Socio spatial adaptation as a resilience form of native unplanned settlement in confrontation with new planned settlement development pressure (case study: enclave native settlement in Serpong, Tangerang)

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Abstract. Urban growth refers to expansion of a metropolitan into sub urban areas as the surrounding environment, with no exception of Jakarta city due to limited availability and high price of land within the city. The city of Jakarta, as a metropolitan, carries of expansion in its surrounding environment including Tangerang. Privat developers may an important role in this urban growth through their large scale of new settlement development project. The formation of establishment of enclave native unplanned sub urban settlement scattered within planned new settlement in Tangerang is to be an consequence of Jakarta urban growth. This fenomena could be comprehended as a form of resilience native settlement in confrontation with the new planned settlement pressure. The aim of this research, presented in this paper is to understand the socio-spatial concept of those enclave native settlement as an adaptation form to the new planned settlement pressure. Through descriptive qualitative research method, with indepth interview as a main research instrument, this research could depict or uncover the facts that there are various form of socio-spatial adaptation as the main theme of resilience native suburban settlement formation.

Keywords: socio-spatial, enclave, native unplanned settlement, planned settlement

1. Introduction

1.1. The existence of native enclave settlements
The growth of urban population in Jakarta due to urbanization and growth naturally supported by economic growth resulted in the development of Jakarta City toward the suburbs, especially for the provision of shelter. The agglomeration of Jakarta and its surrounding cities constitutes the megacity of Jabodetabek. Data from the UN states that Jakarta city (Jabodetabek) ranks second with a population above 29 million (figure 1).
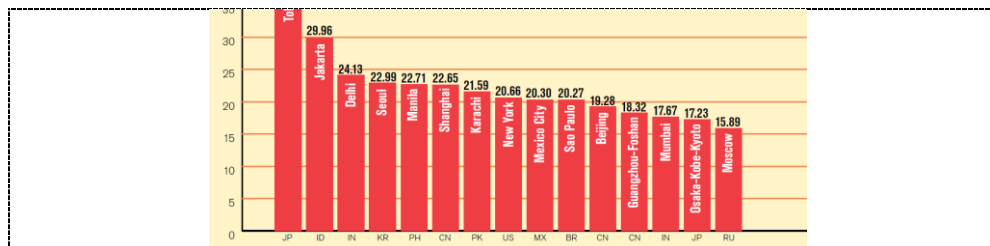
Figure 1 : The order of cities that are included in the classification of megacity based on population

**Source** : *United Nation* [26], 2014

The process of urban growth in developing countries is more preceded by the high growth rate of urban population which is the beginning of the emergence of problems in terms of decent housing. So the process of growth of new cities around big cities starts more from the construction of housing, then is followed by the movement of population from downtown to the suburbs, and developed with the completeness of facilities in the form of social facilities and public facilities. For other cases, it starts from the industry, and then came the workers who need housing [20]

Thus the growth of cities around Jakarta is basically the impact of the growth of Jakarta city as the center. According to Sujarto [22], there are three strategies that can be done to overcome the occupancy needs for the urban population, such as urban intensification, urban extensification, and new town development. Out of these three strategies, new town development is considered the best strategy to meet current needs. Thus, a large area of land is needed, which is available in the suburbs of Jakarta, one of which is Tangerang area.
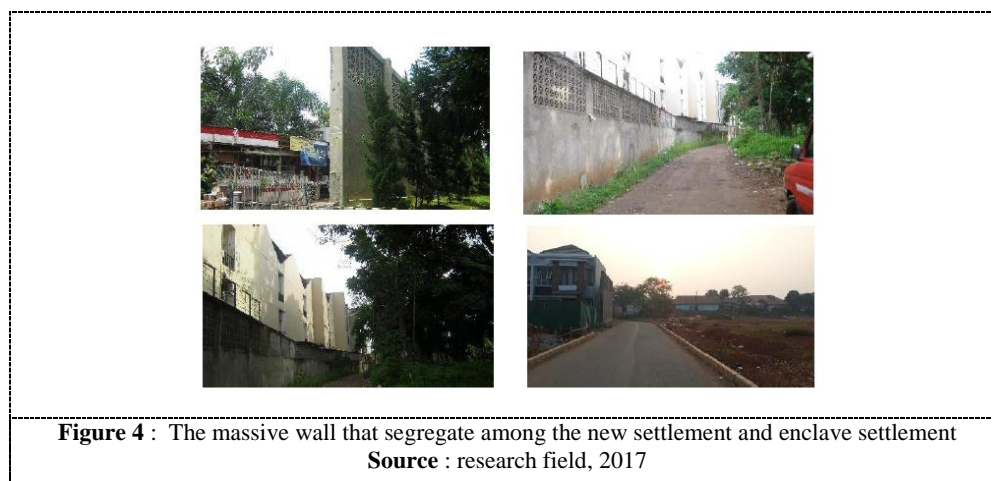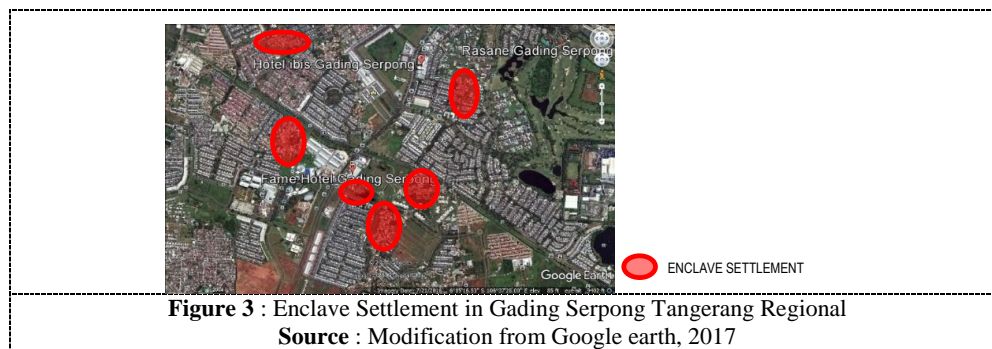
Provision of formal housing by developers is very diverse, both from the type of house offered and in the context of providing a residential area complete with facilities and infrastructure supporting the settlement. At the beginning of the development of the property industry, developers only provide housing supported by the provision of public facilities and limited social facilities. In the present development, many developers provide housing while offering an urban concept, in which almost all supporting facilities are provided in a single area, such as commercial functions from shop level to shopping center, education function from study group to university, big hospitals, entertainment function in the form that varies from building scale to amusement park (park), and office functions from home office scale up to high rise building with function as rental office and apartement.

To meet the concept of development of a region that is shaped like a miniature of the city requires a very wide land. As an illustration, the development area of Gading Serpong which is controlled by two developers (Paramount Land and Summarecon) has a development land of 1500 Ha. With the background of business calculations, developers get this vast land by freeing land in the suburbs, one of which is Tangerang region consisting of Tangerang Regency, Tangerang City, and South Tangerang City. Tangerang has an area of 129,468 hectares, consisting of 18,378 hectares of the city and 111,090 hectares of regencies.

In an effort to acquire a vast land area, major developers undertake land acquisition, both vacant and uninhabited land. In the process it turns out that not all communities of land and house owneres accept the offer of the purchase of land and buildings that have been inhabited for generations. This resulted in the present phenomenon of the existence of native enclave settlements located in the midst of new settlement development areas (figures 2A and 2B). The enclave settlements on a daily basis show a landscape that is in contrast to the new development areas, both in terms of appearance of buildings and daily life of the local people.

Figure 2A : Pressure from Developer to Buy the land and housing	**Figure 2 B** : Surfacing Enclave settlemenT
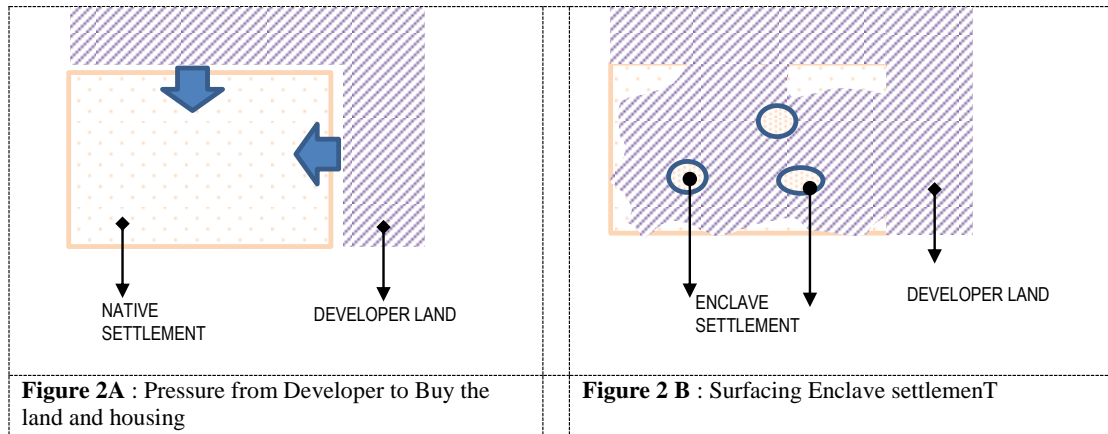
Against the background of business considerations to raise the value of new development areas, the developers fence the enclaves with high walls and provide only in and out access road (Figures 3 and 4).

Figure 3 : Enclave Settlement in Gading Serpong Tangerang Regional
Source : Modification from Google earth, 2017

Figure 4 : The massive wall that segregate among the new settlement and enclave settlement
Source : research field, 2017

Such condition increasingly creates the impression of bordered settlement, either physically spatial, or socially in the form of relationship with the environment outside the enclave of the settlement. Even though the change of the landscape and daily lilfe occurs differently than before, the enclave settlement still exists until now. This becomes the basic of this research which is to find out the answer of how is the adjustment pattern of space utilization in the settlement as the adjustment towards space development which changes a lot?

The research reviewing the positive and negative influence towards the presence planned settlement to the native unplanned settlement has been conducted in plenty of times, some of which are the positive influence in the form of economic growth and the availability of job opportunity triggered by road infrastructure development which connects the center of the city and the other supporting cities, and the completeness of supporting facilities (Widyo [28]; Siahaan, et.al. [17]), the emerge of space integration which connects the planned settlement dwellers and the local people (Setioko [19]; Prihanto[14]).

The negative influence found is related to the social and spatial segregation between the planned settlement and the native unplanned settlement (Firman[2]; Wulangsari[30]; Diningrat[1]). On the other side, the research analyzing the adaptation form done by the native settlement towards the planned one has not been conducted yet, especially the research inside the settlement trapped inside new (city) settlement.

1.2. Theoretical perspectives on settlement resiliences and socio spatial
1.2.1. Settlement resilience.
The definition about urban resilience is mostly related to the city resistance towards the threat of natural disasters like the climate change, earthquake, flood, tsunami, etc, while the threat on the resistance of a city or a part of city is not only to the disaster caused by natural factors, but what is also important to be analyzed is the resistance of a city towards the environmental change caused by humans, one which is in the form of intervention of new settlement construction which frees the native settlement and region, done by the big developers by buying the whole or the part of the existing settlement especially in the suburbs. In the context of the intervention of urban area to suburb area, Hejiman[6] introduced the concept of rural resilience that refers to the capacity of a rural region to adapt to changing external circumstances in such a way that a satisfactory standard of living is maintained, while coping with its inherent ecological, economic and social vulnerability. On the other side, there is a perception that the concept of resilience is part of the model proposed by Harrison[4]. The model is mathematically derived based on the potential action of a stressor and ultimately aimed at providing specific measurable indicators of stability. The four indicators are (1) resistance (range of fluctuations determined by a stressor), (2) resilience (speed of returning to the equilibrium state), (3) persistence (duration of maintaining the regular values of state variables during the action of a stressor), and (4) variability (frequency of changes during the action of stressors).

A settlement often responds in the form of adaption in defending themselves from outside threat[18]. In the context of ecological change in their surrounding, the effort of human self defense through adaptation is known as non-equilibrium paradigm, in which it is the system ability to adapt and adjust themselves to the internal or external process change by analyzing the ecological linking and social heterogeneity and function[13].

Through the analysis focusing more on the effort of the local people in responding against the external threat, a resilience community term is known, which is the the existence, development, and engagement of community resources by community members to thrive in an environment characterized by change, uncertainty, unpredictability, and surprise [8]. This means that well developed economic, institutional, social, cultural and natural domains are crucial for resilient communities. Relation between resilience and adaptation process described by Thulstrup[23] states that Resilience is understood as a measure of the level of access to endowments of capital – financial, natural, physical, social, and human – that can be mobilized in order to respond and adapt to environmental change. Habraken[3] mentioned it as the search of stability by a built environmentwhich is being analogized as a built environmental game, where a process is started from a simple situation and unbalanced condition then it processes through gradual transformation to reach more complex balance with lots of players. Therefore, built environment is explained as a life configuration operating on different level. In spatial context, spatial resilience capacity is a competence of a region to respond, recover, overcome and adapt and even develop when it faces an unexpected condition, sudden disturbance or stressor[11].

From those definitions, it can be concluded that the resilient effort of a settlement can be observed through community social behavior which is the response and adaptation process due to landscape change on its surrounding as the impact of the construction of new planned settlement. The

social behavior and activity in community life resulting in the shape and model of space is known as sosio-spatial analysis[27].

2. Socio Spatial

Social groupings exist independently of space, and do not require spatial reorganisation to make them better. This view originates more in sociological studies, and tends to be held more by planners and others concerned with social and economic processes, rather than with detailed physical arrangements of space through architecture[5].

To describe the relationship between constructed shape and social organization, two types different spatial order formulation is needed: first: space arrangement by the community differentiating the function and the border which is known as architectural identity. It is usually in the form of building: house, special building, village, city, etc. Second, space arrangement which is called as pattern; a community arrangement in a space where every member of a community sets himself in a room[5].

Correspondence model needs a physical arrangement in a space by a community (what activity is done is certain location) like house, neighbor, city and exactly to reflect the grouping physically, like family, interest group, certain community, where those things are resulted out of social categorization forms. However, according to Strauss[21], the form of relationship always exists albeit unclear and the group configuration can spatially reflect on social structure. This shows that there is connection between space and social life.

Socio-spatial concept is a concept regarding social relation activity among humans in order to fulfill their needs implying on the effort of space arrangement (arrangement on the length, width and height of room) as the place to held the activity [27]. In settlement context, a room is basically a product of an activity or social structure [7];[25]. Social acitivity and life have an important role in space, place, and city structure forming [12]; [20].

The discussion about human activity in the settlement either individual or social, cannot be separated from the related discussion with the territory. At present, territory theory has become almost the means by which we think about space. To deny it appears to be a denial of space itself[5]. Rapoport [15] states that all of us consider that territory instinct which is the need to identify and occupy is the basic and ever-lasting need. Lynch[9] mentions firmly that: human is territory animal which uses their personal space to arrange their individual activity. Every person will control more than one territory.

However, it cannot be ignored that in the effort in analyzing social life in the context of settlement, architectural analysis cannot be separated from space analysis due to the fact that basically architectural ontology is a space[5]. Even Castels clearly states that space is not a photocopy of society, it is society. Spatial forms and process are formed by the dynamics of overall sosial structure[25].

## 3. Method and Scheme of Research Conduction

The research was conducted with the purpose to see the resilient process of the enclave settlement in responding to the landscape change of physical and non-physical environment which happens around the settlement due to the new planned settlement construction. The first step is to determine the physical and non-physical object which would be observed as the first material of the analysis. Because the observed object involves non-physical materials, the method used in the research was descriptive explorative. Therefore, the search of social data is done by interview. The variable determination, the materials needed in the meaning and analysis, and the observed object determination to measure the resilient level of enclave settlement in this research can be seen in scheme (Figure 5):

Figure 5 : Scheme of the research process
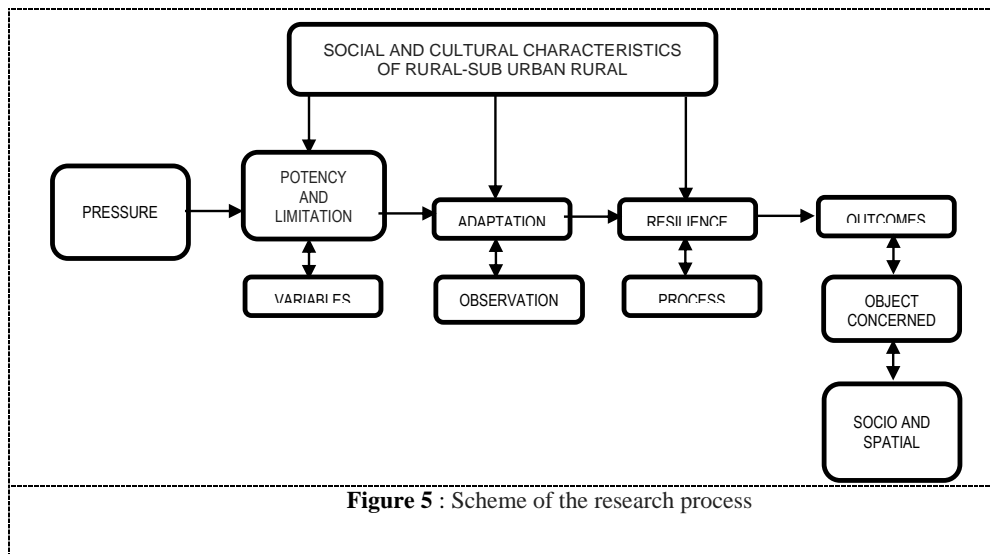
4. Discussion

4.1. Research Location

The research was conducted in Kampung Curug Sangereng which are RW 01 and RW 02 in Curug Sangereng Village, Kelapa Dua District, Tangerang regency. Looking from its name, this is the main kampung in the village so it has the same name that is Curug Sangereng village. Regionally, Curug Sangereng village is one of the village whose most of the regions is developed by two big developers, they are PT. Summarecon and PT. Paramount Land (Figure 6).

Figure 6. Locus of research at RW 01 and RW 02 Kampung Curug Sangereng Kelapa Dua District, Tangerang Region

Source : Google Earth 2017
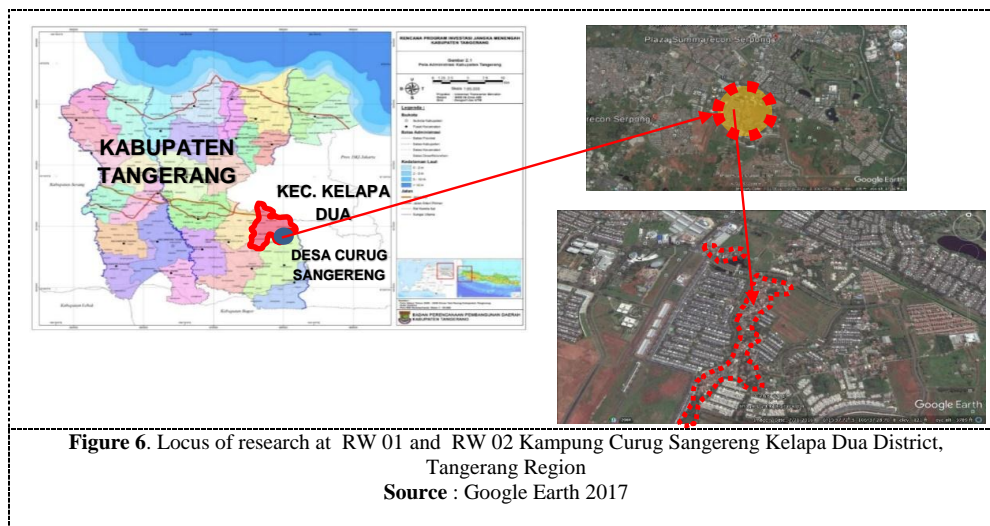
4.2. Characteristic of Rural-Urban Community

In suburb community context, Kusumastuti[12] states that suburb community has social capital potential known as social capital bonding which is the social capital among individuals in a group by seeing into the inward looking. The social capital keeps being looked after through individual interaction everytime formally or informally. In some cases, this social capital is concluded as the first step in responding to every change outside the community which directly influences community daily life. The adjustment mechanism is known as adaptation mechanism.

Related to community daily social activity in research location, it can be categorized as Sunda ethnic society who lives in semi-urban region with farmer dominated. Before land discharge is done by the developers, the land is dominated by rice farming and rubber plantation[24]. With such background, the research location has characters which can be seen as potential like shown in following table 1:

Table 1 : Rural-Urban Community Characteristics

NO	COMPONENTS	CHARACTERS
1	Public Environment and orientation to nature	Strongly related to nature; guided by faith and natural laws
2	Livelihood	farming traditionally and not efficient or not common or what is called as subsistence farming
3	Community size	Rural community is smaller than urban area
4	Population density	Population density is smaller than urban area
5	Homogenity	Similarity of social and psychological characters, language, faith and tradition
6	Social Interaction	Solidary is raised by the habit, purpose and experience similarity
7	Social Levels	Not as steep as urban community
8	Social Mobility	Rural community is lower than urban ones
9	Social Monitoring	Stronger because individual contact is informally intensed
10	Leadership Pattern	Decided by personal quality and based on generation criteria
11	Life Standard	Simple orientation and life standard
12	Social Solidarity	Stronger and unrewarded cooperation
13	Value System	Strong religion value, simple economic value

Source: Wijayanti[29]

4.3. Planned Settelement Pressure on Unplanned Settlement

Due to physical enclave settlement bordered by walls and spreat out in regions mastered by developers, the dwellers access in enclave settlement towards social and public facilities like education, health, population administration, and market is separated physically and non-physically. Such condition is felt by dwellers who conform that they occupy separated settlement (Figure 7).

Figure 7. Position of research locus from the Village Head Office
Source : Google Earth 2017
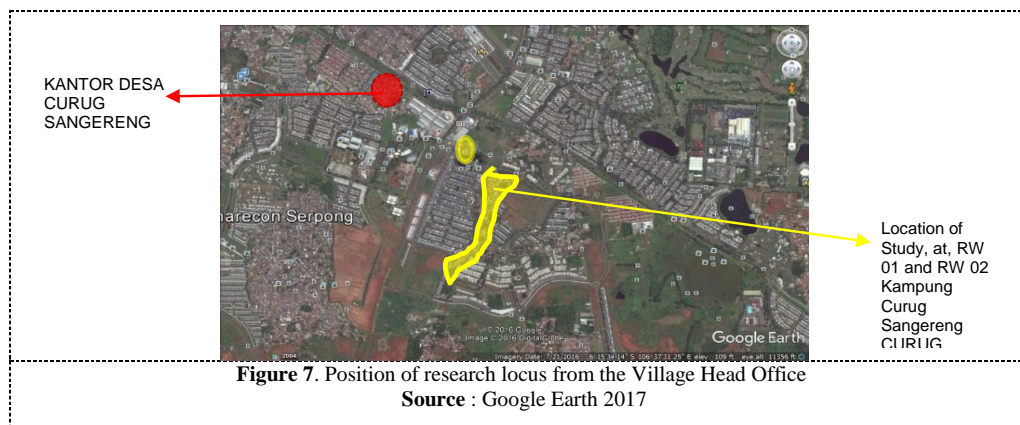
From social perspective, massive bordered by developers causes relative and social bonding in a village which previously feels closed gets separated due to distance. Because a half of population moves us since their land and houses are discharged by developers. Bigger pressure form felt by dwellers of settlement enclave is the offer coming from developers to prepared in buying land and houses to be occupied, especially the land and building which direcly borders on lands owned by developers with the price above usual market prices. Those pressures faced by dwellers of enclave settlement everytime until now. The effort to hold out from such condition is traced by analyzing

social adapatation forms done by the society occupying the enclave settlement which then ends in space creation and utilization

4.4. Spatial Adaptation Mechanism

To analyze the adaptation form spatially, referring to Rapoport [16] who elaborates a space which is basically formed out of 3 elements: 1) Fixed-feature elements (Buildings, floor, wall, and others) are elements that rarely experience spatial change which can be organized into sizes, location, order and structure; 2) Semi-fixed elements (diverse interior and exterior facilities) are elements which can feel the change in certain element types like street, stores, shop window, and other elements; 3) non-fixed elements (human, their activites and behavior) are elements that directly connect to behavior and attitude shown by humans.

The observation based on RW administrator data and the interview of important roles which direct the analysis on adaptation form done by dwellers of enclave settlement can be seen from non-fixed elements; elements in the form of behavior and economic activity and social dwellers caused by landscape change around the settlement due to formal settlement construction as shown in Table 2:

Table 2 : Matrix of socio-economic change of the dwellers ending at spatial adaptation

NO	CHANGE / NO CHANGE			SPATIAL CONSEQUENCE	CHANGE AND SPATIAL ADAPTATION
	INITIAL CONDITION	CAUSE	NOW		
1	Economy				
	Occupation:				
A	Farmer – Plantation	No land	Sales / shop keeper	Meetings are commonly done in informal space	Change: only on working time component
					Adaptation :
			Lanscaper	gathering point for picking up service	Change: spatial needs gatereing in front of settlement access
					Adaptation: utilizing space at the end of the access entering the settlement and formal housing to become the part of territory
		Houses to be boarding house	Entrepreneur	Amount of time at house, more intensive interaction among dwellers	Physical change of houses and settlement, and economic adaptation
					Adaptation: House layour to take place as boarding house
			Food Selling	Houses at the edge of street which mostly take function as stalls	Change: for building utillization
					Adaptation of stall terrace which is at night used as gathering space
B	housewife / farming/ doing plantation	• No land • Egalitarian culture with the other dwellers • Dense distance between houses	Housewife	often meet the neighbors so they form places to gather around the house	Change: more time at home, more often gathering with others so informal communal spaces are formed.
					Adaptation: more intensed territory in neighbor environment
			Landscaper	Gathering point for picking up service	Change: space needs to gather in front of the settlement access
					Adaptation: utilizing existing space at the end of the access entering the settlement and formal houses being the part of territory
			Housemaid/ formal clothes washer in formal housing		Change: access to formal houses
					Adaptatin: formal houses to be the part of territory
2	Social culture				
A	Interaction among children				
		Decreasing land	Gathering in	common space in	Change: more time to play with

	Interaction on village territory		neighbor territory	neighbor scale	children
					Adaptation: utilizing house terrace as public space
B	Interaction among teenagers				
	Interaction on village territory	Graduating from SMP/SMA, working from informal sector	Gathering informally in enclave territory	Formal: house of important figure, musholla	Change: frequent meeting intensity, territory around RW
					Adaptation: utilizing formal and informal space as communal room
			Gathering informally	Informal : Field, stall	Perubahan : interaksi di luar waktu kerja
					Adaptation: creating communal space by utilizing the existing one in neighbor territory
C	Interaction among women				
	Interaction on village territory incidentally if there is any social event	•Guidance from subdistrict •Kinship and religious one	Gathering formally (reading Quran, PKK, Posyandu)	RT/RW houses, musholla	Change: more interaction frequency so building as interaction space will appear
					Adaptation: squared terriroy in RT, RW and village level causing function specification of social building
		Not working	Informal gatering (taking care of children, shopping and religious events)	House yard, street, stall	Change: more time to take care of children, frequent interaction, creating existing space as interaction place
					Adaptation: utilizing house terrace, house yard, stall and street as public space
D	Interaction among men				
	Interaction on village territory	Neighborhood value (stabile)	Working together, patrol	Informal communal space	Change: smaller interaction on RT/RW level due to smaller settlement area
					Adaptation: more intense interaction on neighborhood territory creating informal communal space
		Religious value (stabile)	Reading Quran	Musholla	Change: Stabile value system, change on interaction level gets narrower
					Adaptation: house takes function as communal space to accommodate reading Quran event in turn
E	Interaction among all local people				
	Interaction on village territory	Neighborhood value system (stabile)	Big day celebration and events	Opened space (street, house yard)	Change: stabile value system, change on narrower interaction environment. Interaction can happen with relatives or neighbors who have moved to other settlement location
					Adaptation: because there is no wided opened land, utilizing street as incidental communal area
		Religious value system (stabile)	Celebration on Muslim Big Day	Musholla, mosque	Change: stabile value system, change on narrower interaction environment. Interaction can happen with relatives or neighbors who have moved to other settlement
					Adaptation: because there is no wide opened land, utilizing street as incidental communal space

Source: analysis based on interview and observation, 2017

From the matrix, we can explain them as follow: pressure in the form of change involving physical change of settlement spaces, surrounding landscape, the lack of village communities, and community social structure on farmer-plantation-based is responded by the settlement dwellers with adaptation on each social life level which eventually ends on spatial change and adaptation. In the adaptation

process recorded, social life is applicable and not changed even though it is explicitly declared by the dwelllers. The value system is the heritage of applicable social community life when the change has not happened yet, and it becomes base or norms or social life even if it is not written or spoken but it is consciuously or unconsciously inherited from one generation to next one. The resistant social value includes kinship value either because of solidarity or because of the common experience from the enclave settlement dwellers, helping each other, cooperate each other, and religious system.

The landscape and the utilization change reforms the occupation type of the dweller directly. The presence of planned settlement on one side offers advantage by providing many job opportunities, either formal or informal, and it is done inside and around the house because there are many oursiders coming as workers in planned settlement. The form of business as substitution of previous job like opening boarding house, rented house, and stalls (figure 8).

Figure 8. economic activity by the resident
**Source** : researcher, field survey 2017

On the other side, job in planned settlement area is absorbed as office employee, shop officers and park caretaker. The change of job characters and physical change of settlement cause the change in characters and interaction pattern among dwellers. The factors include time availablility, narrow opened land, and dense distance between houses influencing the form and intencity of interaction. Those things cause physical change of space either individual spaces (houses) or public space (figure 9).
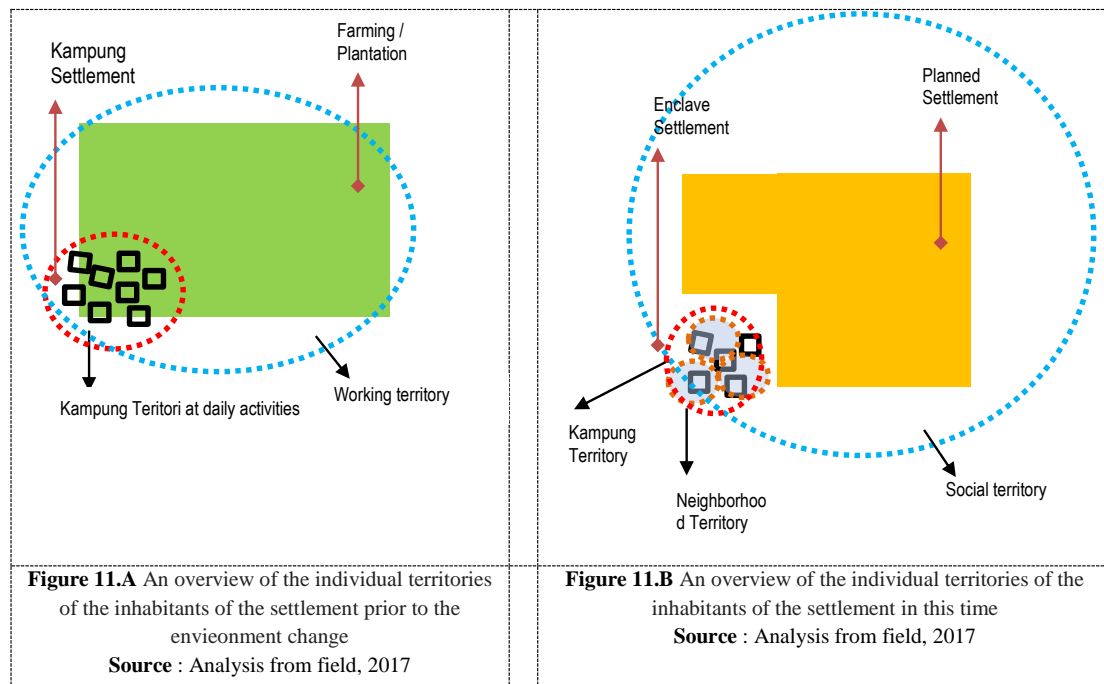

Figure 9. Patterns of interaction in the communal space
Source : field survey 2017

Social, cultural and economic activity of dwellers of enclave settlement done daily which is basically an adaptation process towards pressure in the form of physical and non-physical change inside and outside their settlement which ends in space creation and utilization. Each of the adaptation steps can be elaborated through variables as seen in the scheme (Figure 10).

Figure 10. Scheme of adaptation process that leads to spatial pattern
Source : researcher, 2017
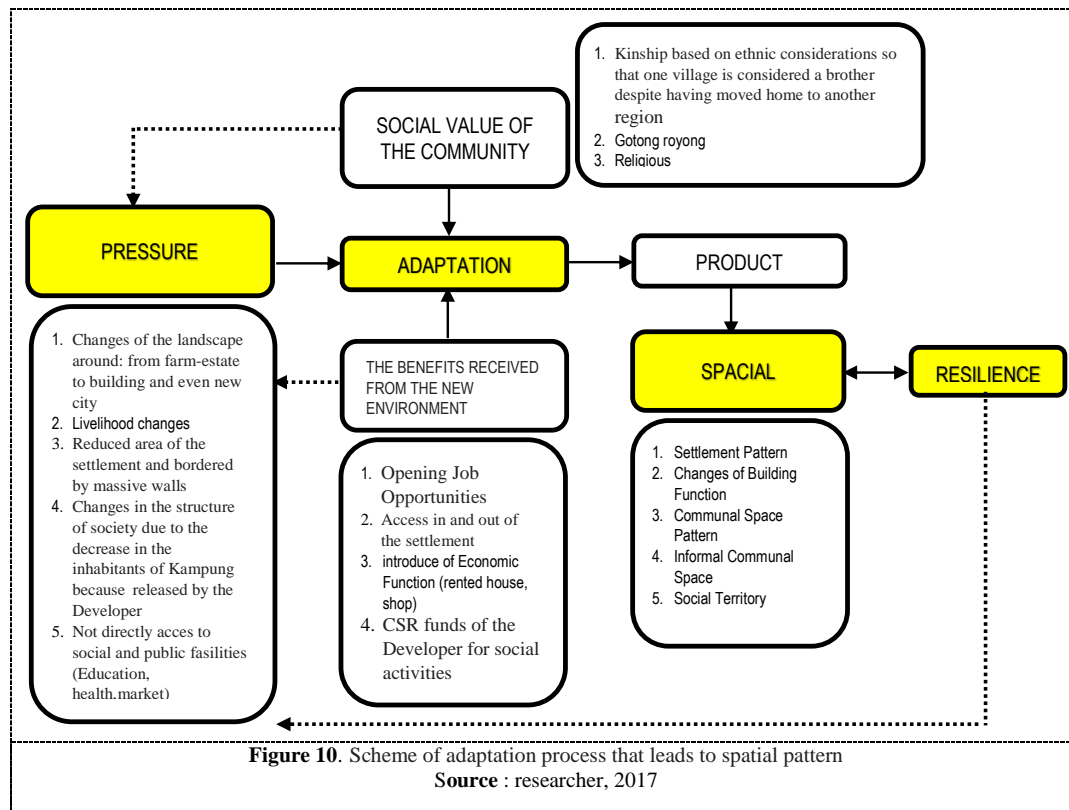
The change and other adaptation form also can be the supporting factor of resilience community in enclave settlement which is related to territory. Before the discharge and construction of land by the developers, social territory of community members is generally divided into three forms: 1) family territory, 2) village territory as manifestation of village community members, and 3) working territory which involves house, village and farming or plantation land as working asset (Figure 11A). Because of their settlement change, as elaborated before, it makes each of individual territories change with the emerge of smaller territory on neighborhood level, and big territory without physical border connecting solidary between relatives or neigbors who have moved out to the other settlement due to land or house discharge by the developers (figure 11B).

| **Figure 11.A** An overview of the individual territories of the inhabitants of the settlement prior to the envieonment change **Source** : Analysis from field, 2017 | **Figure 11.B** An overview of the individual territories of the inhabitants of the settlement in this time **Source** : Analysis from field, 2017 |

5. Conclusion

1) Landscape change inside and outside the settlement has been considered as threat because all social activities as neighborhood bonding still exists even though the adjustment process continues.

2) The adjustment form includes individual activity and social interaction behavior. This is supported by the applicable social value system and neighborhood and the creation of solidarity bonding with the relatives who have moved out ouf village due to land discharge by still inviting them on certain social events.

3) On the other side, the presence of formal settlement becomes the opportunity and takes advantage economically because they provide job field and business opportunity for every age-range dweller, men, women, or teenagers.

4) Eveny social, economic and cultural activity can still go on even though every adjustment happens because there is still inside and outside acess of settlement by developers.

5) Therefore, settlement enclave can still take hold for future with any intervention from related parties alike developers and regional government

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