STUDY ON THE IMPROVEMENT PROCESS BY INHABITANTS IN AN URBAN RIVERSIDE SETTLEMENT

A case study in the Musi urban riverside settlement, Palembang city, Sumatra, Indonesia

都市川辺居住地における居住者による改善プロセスに関する研究

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This study aims to recognize the improvement process by inhabitants in an urban riverside settlement. We found that, besides improving their houses, inhabitants in the settlement also improved the environmental infrastructure and provided neighborhood facilities such as a small mosque and daily goods stalls. We also found that there are three types of house improvements i.e. improving the house building materials, extensions or modifications of house layout, and the conversion of raft houses to pillar houses. Based on these findings, we recognized that improving houses and environmental infrastructures have been derived from the habitual activities of inhabitants in the settlement. This study also revealed the indication of some inhabitants hope that the government should be involved in the area’s improvement process.

Keywords: Urban Riverside Settlement, Improvement Process, Raft House, Pillar House, Palembang City

1. Introduction

One of the clearest trends in Indonesia’s development is an increasing proportion of the population living in urban areas. In 1930, there were only seven towns with a population of over 100,000 and a mere nine per cent of the population were classified as living in urban areas. In 1990, this figure had grown to 30 per cent, representing 55 million people1.

This rapid urbanization process has caused some problems related to urban housing. Because urban areas can’t grow continuously, migration from rural to urban areas has caused higher density and problems in providing residency.

People from rural areas generally migrate to urban areas in order to improve their life. They move to the towns as unskilled labor and with a low level of education. Most of the rural-urban migrants therefore face a deterioration of circumstances in the early periods of their urban stay. Many migrants live in inadequate shelter and small, crowded dwellings, until finding stable jobs with a better income, improving their dwellings or moving to better locations.

The urban riverside settlements have also become alternative places for migrants or urban poor. Most of those areas are still facing problems of water supplies, reliable walkways, housing quality, sanitary facilities and waste management facilities. An unhealthy environment caused by an inadequate water supply, sanitary facilities and waste disposal system can cause the emergence of illnesses such as diarrhea, cholera and typhus.

The Musi urban riverside settlement in Palembang City constitutes one riverside area which faces a deterioration of the housing and living environment. 49.1% of the slum houses in Palembang City are located in 33 Musi riverside urban villages2. On the other hand, the local government of Palembang City is planning to develop the Musi urban riverside areas as a waterfront tourist spot3. Nowadays, the local government is still seeking the appropriate method to solve the problems in the area.

1.1 Objective of the Study

The objective of this study is to improve the knowledge of riverside settlements in Indonesia and to provide exact information on the Musi urban riverside settlement which may be

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used in overcoming their problems.

Related to the objectives above, the authors have carried out two studies on the Musi urban riverside settlement. The first study focuses on analysis of the riverside settlement inhabitant’s characteristics in relation to the urban situation. The second study concerns the typological analysis of houses and people-gathering places in the settlement.

There are two concepts central to dealing with the subject of squatters: that of self-help and that of community. In Indonesia, the self-help home ownership sector has constituted a housing supply system covering 55% of urban housing stock. In this sector, households do a step by step process of producing their own dwellings. In this study, the authors focus on the improvement process by inhabitants for the purpose of considering principles for settlement improvement programs.

1.2 Methodology

This study was started with a general observation along the Musi River for the purpose of recognizing the area having a greater number of raft houses. We found there were approximately 225 raft houses and 1500 pillar houses in RT areas along the Musi River from Bom Baru Quay to Ogan Bridge. It then was found that most of the raft houses existed in the Seberang Ulu Area along the Musi River from Ampera Bridge to Ogan Bridge. The observation also found that most of the raft houses were located in areas where the Musi River meets Kedukan River and Musi River meets Ogan River (See Fig. 1).

RT 1 Kelurahan Kertapati located near the Musi and Ogan Rivers conversion was selected as a study location, because the number of raft houses in that RT was higher than in other RT areas. For the same reason, we also selected RT 10 Kelurahan 5 Ulu, located near to where the Musi and Kedukan River meet, as another study location.

We interviewed family members or household heads about the inhabitant’s process of living in the settlement, family history, year of house construction and the house improvement process that was carried out by inhabitants. We then made measurements and sketches of the raft and pillar houses and also noted the present condition of the houses.

Field surveys were carried out in 1997, 1998 and 2000. In carrying out the survey, four students from the Department of Architecture, Palembang Institute of Engineering assisted us. In RT 1 Kelurahan Kertapati, we observed 21 pillar and 18 raft houses. In RT 10 Kelurahan 5 Ulu, we observed 31 pillar and 14 raft houses. Both of the kelurahan, where the survey was carried out, were located in the Sub-District of Seberang Ulu I, Palembang Municipality.

Based on the data of the investigation, we then traced the growth process of the settlement, traced and made schemes of the house improvement process, including raft and pillar houses. We also identified the improvement process of the environmental
infrastructure in the settlement.

1.3 Review of Literature

According to a dictionary of Indonesia-English the word kampung means a residential areas for the lower classes in towns and cities. Bagoes (1995) writes that kampung has been recognized as one characteristics of the Indonesian urban area, however, kampung has poor sanitation. In 1969 in Jakarta, the Kampung Improvement Program (KIP) was first initiated. The pace of the KIP accelerated dramatically after 1974, when the World Bank started to finance it.

The authors found that many studies of kampung were done in landed kampung. Only a few studies have been carried out in settlements having raft and or pillar houses. In 1984, Silas did a comparative study of the Kampung Improvement Program with cases in Jakarta and Surabaya. Shuji Funo (1989) investigated the transitional process of kampung and kampung housing systems in Surabaya City. In that study he offered some considerations on the kampung housing system and alternative strategies for urban renewal after KIP. In 1989 Haryadi did study of a Yogyakarta kampung focusing on the residents' strategies for coping with environmental press: relation to house-settlement systems.

In 1993, Sudibyo, Hatmoko and Sarwadi did a study on community participation systems of the environmental management in kampung, located along the Code River in Yogyakarta. In 1998, Alvianson also conducted research along the Code River. His study concerned community participation in managing settlement environment infrastructures. Alvianson's study observed an area broader than Sudibyo's study. In 1998 Bakti Setiawan also did a study of kampung located along the Code River, Yogyakarta with a different focus. His study focused on how kampung people gained resources and security, despite their illegal status in kampung. In 1999, Prayitno et al studied low cost rental flat development in large Indonesian cities. The study focused on transformation from traditional kampung to multi-story housing.

In 1997, Ari Siswanto investigated raft houses in the Musi riverside area. He focused on the characteristics of houses and socio-economic characteristics of the inhabitants. His study includes physical and social economic aspects and devotes a part toward the Palembang Traditional House. Unlike the Code River in Yogyakarta, the Musi River in Palembang City constituted a navigable river. The river was also a workplace for the riverside inhabitants.

In 1998 Zuber Angkasa studied the territoriality of the rafting settlement area over the estuary of Ogan in Palembang City, focusing on how inhabitants of raft houses control and manage the area surrounding their houses. In 1999, Aniati Yulisma did a study on urban kampung in Palembang City. The study covered the area along the riverside and landed settlement and focused on a system of activities and the setting of kampung inhabitants.

None of the studies about riverside settlements having raft and pillar houses have included all the aspects of the housing phenomena. Ari’s study is broader but still general, and Angkasa’s study focused on territorality. Yulisma’s study concerned the system of activities and setting of inhabitants. There is still no study on the improvement process in those areas. This study attempts to focus on the improvement process by inhabitants in the riverside settlement.

2. Growth Process of the Riverside Settlement

2.1 Origin of the Inhabitant and Motive to live in the Musi Urban Riverside Area

We found that 87.5% of raft house inhabitants and 61.5% of pillar house inhabitants were people coming from other places. 12.5% of raft house inhabitants and 38.5% of pillar house inhabitants constituted people who were born in this area. We then found that 71.9% of raft house and 34.6% of pillar house inhabitants were people coming from other districts in the same province. We could say that most of raft and pillar inhabitants were migrants coming from other places, particularly from the area surrounding Palembang City but still in the South Sumatra Province area (see Table 1).

Table 1 Inhabitant’s Place before Living in the Riverside Area

<table>
<thead>
<tr>
<th>Former inhabitant's place</th>
<th>Number of household</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raft house</td>
<td>Pilar house</td>
</tr>
<tr>
<td>People who were born in the riverside area</td>
<td>4 (12.5%)</td>
</tr>
<tr>
<td>Other villages in the same sub-districts</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Other sub-district in the same district</td>
<td>87.5%</td>
</tr>
<tr>
<td>Other districts in the same province</td>
<td>23 (71.9%)</td>
</tr>
<tr>
<td>From other provinces</td>
<td>1 (3.1%)</td>
</tr>
<tr>
<td>Total</td>
<td>32 (100.0%)</td>
</tr>
</tbody>
</table>

Source: Field Survey, 1997

Most migrants coming from other places to the urban riverside area had motives to be near workplaces. In the raft houses, it was 90.6% of the population, while in pillar houses it was 61.5% (see Table 2). Most inhabitants of raft houses (81.2%) and pillar houses (57.7%) worked as informal sector workers such as boat-maker/repairer, boat-driver, and trader (see Table 3). We noted 18.8% of raft house inhabitants and 30.8% of pillar house inhabitants worked as traders on their raft houses i.e. gasoline seller or as traders in markets located near the Musi River i.e. Pasar Ilir 16 and Pasar Kertapati. Most laborers worked in both markets, the bus terminal near Ampera Bridge or in the river port (see Fig. 1 Location of Survey Area).

Table 2 Inhabitant Motive for Living in the Riverside Area

<table>
<thead>
<tr>
<th>Motive for living</th>
<th>Raft house</th>
<th>Pilar house</th>
</tr>
</thead>
<tbody>
<tr>
<td>Near the workplace</td>
<td>29 (90.6%)</td>
<td>40 (76.9%)</td>
</tr>
<tr>
<td>Receiving the house from parent</td>
<td>1 (3.1%)</td>
<td>12 (23.1%)</td>
</tr>
<tr>
<td>Others</td>
<td>2 (6.3%)</td>
<td>4 (7.7%)</td>
</tr>
<tr>
<td>Total</td>
<td>32 (100.0%)</td>
<td>52 (100.0%)</td>
</tr>
</tbody>
</table>

Source: Field Survey, 1997
Table 3 Inhabitant's Occupation

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Raft house</th>
<th>Pillar house</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laborer</td>
<td>3 (5.4%)</td>
<td>6 (11.5%)</td>
</tr>
<tr>
<td>Fisherman</td>
<td>3 (4.9%)</td>
<td>3 (5.5%)</td>
</tr>
<tr>
<td>Informal sector</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boat-maker/repair</td>
<td>3 (4.9%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Boat-driver</td>
<td>17 (53.1%)</td>
<td>14 (26.9%)</td>
</tr>
<tr>
<td>Trader</td>
<td>6 (18.8%)</td>
<td>16 (30.8%)</td>
</tr>
<tr>
<td>Official</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Governmental official</td>
<td>0 (0.0%)</td>
<td>3 (5.8%)</td>
</tr>
<tr>
<td>Private official</td>
<td>0 (0.0%)</td>
<td>2 (3.8%)</td>
</tr>
<tr>
<td>Others</td>
<td>0 (0.0%)</td>
<td>8 (15.4%)</td>
</tr>
<tr>
<td>Total</td>
<td>32 (100.0%)</td>
<td>52 (100.0%)</td>
</tr>
</tbody>
</table>

Source: Field Survey, 1997

2.2 Process for Getting a House

In term of the process for getting houses, we found that 65.6% of raft house residents got their houses by buying them, 31.3% by constructing them and 3.1% by renting. Differing from raft houses, only 21.5% of pillar house inhabitants got their houses by buying. 50.0% were by constructing, 13.5% were receiving their houses from parents, 11.5% were renting houses and 3.8% were living in parent's houses (see Table 4). There was also a case where an owner bought a house in another place, disassembled it, brought it and then reconstructed it in the riverside area.

Table 4 Process for Getting a House

<table>
<thead>
<tr>
<th>Method for getting a house</th>
<th>Raft house</th>
<th>Pillar house</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buying</td>
<td>21 (65.6%)</td>
<td>11 (21.2%)</td>
</tr>
<tr>
<td>Constructing</td>
<td>10 (31.3%)</td>
<td>26 (50.0%)</td>
</tr>
<tr>
<td>Receiving from Parent</td>
<td>0 (0.0%)</td>
<td>7 (13.5%)</td>
</tr>
<tr>
<td>Renting</td>
<td>1 (3.1%)</td>
<td>6 (11.5%)</td>
</tr>
<tr>
<td>Living in parent’s house</td>
<td>0 (0.0%)</td>
<td>2 (3.8%)</td>
</tr>
<tr>
<td>Total</td>
<td>32 (100.0%)</td>
<td>52 (100.0%)</td>
</tr>
</tbody>
</table>

Source: Field Survey, 1997

We then found that both types of houses were usually constructed by skilled-workers (see Table 5). The owner of the house paid for the construction work and they usually worked as a team. A team consisted of 2 or 3 persons. One person was a carpenter (Indonesian: tukang) and the other person or persons were assistants (Indonesian: pembantu tukang). The work contract was usually done between the owner of the house and carpenter, and the carpenter would pay the helpers. The remaining houses were constructed by the owners themselves and their families. Those projects therefore constituted projects without paid laborers.

Table 5 Construction Process According to Worker Types

<table>
<thead>
<tr>
<th>Constructed by owner</th>
<th>Raft House</th>
<th>Pillar House</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constructed by skilled-workers</td>
<td>4 (40.0%)</td>
<td>6 (60.0%)</td>
</tr>
<tr>
<td>Total</td>
<td>10 (100.0%)</td>
<td>26 (100.0%)</td>
</tr>
</tbody>
</table>

Source: Field Survey, 1997

2.3 Growth of the Area

This investigation found that most raft houses (62.6%) and pillar houses (55.8%) were constructed between 1971-1990 (see Table 6). That may be caused by the rapid urbanization from rural areas. We noted that from 1961 to 1971, Palembang City had rate of growth in the industry sector of over 250% per year and a population rate of growth 5.1% (1954-1990) per year (see Graph. 1). For comparison, more recent population growth was 3.3% per year (1990-1994). We also found that the oldest raft house was constructed before 1940. That house constituted the only remaining raft house firstly occupied by Chinese. Based on historical facts, raft houses were first occupied by Chinese, and they were forbidden to live ashore. The reason given for this was that the rulers feared the danger of this population group settling permanently and expanding. The oldest pillar house in this area was also constructed before 1940. Differing from some Rumah Limas (A Traditional Palembang House), attaining the age of more than 100 years and occupied by noblemen, most of those pillar houses as well as the present raft houses constitute low income urban houses, that were occupied by migrants from the rural areas surrounding Palembang City.

Table 6 Year of Construction of Raft and Pillar Houses

<table>
<thead>
<tr>
<th>Year of Construction</th>
<th>Number of houses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raft House</td>
<td>Pillar House</td>
</tr>
<tr>
<td>1951-1960</td>
<td>5 (15.6%)</td>
</tr>
<tr>
<td>1961-1970</td>
<td>6 (18.8%)</td>
</tr>
<tr>
<td>1971-1980</td>
<td>14 (43.8%)</td>
</tr>
<tr>
<td>1981-1990</td>
<td>2 (6.3%)</td>
</tr>
<tr>
<td>Total</td>
<td>32 (100.0%)</td>
</tr>
</tbody>
</table>

Source: Field Survey, 1998

Graph 1 Population Growth of Palembang City

Together with the growth of house numbers in riverside areas, we found that the community in the area also built other facilities. In the early years (1951-1960) of pillar and raft houses in RT 10, Kelurahan 5 Ulu, the community built a small mosque for daily Islamic prayer. We noted that all inhabitants of RT 10 were Moslem. Present day inhabitants not only use the mosque for prayer activity but also for education of Islamic teaching (Indonesian: pengajian). We even found some students in an Islamic Institute as volunteers teaching Islamic studies to children at noon once a week. Differing from the situation of RT 10 Kelurahan 5 Ulu, inhabitants of RT 1 Kelurahan Kertapati did not build a mosque. They usually prayed together in a big mosque called K. Marogan Mosque located near the settlement.

For providing their daily needs, in 1970 an inhabitant of RT 10 Kelurahan 5 Ulu opened a stall selling daily goods such as soap, laundry soap, cooking spices, food and vegetables. In 1976 and 1987, two other inhabitants also made stalls. In RT 1 Kelurahan Kertapati, there were no inhabitants making stalls for daily goods, but there were two stalls for selling food. We noted there were
daily goods stalls located near the settlement. The growth of the area is also presented in Fig. 2.

3. The Improvement Process of Houses and Infrastructure
3.1 Improvement Process of the Houses

According to the condition of the building material28 this study found that 80.8% of pillar and 46.9% of raft houses were included in good and medium condition, and 19.2% of pillar and 53.1% of raft houses were included in bad and very bad condition (see Table 7).

We found that some inhabitants of raft and pillar houses have improved the building material of their houses. Approximately 50 bad rafted bamboo for foundation in a raft house were replaced

Table 7 Building Condition of Raft and Pillar Houses

<table>
<thead>
<tr>
<th>Condition of building material</th>
<th>Number of Houses</th>
<th>Pillar House</th>
<th>Raft House</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>9 (28.1%)</td>
<td>46.9%</td>
<td>22 (42.3%)</td>
</tr>
<tr>
<td>Medium</td>
<td>6 (18.3%)</td>
<td>29 (38.5%)</td>
<td></td>
</tr>
<tr>
<td>Bad</td>
<td>7 (21.9%)</td>
<td>9 (22.5%)</td>
<td>1 (1.9%)</td>
</tr>
<tr>
<td>Very bad</td>
<td>10 (31.2%)</td>
<td>1 (1.9%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>32 (100.0%)</td>
<td>52 (100.0%)</td>
<td></td>
</tr>
</tbody>
</table>


every year. The Palm Leaf for roofing also is always replaced every year. We found only 7 of 32 observed raft houses and 2 of 52 observed pillar houses still use Palm Leaf. In pillar houses we also found some inhabitants replaced their wooden floors and walls with permanently cemented floors and masonry for the WC, and guest rooms. We also found a pillar house replacing wooden pillar with concrete.

This investigation also found 3 raft houses and 9 pillar houses having extensions or modifications. There were 1 (33.3%) raft house having a horizontal extension and 2 (66.6%) raft houses having modifications of the house layout. There were no raft houses having vertical extensions. There were also 3 (33.3%) pillar houses having vertical extensions, 5 (55.6%) pillar houses with horizontal extensions and 1 (11.1%) pillar house with a modification.

About the inhabitant’s reasons for extension or modification, there are three reasons. For raft houses, widening the space for family (1 house), making a rental home (1 house) and making a working place (1 house). For pillar houses, widening the space for family (5 houses), making rental homes (3 houses) and widening the space for family and making a working place (1 house). The types of house extensions are presented in Table 8 and Fig. 3.

Table 8 Extension Type of Houses

<table>
<thead>
<tr>
<th>Type of extension</th>
<th>Reason of extension</th>
<th>Number of house</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical</td>
<td>For family</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td></td>
<td>For working place</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td></td>
<td>For rental room</td>
<td>1 (33.3%)</td>
</tr>
<tr>
<td></td>
<td>For family</td>
<td>1 (33.3%)</td>
</tr>
<tr>
<td></td>
<td>For working place</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td></td>
<td>For rental room</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td></td>
<td>For family</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td></td>
<td>For working place</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td></td>
<td>For family and work</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td></td>
<td>For rental room</td>
<td>2 (66.6%)</td>
</tr>
<tr>
<td></td>
<td>For working place</td>
<td>1 (33.3%)</td>
</tr>
</tbody>
</table>


We then found that there were 10 raft houses converted to pillar
houses. We recognized that average duration from start to stay in the raft houses until the change to pillar houses was 16.4 years, and the duration has become shorter since 1970 (see Table 9 and Graph 2). The high price of bamboo for raft foundations often constituted the reason why raft house inhabitants changed to pillar houses. We noted that price of bamboo in 1997 was 250% of that in 1992, while conversion cost of raft houses to pillar houses in 1990 was only 147.6% of that in 1980.

Most raft houses (88.8%) that were 16 years old were in bad and very bad condition (see Table 10). They constituted raft houses that have not yet been repaired or improved by the owners. In contrast, most raft houses converted to pillar houses were in good condition. We can say that conversion of raft house to pillar house constituted one method of house improvement.

3.2 Improvement of the Environmental Infrastructure

In term of environmental infrastructure such as wooden-pathways, the inhabitants of raft and pillar houses worked together (Indonesian: gotong royong) to construct it. They collected the money from community members for buying materials and then they worked in the time that the community had agreed to. We found that inhabitant’s awareness improving environmental infrastructure was high. We found most raft house (65.6%) and pillar house (75.0%) inhabitants said that community members should take the responsibility to maintain and improve their environmental infrastructure. For the same matter, we also found that 25.0% of raft and 23.1% of pillar house inhabitants said that community members and government should take the responsibility it (see Table 11).
4. Conclusion

This study found that most of the inhabitants of raft and pillar houses were people coming from other places. Most were migrants from other districts in the same province. They intended to live in the riverside area in order to be near workplaces. The greater part of them worked in the informal sector such as boat drivers, boat repairers and traders. Most raft house inhabitants got their houses by buying them, while most pillar house inhabitants got them by constructing. In term of construction method, most in both types of houses paid skilled-workers for constructing their houses. Mostly the houses were constructed between 1971-1990. This condition may relate to the high population rate of growth in Palembang City. Together with an increasing number of houses in the riverside area, the number of neighborhood facilities such as daily food stalls made by inhabitants also increased.

There were three types of house improvement processes in this settlement. First, improving of building materials, second extension of house or modification of the house layout, and third conversion of raft houses to pillar houses.

There were differences of extension or modification conditions between raft and pillar houses. Most raft houses had modifications of house layout, while most pillar houses had horizontal and vertical extensions. There were no vertical extensions in raft houses. Reasons for extension or modification in both houses were mostly because of the need of space for family, but we noted that making rental homes or working rooms also constituted the reasons.

The duration from stay in raft houses until the conversion of raft houses to pillar houses decreased. Bamboo was converted the common reason why raft houses were converted to pillar houses.

Mostly raft and pillar house inhabitants said that community members should take responsibility to improve and maintain environmental infrastructure. Approximate one-fourth of inhabitants also said that community members and government should take responsibility it.

Based on all the findings, this study recognized that improving the houses and environmental infrastructure are a part of habitual activities for the inhabitants in riverside settlement. There was also an indication of some inhabitants hope, that the government should be involved in the improvement process in this area.

Notes

*1 Ref: 8) page 210
*2 Raft houses mean one type of traditional Palembang house on river water. Total number of raft houses is approximately 0.1% of house number in Palembang City.
*3 Pillar houses are houses built on piles. We estimate approximately 50.0% of houses in Palembang City are pillar houses including pillar houses distributed in areas along the Musi River.
*4 and *11 RT is rukun tetangga (Indonesian). In the Indonesian urban administration, RT is the smallest neighborhood unit in kelurahan. The meaning of kelurahan is as the same as urban village. Approximately one RT consists of 40 households.
*6 Ref: 17)
*7 Ref: 14 (Ref)
*8 Ref: 4)
*9 Ref: 5
*10 Ref: 16
*11 Ref: 1
*12 Ref: 13
*13 Ref: 7
*14 Ref: 15
*15 Ref: 2
*16 Ref: 2
*17 Ref: 3
*18 Ref: 15
*19 Ref: 15
*20 Ref: 2
*21 Ref: 2
*22 Ref: 2
*23 Ref: 3
*26 Ref: 6
*27 Ref: 15
*28 Ref: 10
*29 In this investigation, authors made the category of houses based on building material condition i.e.: good = 0-10% of house-building material decayed; medium = 11%-30% of house-building material decayed; bad = 31%-50% of house-building material decayed; very bad = 50% <= of house-building material decayed.

References

11) Sarwadi, Ahmad, Tohiguchi, Mamoru and Hashimoto, Seiyu, "A Typological Analysis of Houses and People-Gathering Places in An Urban Riverside Settlement,}
1. 研究の背景と目的・方法

インドネシア・スマトラ島パルアンバン市ムシン川の川辺居住地は、住民及び
住民環境の改善に直面している。パルアンバン市のスラムの41.9%は、
ムシン川流域の33の村落に存在している。しかし、当市の地方政府は、こ
の地域を水辺の観光地を計画しており、目下、この地域が抱え
る問題の解決策を検討中である。

本研究は、インドネシアにおける川辺居住地についての知識の向上、
及びムシン川の都市川辺居住地に関する、問題の解決に資する具体的な情
報の提供を目的としており、居住地の改善計画における原理の考察を念
頭に置きつつ、居住地の改善プロセスに焦点を当てている。

住民は主としてムシン川とクラタム川の合流点、及びムシン川とオラン
川の合流点に位置している。（表1）調査地域については、RT1 カルラハ
ン、カルラパティ地域（ムシン川とオラン川の合流点付近）、RT10 カルラハ
ン、5ウェル地域（ムシン川とクラタム川の合流点付近）を選定した。1997、
1998、2000年に現地調査を実施した。

当地域の世帯主としては家族構成員に対してインタビューを実施した。
質問内容は、住居歴、家族の歴史、住居の建設年、居住者による生
活の改善プロセスに関するものであった。そして住民及び高床居住の
実態・ステータスを行い、住居の現在の状態を記録した。この調査の結果
から、住民と高床居住の両者に関して、居住の成長プロセスをただと
ともに、居住者の改善プロセスの特徴を捉えることができた。加えて、居
住地における環境インフラストラクチャーの改善プロセスの特化化も行っ
ている。

2. 川辺居住地域の成長プロセス

住民居住者の87.5％、高床居住者の61.5％が河川地域出身である。
（表1）他地域から当該川辺地域への転入者の中で、住民居住者の
90.6%、高床居住者の61.5%が、勤務地に近いことを転入の理由
に挙げている。住民居住者の81.2%，高床居住者の57.7%が
インフラの整備を目的とする（砂大工、修繕工、船の運転手、商業者
など）として働いている。

住民居住者の65.5%は、購入行為によって住居を獲得し、31.3%は
自ら建築し、3.1%は賃貸している。これに対し、高床居住に関しては、
21.5%のみが購入によって住居を獲得し、50.0%は自ら建築し、13.5%は
両親から継続し、11.5%は賃貸し、そして3.8%は両親所有の住居に居
住している。通常、両者とも熟練労働者によって建設されている。（表11）

住民居住者の62.6%と高床居住者の55.8%は、1971-1990年の間に建築され
た。（表11）これは当時の未発展地域における急速な都市化に起因するもの
である。パルアンバン市の工業部門は年 250%を超える成長（1961-1971年）を
遂げ、人口も年 5.1%（1954-1990年）の成長を記録した。因みに近
年の人口成長率は年 3.3%である。（1990-1994年）

初期（1951-1960年）において、RT1 カルラハン、5ウェル地域では、共同
体により小さなモスクが建設された。1970年、RT1 カルラハン、5ウェル地域
の一居住者が、石塀、洗剤、調味料、食料、野菜などを販売する日用品
店を開店した。1976年と1987年には、他の2つの居住者が店舗を構え
た。RT1 カルラハン、カルラパティ地域では、日用品を販売する店舗は存
在しなかったが、食料を販売する店舗は2つ存在した。日用品店は居住
地付近に位置していた。

3. 住民及びインフラストラクチャーの改善プロセス

一つの住居では、数年および50本の粗末な土台用の竹材が取り替
えられている。屋根葺き材である竹の葉も同様に取り替えられ、観
察した32の住居の内7つが、そして52の高床住居の内2つが、未だシ
ュロの葉を用いている。高床住居においては、数年の住居の元来の木
造の床のコンクリート床にしていた。また、WC 及び浴室にコンクリ
ートが用いられていた。一つの高床住居では、木造の柱がコンクリート
に置き換えられていた。

一つの住居（33%）が横方向に増築し、二つないしの住居（66.6%）が改
築していた。住居の中で縦方向に増築している住居は存在しなかった。

高床住居については、3つ（33.3%）が縦方向に増築し、5つ（55.6%）が
横方向に増築し、1つ（11.1%）が改築していた。

増築、改築が行われるには3つの理由がある。すなわち、家族のための
居住空間の拡大、賃貸居住者や仕事場の構築である。居住者による増築、
改築の主な理由は、住民と高床居住の両者においても家族のための
居住条件の改善である。（表2, 3）

住民あるいは高床住居において転換するまでの期間は減少しており、平均で
16.4年間である。（表9, 2) 住居の床に用いられる竹の価格の高
騰、住民住居から高床住居への転換の主な理由である。

住民と高床居住の居住者は相互扶助（インドネシア語では、gotong
royongと言う）で、木製の小道具などの環境インフラストラクチャーを整
備する。彼らは共同体の構成員から資材購入のための資金を集め、そして時
間を合わせて作業する。住民居住者の65.6％、高床住居の居住者の
75.0％、共同体の構成員は環境インフラストラクチャーの維持と改善
に関して責任を持つべきであると考えており、住民居住者の25.0％、
高床住居の居住者の23.1％が、共同体の構成員と政府が環境インフラ
ストラクチャーの維持と改良に関して責任を持つべきであると考えている。

（表11）

4. 結論

本研究では、居住者は住居のみならず環境インフラストラクチャーを改
善するとともに、小さなモスクや雑貨店などの近隣施設をも供給すると
いうことが示された。加えて、住居の改善には三種類あることを明らかにし
た。即ち、住居の建設資材の改善、増築及び改築、住民住居から高床住
居への転換である。住民及び環境インフラストラクチャーの改善は、当該
居住地における住居者の習慣的行為であることが示された。また、本研
究では、居住者が、地域改善プロセスにおいて、政府の関与を望んでいる
ことも明らかにしている。

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