The Informal Area Management in Slum Settlement:

Case Study in Cikini Kramat Area, Jakarta, Indonesia

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Abstract:

As the urban population growth accelerates, Jakarta is experiencing severe housing shortage. This condition breeds slum settlement as solutions to provide affordable shelters for the under privileged. Due to all disadvantages, the slum residents constitute informal area management for governing self-help housing and basic services. Our research area is located in Cikini Kramat area, Central Jakarta. It is a high-density slum settlement where 5.000 people reside in 4 hectares coverage area. This research aims to clarify the failure of land titling program and to reveal the existence of informal area management and building control.

The research occurred simultaneously with our participation in public facilities provision with the Cikini Kramat Area community since 2011. We applied Participatory Action Research integrated with Participatory Design Method to discover what kind of informal management and which project stage would be discussed during the process. We held interviews to 10 (ten) local leaders to validate the information about the history and the informal area management. As for the land and building ownership, we interviewed 63 respondents.

Cikini Kramat area was squatted after railways overlaid project in 1960s. In order to obtain the right, the owner must register the land to the government. The expensive cost and the obligation to pay land tax that following the registration process are main reasons the land registration and titling programs remains irrefutable obstacle at slum settlement.

The community compromises to create informal building control to create harmonious built environment. It has been prescribed by local leaders who own building construction skills and knowledge. It accommodates the spatial needs for domestic activities in the interior and social activities in the exterior to occur and avoiding spatial conflict among residents.

Furthermore we learned that it is important for architect to identify and apply critically those unwritten guidelines, in order to create well-suited architectural work without compromising the building safety aspects. The shared knowledge about informal area management with local residents and professionals and community's active involvement in each design and construction phase would be indispensable to improve living condition in urban slum settlement.

Keywords:

urban, slum, informal, land titling, building code

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I.   INTRODUCTION

As the urban population growth accelerates, Jakarta is experiencing severe housing shortage approximately 70.000 units each year (Widoyoko, 2007: 34). Meanwhile the government and private sector are only able to supply around 20% of annual new housing demand (Yusak, 2012). This condition breeds slum settlement as spatial solutions (Roy, 2011) to provide affordable shelters for the under priviledged (Gough, 2010). The irrepressible urban development and population growth has created numerous urban problems, which the proliferation of informal settlement is one of them.

Informal settlements have been formed mainly because of the inability of city governments to plan and provide affordable housing for the low-income segments of the urban population (Idawarni et.al., 2011). The size of informal settlements in Indonesia, grew from 54.000 hectares in 2004 to 57.800 hectares in 2009. Unfortunately, the government is only able to improve 655 hectares from 2010-2014 (Aziz, 2013). This limited capability leads to the discrepancy of housing provision and needs that reached 5,93 millions units every year (Akil, 2004). Therefore, informal settlements should be considered as housing solution for this low-income urban population (Hao, et al., 2011).

Occasionally the term 'informal' is used as a synonym for "illegal." While the term "informality" refers to various social, economic or cultural activities (Meagher, 2007) and housing and settlement (Hansen & Vaa, 2004) which are unregulated by the state or formal institutions.

The original establishment of informal settlements is often based on prior social relationships among the migrants in the existing squatters as explained by several studies in developing countries (Hossain, 2001). They are internally heterogeneous in terms of the occupations of residents and homes of wide range of economic activity (Gilbert, 1992). Many of the economic opportunities of cities in developing countries, particularly in the informal sector of self-employed small-scale enterprises as survival strategies in urban areas (Meikle, 2002).

This research aims to clarify the failure of land titling program and reveal the existence of informal area management and building control in kampung Cikini Kramat Central Jakarta.

II.   PARTICIPATORY ACTION RESEARCH

The Pegangsaan District is a home of 21.261 people in 0.98 km^2 area coverage. It accomodates 10.780 families in 104 RT (*Rukun Tetangga* or Community Association). The research took place in Cikini Kramat Area, one of slum settlements in Pegangsaan District, where our community engagement programs were located.

The research occured simultaneously with our participation in public facilities provision with the Cikini Kramat Area community since 2011 consisted of MCK (communal toilet), PAUD (informal pre-school) and Rumah Pintar (small public library). We applied Participatory Action Research integrated with Participatory Design Method to discover what kind of informal management and which project stage would be discussed during the process. We held several interviews to our informants of 10 respondents, to validate the information about the history, and the informal area management, for the case of Communal Toilet, informal pre-school and small public library from February-April 2011, 2012 and 2013 respectfully.

During our community engagement programs, we interviewed 63 residents of RW 1 which consist: 10 residents of RT 2, 10 residents of RT 7, 8 residents of RT 11, 9 residents of RT 15, 8 residents of RT 6, and 18 residents of RT 13, to share the information about the problems of land and building ownerships they encounter.

Our investigation relied on respondents willingness to participate, because the community does not easily trust the outsider. They are suspicious and very cautious to distribute information about land and building ownership because the settlement has been surrounded by eviction threats for almost 40 years. Therefore, we conducted random sampling techniques to gather information regarding this sensitive issue. We interviewed 10 respondents each from RT 2 and 7 respectively with our community engagement programs in 2011-2013. Afterwards, those respondents recommended other respondents who they know well from RT 6, 12, 13 and 15. Based on mutual trust, we managed to gather land and building ownership information from those RTs in 2014.

This method is different because it owns intensive connection between researching process and changing fact activities. The engagement with the community is not just a process of forming a relationship that allows us to entwine dialogue but achieved through the method of participant observation, interviews and analytical evaluation should cover the period of research, design and ideally construction. Although it has been developing, the method consists 5 (five) main stages to create intense engagement of community in design and research activities simultaneosly.

Figure-1. The area coverage of Cikini Kramat Ampiun (red line) and location of community engangement programs in 2011-2013

1. *Workshop*, as a meeting session with the community to identify the issue and discuss several possible solutions. We conducted this stage in February 2011 for communal sanitation project, February 2012 for informal pre-school project and February 2013 for AFP;

2. *Studies of Work*, as collecting and analyzing previous studies which useful for formulating design ideas. During this stage, we also gathered information from local leaders and related publications about the history of Cikini Ampiun Kramat settlement. In March 2011, we collected many studies from internet, relating to sustainable public toilet projects. While in March 2012, we acquired tectonic knowledge on how to apply reuse materials. For AFP in March 2013, we studied the possibility of providing natural lighting and ventilation to create healthy and sustainable small building;

3. *Mock-ups*, is the stage where we created models as medium for intense discussion with the community. The model is made based on the workshop results and our conclusion of studies of works. This stage is very crucial, because it generates many hidden information which untold before. In this case, we managed to unveil all the unwritten informal building codes during discussion with the community. We held this stage in April 2011 for communal sanitation project, April 2012 for informal pre-school project and April 2013 for AFP;

4. *Prototyping*, is where we improved design ideas based on the results of mock-up process. In this stage, we held numerous discussions with the local leaders to reach final

design agreement which considered suitable to solve the spatial issues. We delivered and accomplished this stage within two weeks;

5. *Scenario Construction*, is the stage where we developed the prototype to construction drawing which inscribed clear instruction for every construction stage. We also provided the construction schedule and budget plans, which approved by our team and community. We finished this stage in mid May 2011 for communal sanitation project, mid May 2012 for informal pre-school project and mid May 2013 for AFP.
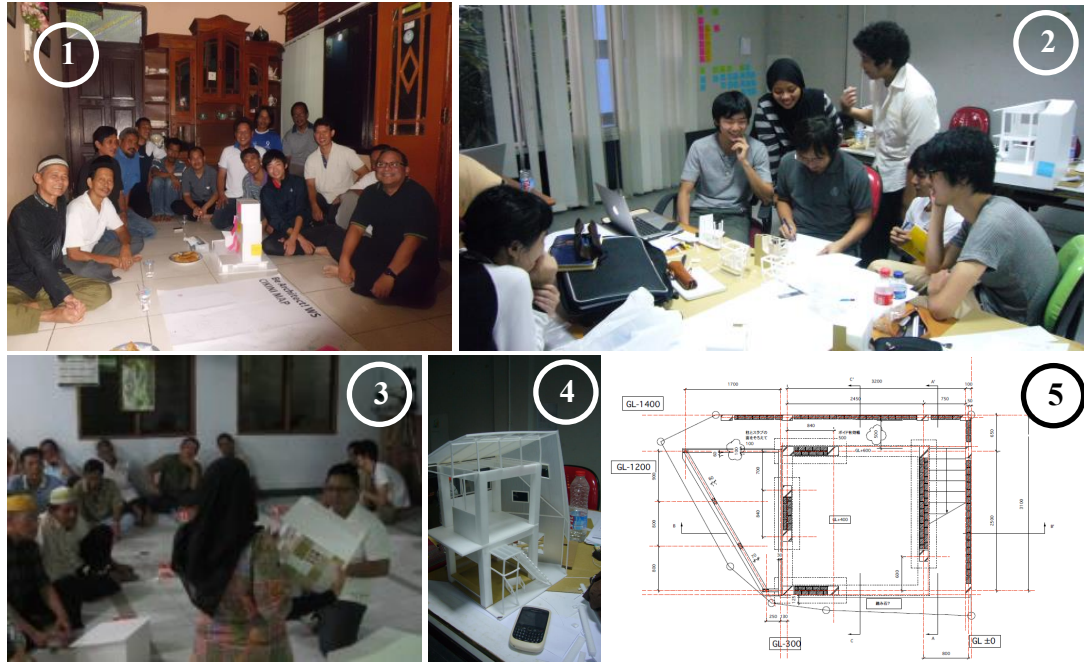

Figure-2. The five stage are: (1)The workshop with residents, (2) studies of work, (3) The mock-up stage, (4) The prototype stage and (5) Scenario Construction Stage
Source: Personal Documentation (2013)

In 2011, we have designed and rehabilitated communal sanitation facility by implementing community participation method and using several recycle materials. We also involved all parts of community, including children. This method would develop sense of belonging among the community to maintain this vital communal facility. Moreover, we discovered various unique design details based on informal building codes that solved the community's spatial problems by applying this particular method.

We continued to apply this method in 2012, where we rehabilitated the informal pre-school building. Although it did not provide any distinctive design details, but it allows us to facilitate complicated deliberations, especially on site election and building programs. Through intense discussions, we were able to apprehend the informal building codes. It also fostered sense of belonging, especially local residents and students who participate in determining and painting the color of interior and funitures.

Along with the design and construction process of After Fire Project, we conducted this research from February-June 2013. In this research, we applied qualitative approach with the same method in order to understand the land provision for public facility and the informal building codes that must be applied.

In 2011 and 2013, we interviewed 5 (five) community's prominent figures as our key informants such as Pak Khalik (Head of RW 1), Mr. Sigit (Head of RT 7) along with 3 well

respected local leaders: Mr. Ilung, Mr. Duding and Mr. Sapto. We also interviewed 5 (five) other people in order to validate the information about the land and building ownership, informal land provision and building codes in RT 7. The additional respondents are: Mr. Toha, Mr. Sukadi, Mr. Udin, Mr. Sumali and Mr. Yarso, who also inhabit the settlement for more than 15 years and have different occupation and cultural background. Therefore all the respondents are capable to deliver valid historical information on the development of this informal settlement, especially in RT 7. While in 2012, we interviewed Mr. Syamsu (Head of RW 1), Mr. Gatot (Head of RT 2), Mrs. Tini (Principle of Informal Pre-School), and Mr. Dayat (Secretary of RW 1) as local leaders. We also interviewed 6 (six) more respondents randomly to validate the information about the land and building ownership and informal land provision.

In order to understand comprehensively about this settlement, we begin with our investigation on history of Cikini Kramat settlement from various literatures. It is very useful to disclose the physical transformation from the prestigous subdistrict in colonial era and informal settlement in the early independent era due to rapid acceleration of urbanization.

The problem of informal settlement is aggravated because of the complicated land ownership regulations, the spatial planning mismatch and building permit acquisition. Therefore, we also examine the existing regulations which implicate the informal building codes in this settlement.

III. THE PHYSICAL TRANSFORMATION OF CIKINI KRAMAT AREA
III.1 The History of Slum Settlement in Cikini Kramat Area

In the end of 18th century, Dutch colonial government developed Weltervreden area in order to accomodate the new settlement for Batavia's citizens due to rapid population growth. This city expansion induced more people to build in the southern side of the settlement, to Gondangdia and Menteng.

Menteng area was derived from the name of prominent colonial official in the beginning of 19th century, Van Muntinghe, as the first land owner of this area (Abeyasekere, 1987). In order to prevent uncontrollable city expansion, the government bought the land in Menteng area approximately 10 km^2 from 1908 until 1927.

Menteng settlement was assigned for elite class of Dutch and high status Indonesian citizens. It was designed by P.A.J. Mooijen and modified by F.J. Kubatz to implemented garden city concept from 1910 until 1930s. It was also designated to separate the elite class from the poor and lower status society (Surjomihardjo, 1977).

Since 1887, *Bataviasche Oossterpoorweg Maathappij* (BOS), the Dutch train company, also developed train transportation system to connect the whole city. They built train stations, railways and steel bridges to passed over the Ciliwung River to accomodate horse trem in 1869, steam trem in 1881 and electric trem in 1899. This system was not only accommodate the transporation need for citizen but also to accelerated the distribution of trading commodity from Jatinegara to Fish Market Harbour. The system comprised of 5 (five) major lanes and Menteng-Kramat-Jakarta Kota track passed through Cikini Kramat Ampiun area. The main boulevard of the Cikini Kramat Ampiun informal settlement was one of the railway track of train transportation system.

After losing the war against Japan, the Dutch citizens gradually left Jakarta. It gave opportunity for Jakarta's elite society to occupied the abandoned colonial houses in Menteng subdistrict. Unfortunately, the separation of elite estates and the poor settlement in Menteng was erased in Japanese occupation in 1940s.

The poor was permitted and ordered to plant crops for war's logistic without considering land ownership and built self-help housing (Sedyawati, 1987: 98-100). Since then, migrants from Cirebon, Bogor, Pekalongan, Bandung, Banyumas and other regions squatted Jakarta to participate the program (Kementerian Penerangan Republik Indonesia, 1952: 295-296).

This policy grew shanty towns in the early independence era along the Ciliwung River (Lubis, 2008: 64) and created social and environmental problems (Purwanto, 2008: 255). The monumental projects in this era accelerated swift urbanization and created housing problems due to rapid population growth (Suparlan, 1984: 231). Although the famous Jakarta Governor Ali Sadikin tried to solve this problem by creating 20 years masterplan from 1965-1985, the urbanization was already irrepressible. The informal settlements has spread out from Tanjung Priok, Senen, Salemba, Gambir, Kebon Kacang, Pedurenan, Raden Saleh, Karanganyar, Tanah Sereal, Kramat, Gunung Sahari, Tanah Abang, Krekot Bunder, Pasar Baru, Kampung Cideng, Rawa Galur also along the railways and Ciliwung River (Suparlan, 1984: 249).

In 1960's President Soekarno closed down the trem service because it is considered not feasible to accomodate the overgrow city population. The railways structure was not disassembled and overlayed with asphalt to produce pedestrian and vehicular street also decrease government's expenditure.

According to the prominent leaders, Cikini Kramat Ampiun area has been squatted after railways overlayed project in 1960s. Most of them were the traders in Cikini Market, which built in 1962 to serve the basic needs of the Menteng elite society. This high density slum settlement was divided into 16 RTs in 1960s. In 1980s, When Cikini area emerged as bussiness district in 1980s, rapid modern development turned 5 RTs into commercial and public buildings, leaves only 11 RTs in the area.

Now, there are approximately 5.000 people live in 4 hectares in Cikini Kramat area. Based on 2010 population data, there are 256 residents in 71 families were living in RT 2 and 364 residents in 94 families in RT 7. Unfortunately we cannot find valid population data of RT 6, 12, 13 and 15 because each head of RT did not arrange the documents properly.

III.2   The Rise and Fall of Slum Alleviation Programs in Indonesia

The local government has been producing numerous slum alleviation program in this particular area since 1970s, from evictions to physical improvement. Unfortunately, those programs have never been executed for various reasons. The prominent leaders believe this settlement is guarded by several political parties because it provides loyal votes for them. During several political campaigns, several parties provides not just financial and healthcare aid for community but also political will and promise to keep the eviction program away from this neighborhood. In exchange, the community must support and give votes to the political parties.

The interest in slum settlements has been growing and shifted many urban policies paradigmes (Berry, 2006) from eviction to enabling approach (UN-Habitat, 2009). This shifting paradigm is projected through the prominent slum rehabilitation program in Indonesia, known as Kampung Improvement Program (KIP).

The basic goal of KIP was to provide basic level of services and to improve physical infrastructure through community involvement (Silas, 2010). It is considered as one of the best practice on slum upgrading in the world because it was was then supported by the community (UN-Habitat, 2012). This program has developed community's self-awareness and empowerment by encouraging them to renovate and build their houses with the improvement

and provision of affordable infrastructure and facilities. Unfortunately, KIP is unsustainable because the maintenance program depends so much on government budget. It demonstrates that physical improvement program will not sustain without economic empowerment of community.

This approach also invites three major critiques. First, the absence of state intervention would lead to more autonomy for low-income groups. However there are not many choices available because for the majority is poor residents (Gilbert, 1992). Second, there were number of questions, but little elaboration, on how to implement and institutionally support upgrading (Ward, 1982). While the third, it was precipitant planning that abandon the beneficiary's ideas which leads to lack of ownership and reluctance to pay for improved services (Gulyani & Bassett, 2007).

In order to develop sense of ownership, from the early 1990s, ensuring security of tenure is considered as the precise method to improve the informal settlements. It assumes that the residents of informal settlements will undertake home improvements if they will not be evicted in any time (UN-Habitat, 2004). The land registration and titling ensures documentation of all attributes surrounding the land, adequate protection of rights and interests in land is guaranteed and this increases productivity (de Soto, 1989). The sense of ownership would encourage the residents to utilise effectively the land and resources in order to improve their living quality (van Asperen & Zevenbergen, 2007).

IV.   LAND OWNERSHIP SITUATION IN CIKINI KRAMAT AREA
IV.1   Land Administration in Indonesia

In 1960, Indonesia government enacted Agrarian Act 5/1960 to allows a complex system of land administration that accommodate western style systems and the traditional unwritten laws based on customary rights to land. It allows Private Conveyancing and the Registration of Deeds. Private conveyancing is not regulated, but still accepted by the courts as an informal, but not illegal, transfer. This is based on the legal principle that the title is transferred at the time of payment in cash, registered or not. The passing of the documents agreeing to the transfer is done in private, usually witnessed by two persons. While the system that is formally adopted is the Registration of Deeds. A copy of all agreements that affect the ownership and possession of the land must be registered at the Land Office (Heryani & Grant, 2004).

This complicated system also allows buildings are not legally part of the land. It is because land ownership is individual and not commercial, therefore it must be a separate title for commercial buildings. Civil law permits a separate tenure whereby one person's building can exist on another's land. This hierarchy of rights, uniquely linked to the use of land, has blurred the boundary between land administration and land management (Heryani & Grant, 2004).

This usurpation did not automatically give the right of land ownership to this community. Until now, the most of the residents here rely on the contract of sale or simple receipt as the only proof of land ownership. Unfortunately, those proofs are not sufficient to give the land buyer the right of land ownership (Widjaja & Widjaja, 2003: 27). In order to obtain the right, the owner must register the land to the government as suggested in Agrarian Act 5/1960 and Government Regulation 24/1997 about Land Registration. It is important to avoid land ownership dispute which obstruct the city development process (Thalib, 1985:19).

The regulation suggests the land owner may register his or her land with minimum 20 years possession also supported by reliable and undisputed proofs. Therefore it also facilitate

the unregistered costumary land which does not own formal document of ownership (Lubis & Lubis, 2010: 144). Unfortunately, the applicant must meet more requirements based on Agrarian State Ministrial Decree 9/1999 and Government Regulation 16/2004 Article 13 such as land use planning, tax payment receipt, land status and building permit (Harsono, 2003: 78).

IV.2   Land and Building Ownership in Cikini Kramat Area

During our community engagement programs, I interviewed 63 residents of RW 1which consist: 10 residents of RT 2, 10 residents of RT 7, 8 residents of RT 12, 9 residents of RT 15, 8 residents of RT 6 and 18 residents of RT 13, to share the information about the problems of land and building rights they encounter.
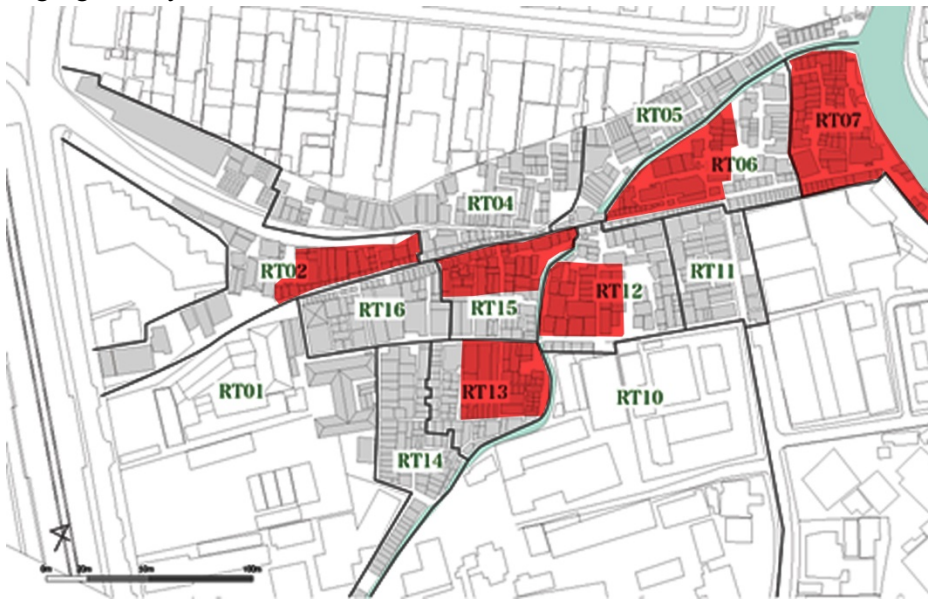

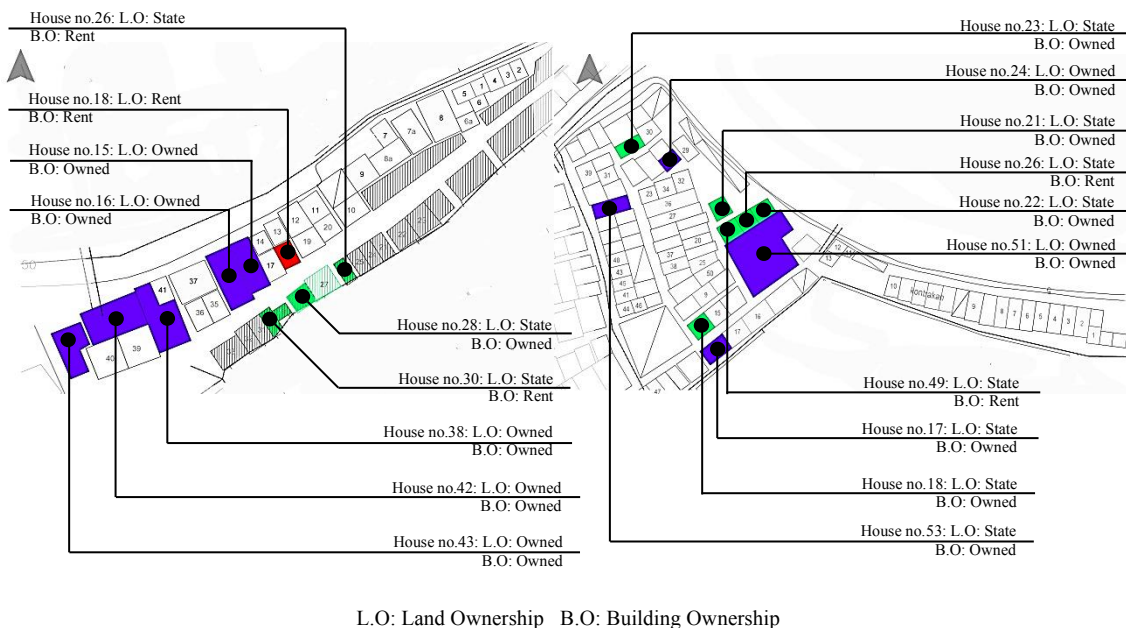Figure-3. The Location of 6 RTs in Cikini Kramat Area (red)

L.O: Land Ownership   B.O: Building Ownership

Figure-4. The Map of Land and Building Ownership in RT 2 (left) and RT 7 (right)
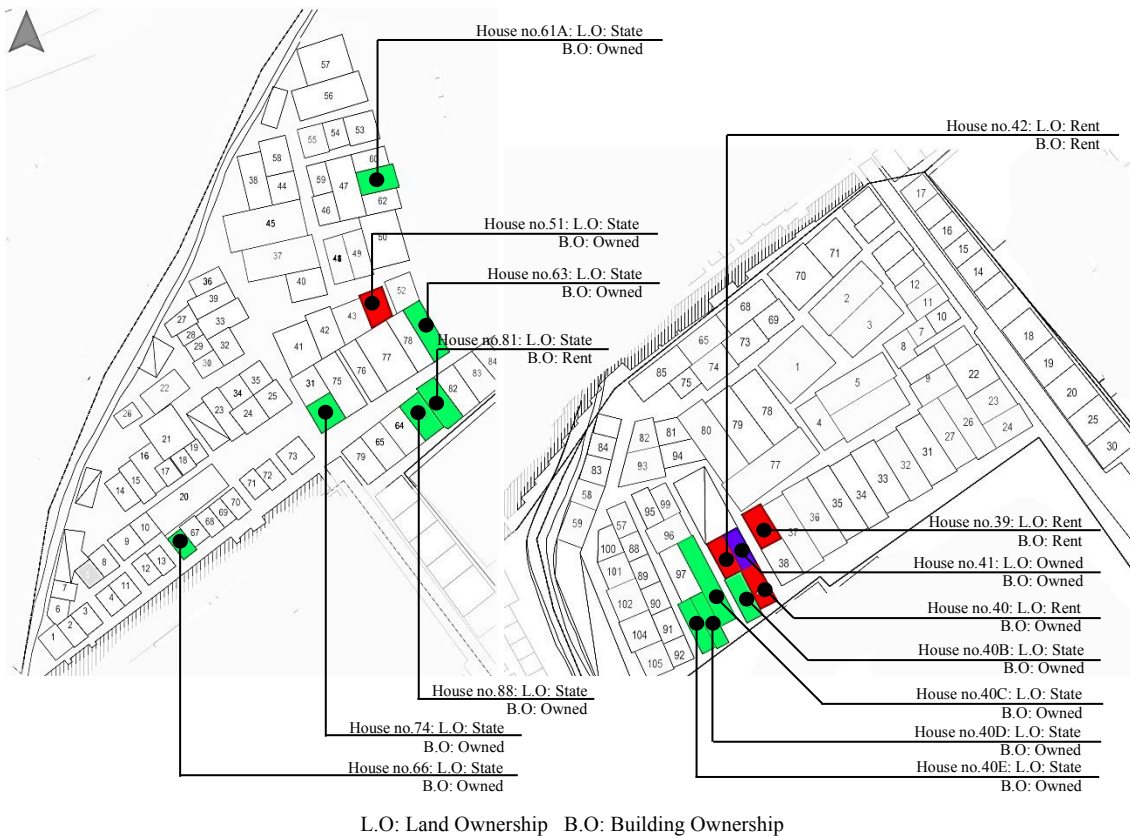Source: Author's survey in 2011-2014

L.O: Land Ownership   B.O: Building Ownership

Figure-5. The Map of Land and Building Ownership in RT 6 (left) and RT 11 (right)
Source: Author's survey in 2011-2014

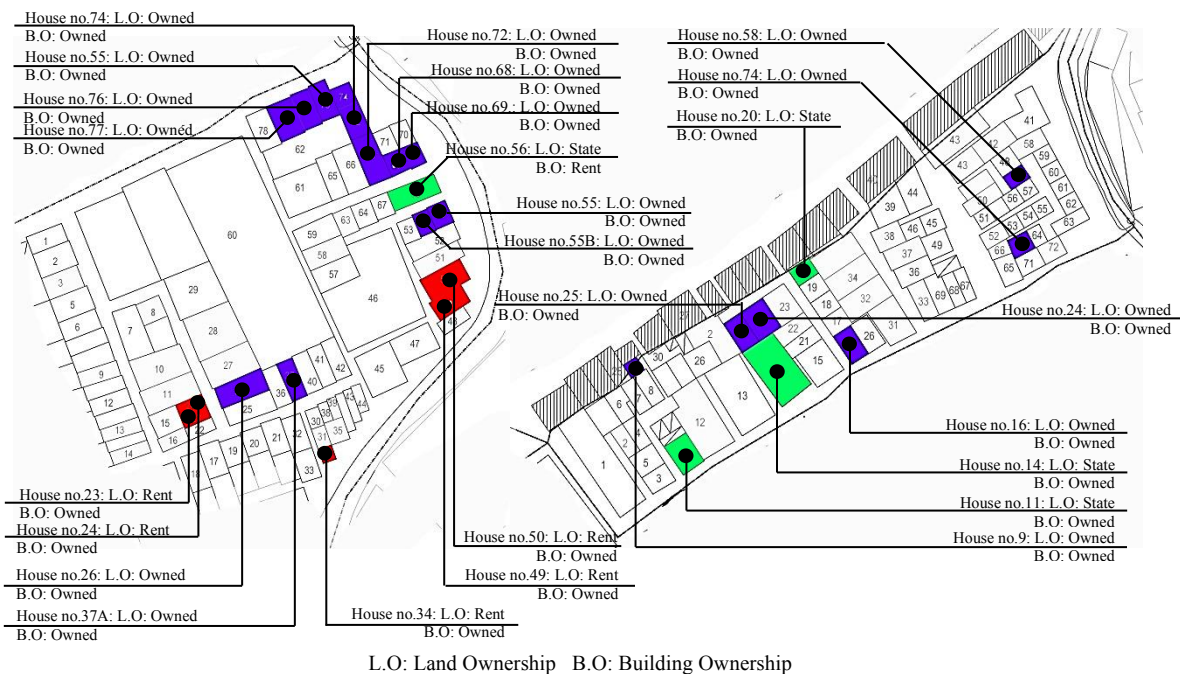L.O: Land Ownership B.O: Building Ownership

Figure-6. The Map of Land and Building Ownership in RT 13 (left) and RT 15 (right)
Source: Author's survey in 2011-2014

We found 77,77% of total respondents claimed they already occupy the land more than 20 years. It means that they are entitled to register their land to the government and claim it legally, according to Agrarian Act 5/1960. It also gave us advantage because most of respondents have adequate knowledge, not only of the development of this informal settlement, but also reasons of refusal to participate in land registration and certification program.

Almost half of overall respondents (44,44%) affirms the ownership of land. Unfortunately, those affirmations based on contract of sale, which is cannot be regard as formal ownership for private right. It entails most of the respondents claimed they own the land without formal legal certification. We found 46 respondents (73,02%) admited the absence of formal land ownership.
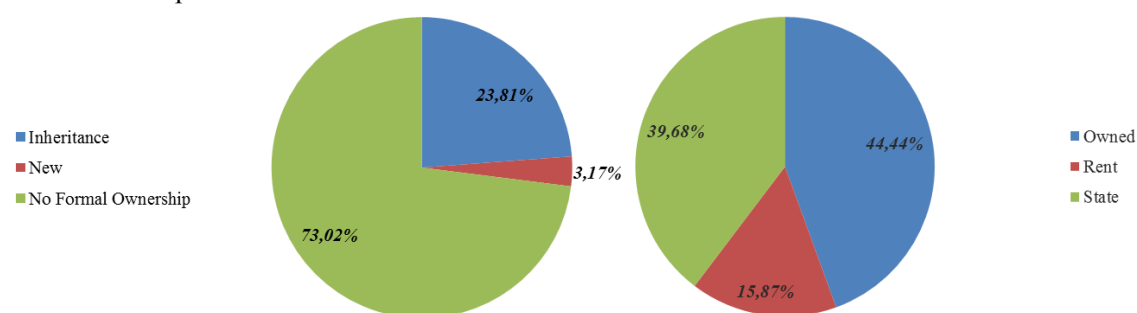

Figure-7. The Source (left) and Type of Land Ownership (right) in Cikini Kramat Area
Source: Author's survey in 2011-2014

Moreover some of the respondents (23,81%) gained the land ownership through inheritance system. They obtained the ownership based on hereditary law which valid throughout Indonesia. This law is based on traditional and religion law which are considered as important as state law in Indonesia. This is the reason why most of respondents are reluctant to register and certify their land because they regard the hereditary law is as valid as agrarian law.

We identified small number of respondents (3,17%) participated in land registration and certification. They asserted the registered and certified land will increase land value which brings them fortune in the future when they decide to sell it. It explains the use of land registeration and certification program for resident, is to increase land value, not only securing their tenures. The certified land can be sold according to the market price in the area. Usually land buyer refuses to purchase uncertified land because the high risk of fraud and low-level of secure tenure. Therefore, the owners volitionally register and certify their lands although they need to spend more expenses and time.

In our opinion, this consideration indicates the land registration and certification program has turned the land to commodity, instead of ensuring secure tenure of the residents. The upsurge land value and price persuade them to sell the land that enables them to buy bigger parcel of land in the suburbs in affordable price. We may conclude that the resident's motivation to register and participate the land is to leave the settlement for better living environment, rather than to stay in the settlement after achieving their secure tenure.

This program also requires extra cost and time which becomes an issue for the community. From 46 respondents who do not own formal land ownership, we identified 34,78% of respondents declined this program because it is very expensive. According to Government Regulation No. 13/2010, the applicant must comply several procedures which is very expensive for low-income community. Due to many application forms and various procedures the applicant must take, this program approximately requires 98 day to complete the procedures and

receive the land certificate, if all the required documents are completely fullfilled by the applicants. This condition compels 19,57% of respondents refuse to participate in the program. While 13,04% of respondents do not want to participate in the program, because realize they must pay land and building tax after they register and certificate their lands.
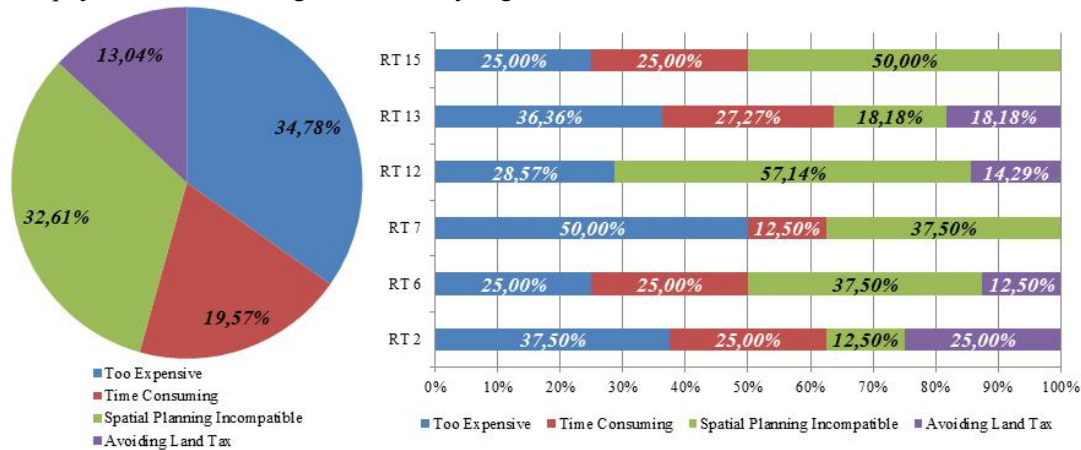

Figure-8. The Reasons of Land Titling Program's Failure in 6 RTs (left) and each RT (right) in
Cikini Kramat Area
Source: Author's survey in 2011-2014

Although the program will benefit the residents in terms of increasing land value, there are 32,61% of respondents admited they do not register their lands because the mismatch between land usage with the future city spatial planning. According to the land of spatial planning, the area is not designated for housing area, but commercial in year 2030. The residents realize that they reside in the land that is not compatible with the city spatial planning. They refuse to participate in land registration program because the government will deny the applications.
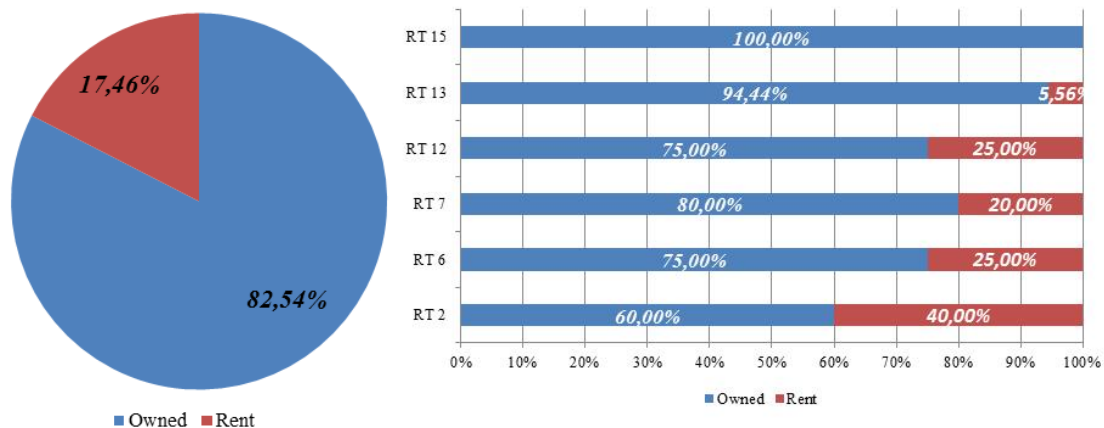

Figure-9. The Building Ownership in 6 RTs (left) and each RT (right) in Cikini Kramat Area
Source: Author's survey in 2011-2014

This finding shows that most the respondents refrained because the procedural requirements which are land compatibility with city spatial planning, cost and time of the program. Only small part of respondents are aware about the aggravating impact such as land and building tax they must comply after the program. It leads to obligation to pay land taxes that will burden household's annual expenditure. Land and building tax is automatically applied to

the owner, once the land is registered and the right of land ownership is certificated. Usually, they sell the land as soon as they receives certificates, because they cannot afford to pay the land and building tax and earn high profit from selling the land.

These findings confirm several researches in other developing countries, where land registation program finds some major obstructions. The poor is incapable to provide the extra costs (Bromley, 2008) and the possible taxes that may come from certification (Abdulai, 2006). These findings also demonstrate that without any economic improvement programs for urban slum residents is important to support land certification program.

Although they reside in illegal land, most of the respondents admitted they occupied state land but still building self-help permanent houses. Figure 7 shows that 73,02% of respondents do not have any formal land ownership, but as many as 82,54% of respondents live in the house that they build by themselves, with permanent structure. This condition implies the residents, although most of them reside without formal ownership, do not fear eviction threats.
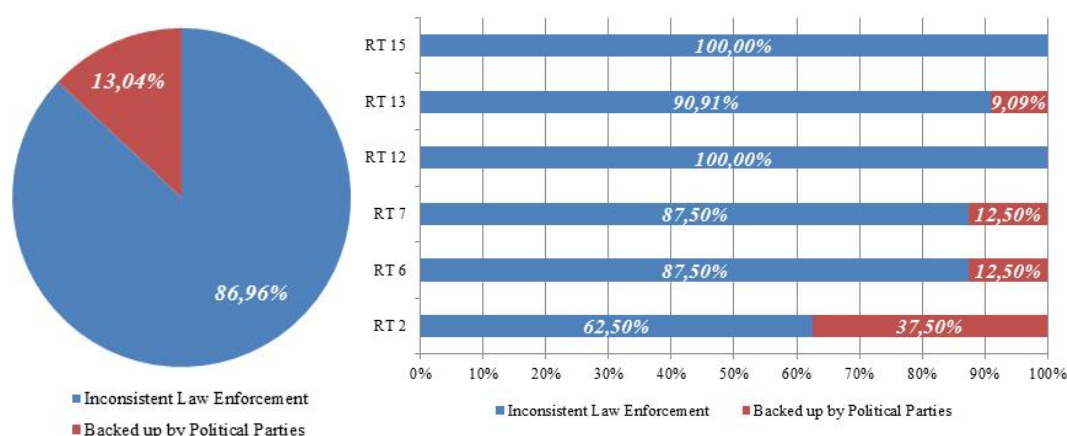

Figure-10. The Reasons Why Respondents Do Not Fear Eviction in 6 RTs (left) and each RT (right) in Cikini Kramat Area
Source: Author's survey in 2011-2014

Our finding shows 33 respondents (52,38%) do not fear eviction. They already hear plans of eviction since 1970s in order to execute the city spatial plan. Unfortunately, those plans are never executed. Due to the inconsistancy of law enforcement by local government, 86,96% from 33 respondents conclude that eviction threat remains only as rumor. While the rest, around 13,04% from 33 respondents, asserts that some political parties persuade the local government for not executing eviction. In return, they confirmed that the residents must give their votes to those political parties in every elections.

V.   THE INFORMAL BUILDING CODES
V.1   The Birth of Informal Building Codes in Cikini Kramat Area
The undeniable constraints to implement land tenure scheme occlude the residents of informal settlements to earn land legalization. Due to its illegality, the government denies the existence of informal settlements and refuse to apply the human resources and settlement improvement program.

In order to meet the need of basic services, they install basic urban services through both cooperative and individual enterprise (Mathey, 1997) without following the building codes and other governmental regulations (Cheema, 1993). The slum settlements are designed in the sense that purposeful changes are made to the physical environment through a series of choices

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among the available alternatives. The slum dwellers own the ability to manage their buildings materials, textures and the efficient use of space, in order to taking full advantage of the climate and the topographical obstacles.

It demonstrates that they create and apply self-organization system to arrange and improve their own settlement based on mutual agreement among them. Therefore, the informal settlements are chaotic and unorganized, is proven to be a myth (Mangin & Turner, 1968). Some scholars discovered that the informal settlements follow a gridiron pattern (de Soto, 1989) and simulate urban layouts (Baross & van der Linden, 1990).

Mr. Ilung, Mr. Duding and Mr. Khalik as senior residents of RT 7, who lives more than 30 years in the settlement, assert the disaffirmation compels the community to self-regulate their own settlement. As the prominent figures of the community, three of them recalled since 1980s they tried to arrange and compose the informal building regulations in order to enabled the community to provide the proper basic needs by themselves. Clean water is the primary resource that caused many conflicts in the community. As one of the most important basic needs, the local leaders must governed the usage of clean water and the location of black water installation in order to prevent pollution to the clean water sources.

The process of the informal building codes composition has been discussed and decided solely by the leaders, especially based on advices from Mr. Duding. All the residents of RT 7 acknowledge his knowledge and ability in building construction due to his rich experiences as high-skilled carpenter and building worker. Most of all houses and public facilities in RT 7 are made by him or through his thorough assistance. Because of this high-praised reputation, all the residents accept his advice and instruction regarding the construction of houses and public facilities in the area.

This informal regulation covers the land acquisition for the public facilities such as communal sanitation facilities, street and alleys, utility system such as electricity and drainage system, public worship and parking space, also building codes for individual house design and informal commercial space. It is made and revised over the years by the prominent figures and members of community according to the everchanging community's condition. Based on our interviews all the respondents acknowledge this informal regulation is usefull to create harmony among the 'excluded' citizens to live in vulnerable living space.

V.2 The Application of Informal Building Codes in Creating Building Envelope of After Fire Project

Although using various materials and has different measurement of land parcel, we manage to identify the pattern of building envelope in the neighborhood. In the ground floor, the owner put the exterior wall on the land perimeter which leaves it acts as land ownership boundary. It is apprehensible due to many activities that must be accomodated in a very small size land parcel. While in the second floor, the owner is allowed to create cantilever structure approximately 0,70-0,90 meter on top of the street in order to expand more interior space. This structure also benefits the community because it also acts as sun-shading and gives thermal comfort for members of community who deliver outdoor activities in the street.

This informal building code is contradictory with the formal regulation which compels open space provision with certain distance in front house to provide additional space for widening street and open green space for rainwater absortion. Unfortunately, this code is inapplicable due to adequate land shortage. This formal regulation will fails to provide adequate privacy and spatial needs in overcrowded houses, where 4-6 residents occupy land

approximately12-15 m^2. In order to increase house size, some of families must construct 3-storey house which impinged the maximum number of storey for residential building.

Figure-11. The Cantilever Structure in Cikini Kramat Ampiun Informal Settlement
Source: Personal Documentation (2013)

The building form accommodates more inhabitants by adding cantilevered constructions and new floors (Lin et al., 2011). The informal building permit is issued by the prominent leaders verbally with intense discussion with the other members of community, in order to prevent any future physical and social disturbances by the design. Because of this active involvement, the neighbors can utilize the front side of the house for their outdoor activities with house owner's consent. According to all respondents, sometimes the neighbors can use the front side of one's house to confabulate without asking permission, as long as do not cause any disturbances to the owner.
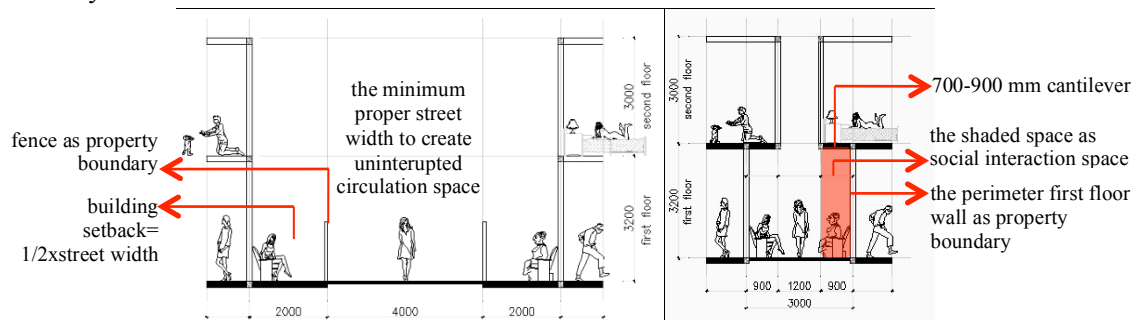

Figure-12. Sketch of the formal (left) guidelines based on Government regulation and informal (right) guidelines based on research finding.
Source: Personal Documentation (2013)

In the second meeting of After Fire Project, the community imposed informal building codes on the building envelope. Without the cantilevered structure in the second floor, the project will disturb the harmonious streetscape and facade along the main boulevard. This obedience to formal regulation will also decrease the size of interior floor and eliminate the continuation of shaded area on the street in front of the building. Even when there is involvement from outside of community on this project, they still insisted the building envelope must comply with the informal building codes.

Moreover, there is rule to determine the height of the cantilever from the street, which approximately 3,00-3,20 meters from the street surface. This certain measurement is not just to create harmonious elevation with the neighbor's house but also allows the trader's cart pass through the street underneath the cantilever. Therefore, this occupation of public space still put public interest in consideration. It makes this so-called spatial infringement is tolerable and acceptable.

The community compromises to create informal building control to create harmonious built environment. The informal building control has been prescribed by local leaders who owns building construction skills and knowledge. It governs the land acquisition for the public facilities and guidelines for individual house and commercial space. It is also manufactured not just to accommodate the spatial needs for domestic activities in the interior and social activities in the exterior to occur but also to avoid spatial conflict among residents.

The cantilevered two-storey house is one of the example. In the ground floor, the owner locates the exterior wall on the land perimeter that acts as land ownership boundary. In the second floor, the owner is allowed to create cantilever structure approximately 0,70-0,90 meter wide to expand interior space. This structure provides shaded street and thermal comfort for outdoor activities.The height of the cantilever from the street is approximately 3,00-3,20 meters from the street surface to create harmonious elevation with the neighbor's house and allows the trader's cart pass through the street underneath the cantilever.

This description demonstrates that the informal building codes is made not just to accomodate the proper activities in the interior individually but also in the exterior for social activities. If the formal regulation prioritizes the conformity of building envelope with the land parcel boundary in order to prevent spatial conflict, then the informal permit the infringement as long as the community agrees it will not create spatial conflict and can be used as shared communal and social space.

VI.   CONCLUSION

The irrepressible urbanization and the government's inability to provide decent house makes the informal settlement is the ultimate answer for the migrants to fulfill the shelter needs. Through intense discussion and several community meetings during the projects of participatory design, and supported by interviews conducted simultaneously, we could know that informal settlements such as Cikini Kramat area have emerged as nature of urban development.

Many experts argue land titling is one of the effective government interventions to alleviate poverty and informal settlement. However this research revealed that it enconteres major obstacles due to spatial mismatch with future land use planning, expensive land registration and certification procedure also incapability low-income community to pay building and land tax.

The exclusion of informal settlement from the formal city planning compels the community to compose the informal building codes in order to avoid social friction and spatial conflict. It consists the land provision for house and public facility, the building envelope and utility system guidelines. This code must be complied in order to earn building permit. In After Fire Project case, the land owner can be prohibited to rehabilitated the burned house because violating the informal building codes. In order to avoid the presence of unproductive land in the neighborhood, the community persuades the owner to use the vacant land for public facility. The community also supervises and surveils the application of informal building codes actively. These findings were only possible by simultaneous research with participatory design.

This research proves that behind the chaotic appearance of informal settlement, lies an informal building codes that orchestrate the self-help development. Although the house form and street patterns seem disorganized, the spatial arrangements are very carefully placed, based on community's approval.

Due to the importance of this unwritten regulation, the architectural intervention, as physical rehabilitation program, must regards it as one of undeniable design guidelines. All the

design works will be rejected once the informal building code is not implemented. Therefore, it is important for architect to acknowledge the existence of the informal building codes. Architect also must understand it comprehensively, communicate, discuss and negotiate if there is modification needed in implementing the informal building codes. Thereby, the design and construction work will be fit to social activities of the community without compromising the building safety aspects.

The shared knowledge about informal area management with local residents and professionals and community's active involvement in each design and construction phase would be indispensable to improve living condition in urban slum settlement. Moreover, projects of poverty alleviation and slum settlements might work better if they start from the respect towards informal area management based on informal land ownership.

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