of Jambi City today. The old city area covers the lowland area on the south side of the bend in the Batanghari River, in the form of land edged with swamps flanked by higher parts of the land in the upstream and downstream directions. From the banks of the river, the city area was developed inland with complete facilities that provided support for vital port functions as well as supporting the colonial power development strategy.

On the high land flanking it are placed the supporting facilities of power, in the form of military barracks and a fort in the area where the royal palace was formerly located, on the upstream side. Meanwhile, to the east or downstream, resident house, resident offices and other government facilities are being built. In the lowlands, among others, a port area with a wharf and supporting buildings was built, such as the office of the Royal Dutch Shipping Company (KPM) and other shipping companies and trade functions. This small town designed with a complete function, has sections that are functionally related and stretches to Wilhemina Park in the south.

If in the past the tug-of-war of power over the region was influenced by the position of the river in controlling the upstream and open sea routes, then the development of large ports along the coast of Sumatra reduced the economic role of the Batanghari River. Especially with the increasing land transportation infrastructure and the development of cities in the hinterland. In the era of independence, the function of the port was more for logistical purposes. Even if there is a river cruise that carries commodities from upstream areas, it is more to mining products, such as coal. Sailings for human passengers using rivers are nothing more than domestic voyages using small boats. So the supporting functions in urban areas related to the main function of the port have decreased. Shipping offices are no longer found in the area.

When there are geopolitical and economic changes in the regional area as well as the national development strategy on land and waters, shipping on the Batanghari River

experiences a port function being moved downstream. So the supporting functions also disappear. The city area, known as the Pasar area, has gradually changed almost completely into a trading area, with shophouse model buildings dominating. The changes that have occurred have made the city more crowded and dense, becoming a city trading center which is also a destination for people from outside the city in Jambi Province and outside.

The relocation of the port downstream to the east of Jambi City in the mid-1990s, removed the functional traces of a port city. The characteristics of an open city that connects the inland with the inter-island and international maritime world have also disappeared. Even waterfront characters can no longer be captured. High embankment clearly separate the river waters from the city area. The relocation of the market which was originally located in the Pasar area to the riverbank side in the 1960s prompted drastic changes to the area. From a small compact city that is balanced to be almost entirely a trading area. The wooden shophouses were replaced with stone shophouses. The remaining non-commercial public facilities are only the Magatsari Mosque which still slightly colors the surrounding area with trade in Muslim needs.

The growing city of Jambi is expanding inland, opening up residential areas and new urban centers which have contributed to depopulation in the Pasar area. Most of the existing shophouses have turned into shops, which function only during the day. At night, the area becomes dead with only a small population remaining in residential pockets in the marshy areas. The upper floors of the shophouses became vacant and uninhabited, only a small part of the space was used for storage. The current condition which shows the phenomenon of decreasing the vitality of the area continues as an urban decline [4].

Regardless of external factors outside the area's environment, changes in the morphology of the area have created an unbalanced condition. The death of functions in the region drags on supporting functions and other main functions that synergize with it. How changes in morphology and functions in this area also show the process of declining urban vitality, is a problem that needs to be investigated so that it can become the basis for improvement and even reverse the declining conditions that have occurred.

METHOD

In this qualitative research, an analysis of the morphology of the city and its development is carried out by utilizing map data from the past to the present. To describe this morphological transformation, it is necessary to support a rationalistic analysis on the findings of the existing layers. As a city that was planned during the colonial period, it can be examined from the urban design elements by using some of Hamid Shirvani's approach. Mainly what is analyzed is land use, mass layout of buildings and open spaces and circulation [5]. To emphasize the scope of the study area, what is referred to as the Pasar area here is the old part of the city which includes a closed area bounded by Jalan Dr. Sutomo on the east side, Jalan Raden Mattaher and Jalan M.H. Thamrin on the south side and the Asam River on the west. While the north side is taken by the banks of the Batanghari River as a boundary that links the area to the river's historical existence as a city.

RESULT AND DISCUSSION

The problem of the Pasar area is inseparable from the history of the city's development. These traces are recorded in the morphological formations of the city. In the study, it was limited to the formation of a modern city whose permanent structure can still be seen today. Several layers were investigated based on the data found and faults that appeared. The initial shape of the morphology of the city with the Pasar area in it can be seen on the 1923 city map which is in the KITLV archive (Figure 1). On the map, it can be seen that the area referred to has a higher density of structures compared to its surroundings.



Figure 1. Pasar Area on 1923 map. Compiled from KITLV map source.

This area is directly related to the Batanghari River. The port function obviously seen here. There is a jetty connected to Grooteweg (now Jalan Raden Pamuk) as the main road on the river side. On the south side of Jalan Grooteweg, the buildings are lined up quite tightly. The buildings facing the river are buildings with functions related to ports, one of which is known as a shipping company building.



Figure 2. View of Jambi City on the banks of the Batanghari River in colonial times (KITLV Collection) with rows of buildings along the “Grooteweg” and a pier in the front, high above the riverbank. Several floating houses/rafts seen on other side of the river.

From the Grooteweg one can see direct links to the south with cross walkways intersecting them. In the plot pattern that is created, there are buildings that are oriented to the existing road network. Thus, it can be seen the change in orientation on the inner side of the city area, from the river bank orientation to the road network that forms the structure of the grid area. While on the south side you can find a city park which is the orientation of the city on the mainland side. This open space hierarchy is strengthened by the orientation of the surrounding buildings. What stands out is the military hospital building and the HIS school building.



Figure 3. The harbor area with the main Grooteweg road running along the bank with densely packed buildings on the south side of the road. Floating wharf with wooden construction extending across the riverbank (KITLV Collection).

Through the structure of the road network and division of functions, one can examine how circulation within the area works. Circulation in the road network connects one area to another within the region and as a whole the area to other areas within the city. The relationship between the core of the area with the function of the port and with open space as a city node forms a relationship pattern that drives circulation within the area. The dividing road network which is covered by the regional perimeter roads provide a balance of functions and equal access. So it can be seen that it is the Helfrichlaan road that is the lifeblood of circulation that enlivens the core and other parts of the area.

While Parkweg is the main lifeblood of the city which distributes city life from its main and first function as a control node for river trade routes and outer waters, encouraging the development of the city towards the mainland. At the same time this road ensures that the network of dividing roads within the area functions together with Helfrichlaan and Sungei Asamweg which stretch along the banks of the Asam River. So the general picture of the distribution of the grid in the area, formed by the lanes that stretch from north to south and the divider across the east-west.



Figure 4. The main route circulation is formed from the structure of the road network and the influence of urban spatial patterns, as seen in map A of 1923 (KITLV archives) and map B of 1945 (collection of the Australian National Library).

The Wilhemina Park node shows the privilege of spatial hierarchy, by being the meeting point between the paths from the river port, the Pasar Area and the central government area, as well as from other parts of the city to the south and west towards the mainland. From the nodes of the road network and the formation of urban spaces, it can be seen that Wilhemina Park is designed to be a public space, and even as a real city center. Because this space connects important areas of the city as well as the orientation of the buildings around it. Indirectly shows the strategic direction of city development in the future.

From the spatial pattern formed by the road structure, it can be seen that the formation of a more densely divided plot in the middle, so that this area can be interpreted as the core of the area that is now known as the Pasar area, at least in the early stages of development. Looser plots of space can be seen around, especially those bordering the government center in the east, Wilhemina Park in the south and the side facing the Asam River or divided by the Maram River.

The formation of the initial plots seems to be inseparable from the influence of geographical aspects, especially by the presence of rivers. On the north side, there is the Batanghari River as the main element in forming and orienting the city development. In the eastern part there is the Asam River which flows from the south of the city and

empties into the Batanghari River. In addition, there is the Maram River which penetrates parts of the southern side of the area. How these rivers affect the spatial structure is illustrated in Figure 4. It can be seen that the grid that is formed is not straight as a whole, but has sections that are formed radially curved, according to the formation of the Maram River and the Asam River. On the banks of this swampy river, settlements with houses on stilts are still found today. There is no visible effort to form these natural rivers into canal patterns as seen by the Dutch colonialists in Batavia.

Referring to the 1945 map collected from the Australian National Library (Figure 5), it can be seen that in two decades, the structure of the city has not changed much, except for the addition of several road networks or the division of plots. In a map that looks more detailed than the 1923 map, one can also find the addition of a pier from the previous 2, namely a floating pier to the north of the Pasar Area and a Resident Pier in front of the Jambi Resident's House. Additional concrete wharf is on the east side of the floating wharf. This indicates an increase and development of port facility activities.

The same goes for splitting plots to the west of the port area. From the naming of the pinned road, it shows that it is the development of the Chinatown area. The structure of the Chinatown area that appears before, right behind the port area, has been seen on the previous map. The importance of the Chinatown area is not only evident from its division, but also in the special naming of the road that leads to it, namely Hokkian Straat. Chinese people played a big role in trading on the Batanghari River since the era of the sultanate. However, at that time they were not allowed to live on land, so they were more often found in floating houses on the banks of rivers, as is often found in Palembang (Figure 5). In the colonial period, they got a place related to their role in port operations, by being right on the back side of the port. Chinese settlements are also found north of the river.



Figure 5. Situation in the Chinatown (Pecinan) Area with rows of 2-storey wooden houses (KITLV archives).

Another thing that can also be seen is the Magatsari Mosque, whose mass is starting to appear on the map. It can be seen that it is quite large, compared to the image of the building mass squares that appeared on the map in 1923. The mass image is clearly visible with orientation, thus distinguishing it from other buildings that are perpendicular to the road. On the 1923 map, it is not yet clear which plots of buildings are oriented

towards the Qiblah. Another important value is the appearance of the naming Moskelaan which gives strong access from Grooteweg. Type of road that shows a typology of beautiful roads with large trees on the sides [6]. This is confirmed by its continuous position, albeit with a slight fracture at the junction, to the Helfrichlaan Road. From its position and name, it is an important corridor in the area. O. L. Helfrich was the name of the first Resident of Jambi.

Subsequent developments in the independence era brought major changes from the beginning of the construction of Jambi City. The change that prompted a series of massive developments was when the existing market in the area was moved outside, to a swampy area on the riverbank that had been filled up earlier in the decade of the 60s. Hoarding was done after the area experienced a major flood. After the market area was vacated, an entertainment center building was built which filled an abandoned block. Along with that, the old wooden shophouses began to be replaced with stone shophouses. So that the 50's or 60's to 70's architectural style shophouses appeared. The area was soon filled with buildings and left the center of the several blocks through which the Maram River flows. Thus, cavities were formed in the block which contained swampy rivers with the remaining stilt houses. Visually, this condition can be seen in Google Earth imagery from 2002 to 2017 (Figure 6).

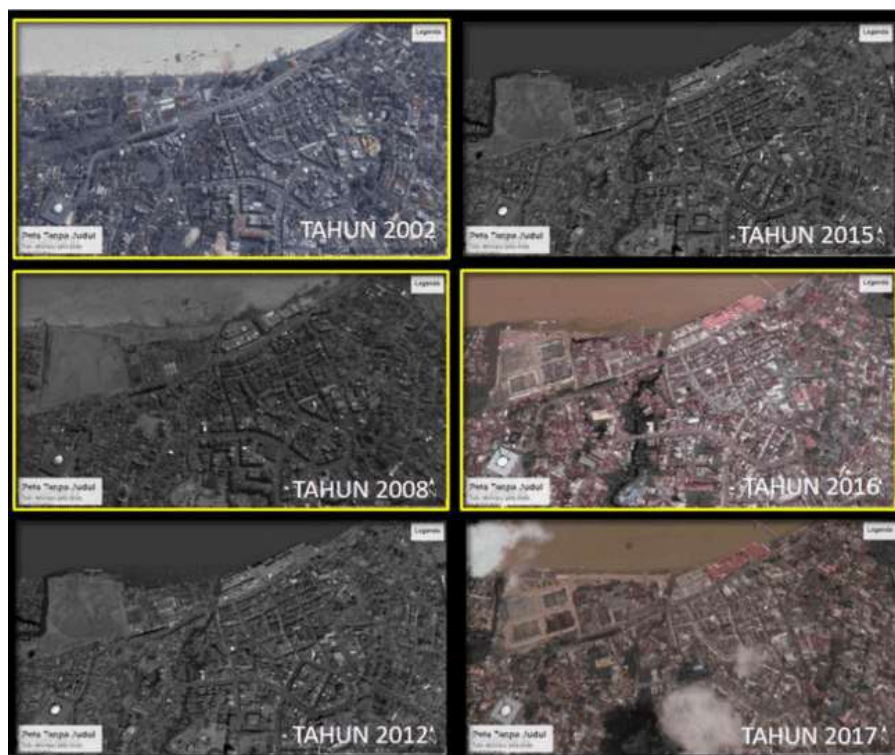


Figure 6. Image record of Google Earth images from 2002 to 2017

In the 2002 recording of the situation in the area, apart from showing areas that were already filled with buildings, other significant morphological changes were also seen, namely changes in the riverbank area and in Wilhemina Park. Since the moving of the port to the lower reaches of the river east of the city (Muaro Sebo) in 1995 [7], there has been a change in function in the riverbank area. Although there is still one wharf remaining, namely the stone wharf, there is no more activity as before, only small-scale river

transportation activities remain. Part of the abandoned area looks empty filled with shrubs, while part of it is used as the headquarters of the marine police unit (Satpolair). On the west side, across the Asam River, there was the Angso Duo Market complex, which was formerly transferred from the old market in the Pasar Area.

With this change, the function of supporting the port at south of Jalan Raden Pamuk (formerly Grooteweg) also disappeared. Existing buildings changed functions or were mostly replaced with stone shophouses, with the main function being trade. So functionally they are no different from within the region, only the differences in the commodities are still visible. Wilhemina Park at that time was visible and filled with the offices building of a state-owned telecommunication company (Telkom) and the Jambi Province BKOW Secretariat Office. By being surrounded by a fenced yard, this area loses its function as a public space. Likewise with changes in the central area of colonial government, the hierarchy in regional spatial planning disappeared.

In the historical record of Google Earth imagery in 2008, changes can be seen on the banks of the river, even in parts of the river body, large buildings have been erected which are malls or modern shopping centers equipped with hotels and other supporting facilities. As a building developed by investors as a type of commercial building, this area is no longer open. The Pasar area loses access and visual continuity to the river. In such conditions, there is competition in function with the trading area in the Market Area. So what happens then is competition between regions is no longer a balance.

In its development, the Pasar area is implemented with a closed parking park system with door gates. So in such conditions the area circulation system is separated from the direct influence of circulation around the area. The main routes, which were previously influenced by surrounding functions, only became the main access for vehicle visitors to the area mixed with parking spaces.



Figure 7. Changes in area's environment in 2023 Google Earth image record.

The latest developments that can be seen on the map of the Pasar Area and its

surroundings, as seen in the 2023 Google Earth image (Figure 10), show changes in the riverbank area, especially in the west of the area. After previously, in the 2017 to 2022 recording range, the second relocation of the Angso Duo Market, which was previously on the west side of the mouth of the Asam River to the other side in the upstream direction, can be seen the construction of green open spaces on abandoned land. Recent changes have the potential to increase activity in this area, but have yet to show their impact on the Pasar area.

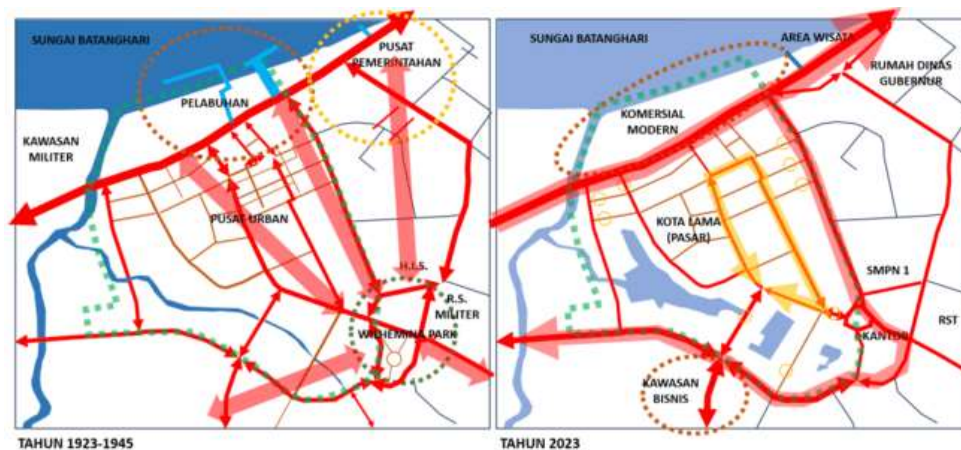


Figure 8. Comparison of two eras that showing changes in activity movement, urban interconnection and orientation.

By comparing the circulation that follows the morphological changes in 1923 to 1945 picture with the current conditions in 2023 (Figure 8), it is clear how the circulation system in the Pasar area is now isolated without the encouragement of cross movement as seen in the early days. In that era, the function of the port pole with the urban space node poles flowed the movement that gave the distribution of access to parts of the area. Meanwhile, in the current era, the main movements are more visible around areas with a high level of density, while the circulation network system in area is separated. Movement into the area only relies on the internal attractiveness of the Pasar area which has now experienced urban decline. The congestion that is found in the area during the day is more due to the very limited area of road space that can be traversed by vehicles. Meanwhile, at night this area becomes a ghost town which leaves little life in the swampy residential enclaves along the Maram and Asam Rivers.

CONCLUTIONS

In a series of regional morphological formations, several faults have been found which show a significant influence on this urban area. From the beginning of development as a modern city, Jambi started as a river port city. In this case the port acts as an economic engine through port interaction with urban areas. So the activities that occur and are accommodated in port cities are greater than the physical activities in cargo transfers [8]. So it can be seen how Jambi City was originally developed as a relation of the port function.

Changes in national and regional shipping strategies as well as demands for urban development have pushed the port to move downstream from the city. This transfer was

the beginning of a drastic change in the character and function of the area. If at the beginning, the city structure showed functional linkages, successively from the port, port support areas, Chinatown and the city center area, then some of the links were cut off. Referring to this type of riverside city, based on its function it is a Working Waterfront type [9], namely its port function. So with the disappearance of the harbor, leaving only the small boat passenger jetty, there has been a change in the function of the buildings facing the river in the north of the area. This area turns into just a trading area following the allotment within the area.

The area itself has also experienced significant changes, including when the market in the area was moved to a new area on the elevated riverbank west of the mouth of the Asam River. Continuing with the massive construction of stone shops in the 70s. All areas which are compact city centers with mix-used characteristics tend to be homogeneous as trade areas. The heterogeneity that appears is more in the grouping of commodities in regional areas. Besides that, with the existence of settlement pockets on the banks of the Maram River and the Asam River. The development of the "Istana Anak" building on a former market location and several cinemas nevertheless enriched the area with entertainment functions, even though as a whole as a commercial facility. But its role can be as a function node that encourages the growth of support activities with its facilities.

The third big influence is the transition of the open space area of the former Wilhemina Park into an office with a closed courtyard. So the public function of this area is lost, as well as its role as a counterweight and as an orientation center for urban areas. Together with implementation of the Pasar area as a closed parking area with paid gate access, these two things act as a breaker for the movement of circulation that penetrates the core of the area and connects the riverside area with the public center in the south. The major clash due to subsequent morphological changes was the construction of the modern commercial center WTC Mall on the banks of the Batanghari River in 2005. The presence of large buildings with commercial functions with restrictions on public access has cut off the area from direct river access. So it can be said that the role of the blocks in the north of the Pasar area as a waterfront has been lost. This area has lost its urban appeal and is even oppressed by big capital hegemony. Market areas are becoming increasingly isolated and with the influence of other factors, pushing the area to experience urban decline with a decrease in 3 aspects, namely population, economy and urban structure [10]

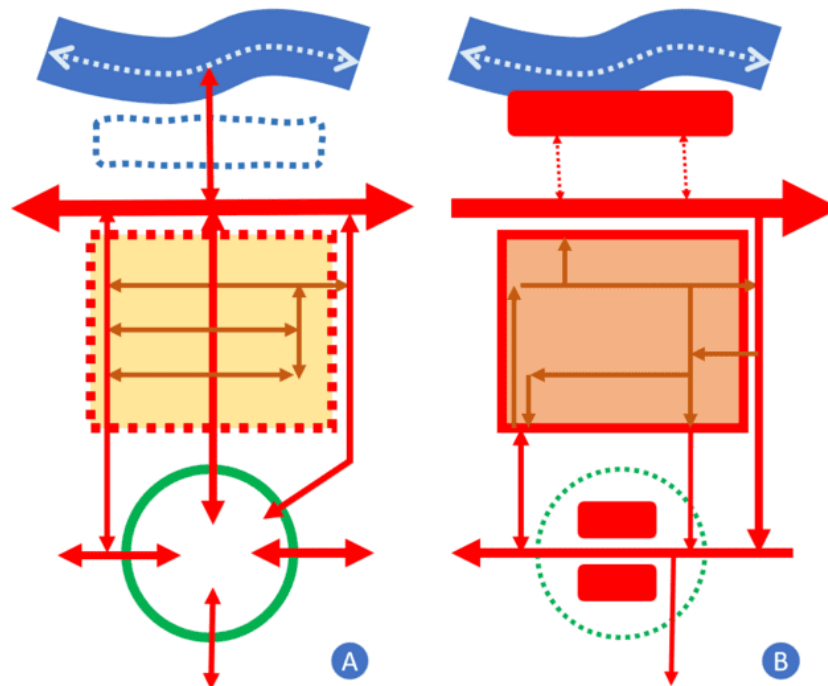


Figure 9. Scheme A show structural condition in the area in colonial era and B in recent era

Comparative summary of the Pasar area conditions related to changes in area morphology as shown in Figure 12. The continuity and linkage of functions that trigger movement and a balanced distribution of urban activities can be seen in the initial structural description. Meanwhile, current developments show competition between regions and are exacerbated by the isolation of access to rivers and the surrounding environment which ends in the isolation of the Pasar area from development.

Positive changes on the banks of the river with the construction of pedestrian bridges in 2010s and green open spaces in 2022, which have tourism main purposes, have not helped much in improving the condition of the Pasar area. The isolated condition of the area and competition for functions that keep urban balance away are the inhibiting factors. Likewise, the increasing density of visitors due to the exploitation of riverside areas has created new problems, which are exacerbated by the paradigm of prioritizing private motorized vehicles which is still firmly attached. Open spaces must be placed in the right areas by considering balance and encouraging a paradigm shift to a walkable oriented. And the last is to fully open the riverside area for public access (inclusive) and the development of a mixed-use waterfront character. As well as reopening an open space on the south side of the area so that it can be a counterweight as well as complementing the magnets at the two poles, namely the waterfront side and the public space side in the area. equipped with facilities for pedestrian movement with good walkability in between.

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