

# Land Sharing as an Alternative to Solve Urban Land Scarcity in Wonokromo, Surabaya

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**Abstract**— Illegal settlements are emerging in urban areas. One reason is the tendency of low-income people who choose to stay close to their work place (Turner and Fichter, 1972). Vacant lands in urban areas are often occupied illegally or by renting the land. The problem occurs when the landlord wants to develop the land, while the existing settlers refused to move. Therefore, the assessment of land acquisition technique needs to be done. Land sharing can be an appropriate alternative solution because it can accommodate the interests of owners and tenants. Land sharing carried out in such a way so the land can be utilized by the owner and the community. Thus, it is expected that the solution can be beneficial to all parties concerned to the land (Kitay, 1985). This study was conducted to analyze the possibility to apply land-sharing scheme on PT. KAI (Indonesian Railways Corporation) land in Surabaya.

The research method is qualitative method. Data consists of qualitative and quantitative data. Quantitative data obtained through questionnaire, while the qualitative data obtained through interviews and observations. Data were analyzed with descriptive qualitative method.

Aspects affecting the success of land sharing are the legality of land, owner and user preferences, technical implementation and financial. Land sharing scheme in Wonokromo meet several criteria, such as the legality aspect, owner and user preferences, and technical implementation. However in the financial aspect there is problem regarding land acquisition. There are 83% of respondent that want their compensation in the form of money, while PT.KAI did not agree with money compensation. Also, there isn't any community organization that represents the dwellers since the legal announcement about the land planning haven't been made by PT.KAI

**Keywords**— *illegal settlements, land sharing, PT. KAI land*

## I. INTRODUCTION

Urban renewal is often done by vacate the slums area and replace them with other urban activities such as shopping centers or apartment building (Bulletin Tata Ruang, 2011). Eviction is a threat to the urban slum dwellers and can disrupt the overall livelihood (Kendra, 2011). The problem occurs because the poor's access to the job becoming more difficult since their house are farther from their workplace. Therefore it's harder for them to come out from the poverty. So, urban renewal by resettle the poor in the fringe area are not always solve the housing problem. Various kinds of conflicts can arise as result of the increasingly wide social gap and the declining economic ability.

Other land acquisition methods beside the eviction are resettlement, land consolidation, land sharing, kampung improvement program, and others. In this study, the alternative solution to solve the slum areas focused by using land sharing method. This is because the resettlement program could result in the removal of the area of residence (Kitay, 1985). Land readjustment technique is more appropriate if implemented in underdeveloped areas to complete the infrastructure and improve the road connectivity (Kitay, 1985). Kampung improvement program can be done if the density of the building is still within reasonable limits and high land ownership (Direktorat Jenderal Cipta Karya, 2006).

Besides, it has many other studies about land consolidation, resettlement and kampung improvement program in Indonesia. Thus, the study is expected to examine more about land sharing as consideration to solve the urban housing problem especially in private land.

## Research Objectives

- Determine the indicators that are used to analyze the feasibility of land-sharing scheme on PT. KAI land in Wonokromo, Surabaya
- Analyze the land sharing scheme on PT.KAI land in Wonokromo, Surabaya.

## Benefits of the Research

The theoretical benefit of this research is to deepen the knowledge about the land sharing scheme as an alternative of urban housing problem.

Practical benefit is the research can be use an alternative solution to illegal settlement arrangement with land sharing method.

## II. THEORY

There are two terms that refer to the untidiness, squatters and slums. Squatter is a part of a territory that is occupied by the people without permission from the owner. Slum is an environment that is occupied by people with bad condition of environment, very high density, not meet the elements of health, prone to fires and vulnerable to the occurrence crime (Kumorotomo, et al., 1995). This study focuses about the squatter settlement in urban area. People tend to occupy locations that are not safe from possibility of eviction and physical condition of housing are in bad condition.

According to Turner (1976), housing problem occur because of the conceptual mistake in understanding housing as a noun (housing as a noun) and identify the values and objects, rather than understand housing as an action. Problem that often occurs in the housing provision is a mismatch in understanding the needs of the poor. Therefore the housing supply did not match the needs of the poor.

The squatter settlements in urban areas are increasingly spreading. Many poor people in urban area choose to stay at housing that is not livable. Turner's theory and Fichter (1972) stated that low-income residents who come from rural to urban areas experienced three stages of development, namely:

- Bridgeheader

At this stage, people only require the proximity of the home to workplace (employment access). They are not concerned with the home ownership, moreover to the housing comfort.

- Consolidator

At this stage, the people's economic conditions already established. Rights or the ownership of the house started to become a concern.

- The status seeker

At this stage, the people's economic conditions have been well established. Therefore people are no longer sought the proximity of the house to the workplace, but have started looking for comfort.

From Turner explanation, it can be understood that in the early stages (bridgeheader) chose to settle in areas close to their workplace even though they do not live in the legal area. With the abilities that are limited in various ways, the initial priority is simply to survive. Therefore the poor chose a place to stay that is close to the workplace (easy access), because there is a synchronization between the need and availability.

#### A. Land Acquisition Method

There are few alternatives other than eviction in land acquisition, namely resettlement, land consolidation, land sharing, *kampung* (Indonesia's informal settlement) improvement program/KIP and others. Below the explanation of advantages and disadvantages from each land acquisition method (table 1):

TABLE 1. Land Acquisition Method

Method	Advantages	Disadvantages
Resettlement	<ul style="list-style-type: none"> <li>• Relocating residents of settlements that are too dense to other areas that are less dense.</li> <li>• The existing environment can be revitalized thereby increasing the economic value of the region and improvement of the environment</li> </ul>	<ul style="list-style-type: none"> <li>• It takes time and it need high social costs.</li> <li>• Can be triggered to the riots of the people that are move far from their work place</li> <li>• People may lost their job</li> </ul>
Land consolidation	<ul style="list-style-type: none"> <li>• Realignment small plots (owned by each individual) that include improvement of infrastructure and facilities</li> <li>• Improve the quality of the environment and the economic value of the region</li> </ul>	<ul style="list-style-type: none"> <li>• Plots that are laid out is the property of each individual with their rightful land ownership</li> <li>• At least 85% of the number of occupants that include 85% of the area agreed with land consolidation</li> <li>• It can't be applied to illegal land tenure</li> </ul>
Method	Advantages	Disadvantages
KIP (kampung improvement program)	<ul style="list-style-type: none"> <li>• The community participates actively in the improvement of the environment</li> <li>• Increase motivation and self-reliance in sustainable development programs</li> </ul>	<ul style="list-style-type: none"> <li>• The program does not correspond to the settlement with a very high density and illegal land tenure.</li> </ul>
Land sharing	<ul style="list-style-type: none"> <li>• The community participates actively in the improvement of the environment</li> <li>• Increase motivation and self-reliance in sustainable development programs</li> <li>• Can be applied land problem between land owners and land users</li> <li>• Landowners can develop their land as soon as possible and save time</li> <li>• Residents of illegal settlements can still live close to their place of work, have rights to the land that they needed, and close to the community that has been formed from a long time.</li> <li>• The government obtain land for the MBR, and can do environmental improvements in the city</li> </ul>	<ul style="list-style-type: none"> <li>• Require approval of landowners to divide their land so that people / organizations that represent them must be able to negotiate on the division of land with land owners</li> <li>• There must be a desire and a strong effort from their own communities to cultivate land sharing</li> <li>• Requires a compromise between the parties involved in the distribution of land.</li> </ul>

From the explanation above, the alternative solution used in this research is land sharing. Land sharing is used because land consolidation and KIP can't be used in illegal land tenure. While in this research, people used PT.KAI land illegally. Therefore if both parties (PT.KAI and the people who use PT.KAI land) agree to divide the land, the land sharing scheme can be applied.

### B. Land Sharing

According to Angel and Boonyabancha (1988), there are five key principles that must be fulfilled in land sharing scheme, namely:

- **Community Organization:** Negotiations for land sharing require that slum dwellers mobilize to counter the threat of eviction, to enlist the support of outside organizations, and to create the indigenous leadership necessary to represent the community in negotiations.
- **A Land Sharing Agreement:** This requires a binding agreement to partition the land. Such agreement must guarantee the security of land tenure on the parcels allocated to the residents, and may specify the necessary payments and time schedules for implementation.
- **Densification:** Re-housing the existing community on a smaller site requires increased residential densities. If the original density in the slum was already high, the new density will be even higher, unless some of the residents are excluded by the new scheme.
- **Reconstruction:** The increase in residential density and the need to clear part of the site usually necessitates the reconstruction of houses, unless original densities are low enough to permit infilling of vacant plots on the site.
- **Capital Investment:** Reconstruction requires capital from the domestic savings of the residents or loans from outside sources. To be economically feasible, land sharing schemes cannot rely on massive subsidies and must arrange for housing within the peoples' ability to pay. This may occasionally require cross-subsidies within the land sharing scheme, utilizing some of the development gains partially to offset housing reconstruction costs

Meanwhile, according to Rabe (2005), land sharing scheme can face problems, therefore it must meet the following aspects so that the scheme can be successfully applied:

- **Booming property market.** During periods of economic boom, commercial development pressure increases on well-located lands. While evictions of land occupants tend to go up when land values rise, a booming land market may also push landowners to make concessions with occupants on developable land—provided that this will enable them to develop right away on a portion of the desired land. At the same time, development pressure can also spur land occupants to seek compromise to avoid eviction. Usually, landowners become amenable to compromise once alternative ways to remove land occupants (both legal and illegal) from the land have been exhausted.
- **Community organization and consensus.** A strong and cohesive community can resist eviction by presenting a more unified front to the landowner during negotiations.
- **Well-established communities:** The longer a community has been established on a disputed site, the greater will be its bargaining power vis-à-vis the landowner and developers. This may be because of legal rights acquired

over time, or because of less tangible factors, such as increased political connections or alliances built up by residents over the years.

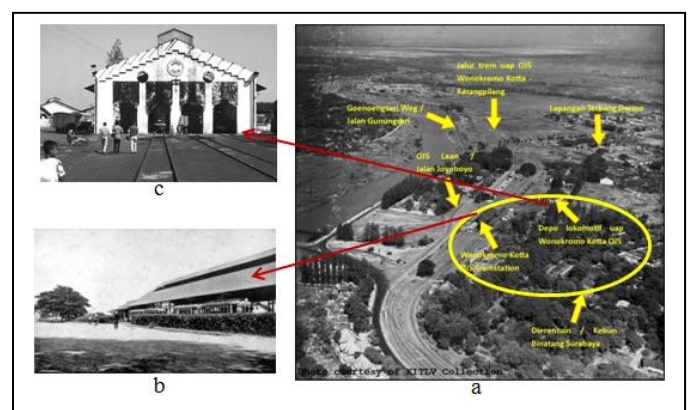
- **Third party intermediation.** The intermediation of an outside organization with an interest in an amicable and just outcome to the land conflict is often a critical prerequisite of a successful land sharing agreement. Such an intermediary is usually a public agency, with some political clout. This agency must broker a compromise that is technically and financially sound, while also meeting sufficiently the interests of all parties. The intermediary must also ensure that the agreement is enforced on all sides.
- **Physical/technical feasibility.** A land area that is to be shared must be sufficiently large to accommodate safely, and in compliance with local regulations, the juxtaposition of residential and commercial land uses.
- **Financial feasibility.** Each land sharing deal has a unique financial arrangement, depending on affordability and priorities of residents and developers, and the physical features of the site.

The principles above will be used as a variable study to determine the feasibility of applying land sharing. The application of this sharing is done by densification. The new settlements are built vertically so that people who occupy this settlement can be accommodated to the fullest.

### III. METHOD

The research method is qualitative method. Data consists of qualitative and quantitative data. Quantitative data obtained through questionnaire, while the qualitative data obtained through interviews and observations. Data were analyze with descriptive qualitative method.

### IV. OVERVIEW OF THE RESEARCH LOCATION



The research is located on the PT.KAI land in Wonokromo, Surabaya. The tram station land area is 120,000 m<sup>2</sup>. The picture shown below is the original land use of the PT.KAI land until 1978 (Fig 1).

Fig. 1. a. Original Land Use of PT.KAI land until 1978, b. Wonokromo tram station, c. Tram workshop  
Source: www.surabayatempodulu.com

After the trams stopped operating, the buildings and land at the former tram are not used by PT. KAI. So lots of people in Surabaya and immigrants from outside the city started to rent the PT.KAI land. Almost the entire area of the former tram yard is used by people who rent PT.KAI land. However, based on interviews with the Chairman of RT 11 RW 6 Sawunggaling, there was a fire in 1991. The fire resulted in the destruction of most of the houses in this area. After the fire, some people whose houses were burned return to their own city. Others rebuild their home in the former land of the tram. However, people no longer pay rent to PT.KAI because they feel that they build their own homes. Below is the existing condition of PT.KAI land (Fig 2):

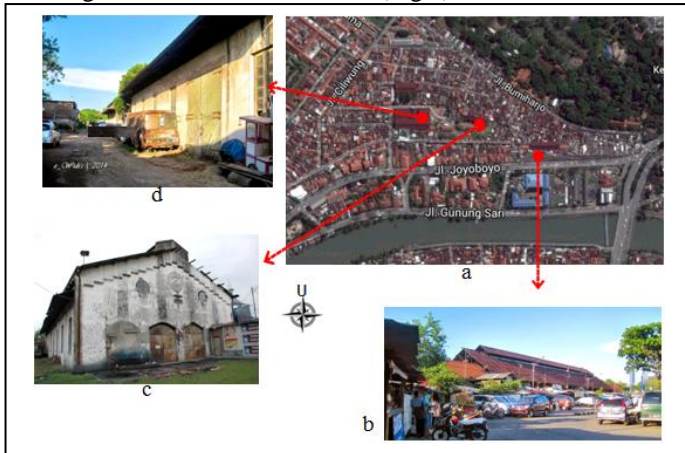


Fig. 2. a Existing Condition of PT.KAI land (2015), b. Former Wonokromo tram station, c. Former tram workshop, d. Former tram depot  
Source: googlemaps, Wisnanto (2015)

The street in front of the former Wonokromo tram station (figure 2b) is currently leased by the Department of Transportation and is used as the extension of terminal Joyoboyo, Surabaya. While the former tram building is used as a motor park by residents in the region. Besides that, the building is also functioned as housing for the residents. Currently, the condition of the building is not well maintained. Former tram workshop is not used by the owner. Seen in Figure 2c and d, the former tram depot and workshop are in bad condition and poorly maintained. Land around the trams garage is used for car parking area by the people. Even residents also build non permanent shelters in this area.

In 1997, PT.KAI cooperated with the private sector to develop this land as a commercial area. Based on interview with PT.KAI's senior asset manager, the private party had never paid the rent of land. Until now, even the private party was never submitted land use plan for the development of the land. Therefore PT.KAI is aggrieved because they do not getting the benefit from the land. Meanwhile, the private party was difficult to develop the commercial building in this location because they have difficulty in emptied the land from the houses. Thus, the private party didn't pay the rent to PT.KAI. Both PT.KAI and private parties are not able to vacate the land occupied by the community. So, the land management at this location had been constrained for a long time.

The existing settlement has a very high density with inadequate infrastructure. The government can't provide adequate infrastructure such as roads, improvement of drainage, because the land is not own by people who live there.

## V. DISCUSSION

### A. Indicators that are used to analyze the feasibility of land-sharing scheme

Based on the review and Angel and Boonyabancha (1988) and Rabe (2005), the aspects that use in the assessment of land-sharing are based on several aspects:

- Social, encompassing the community and preferences of the land owners and land users.
  - o Community Organization
 

Ideally, the community is required in designing land-sharing scheme to be submitted to the land owner. The community organization represents the community to compromise with the landowners and unify the voice of the community.
  - o Preference land owners and land users
 

Assessment on this aspect includes an assessment of the land owners and land users. On this assessment, the scheme can be run if the landowner agrees to divide the land for function of housing. Because the land is very dense (KDB 80-100%), the housing development that can applied is flats. So, the land owners can utilize the other part of land for other functions. Thus, this scheme can be run if the land owners allow the construction of flats on their land and land users are willing to stay in the vertical house.
- Technical application
 

On this assessment, land sharing scheme can be run if the existing land area sufficient to build flats and commercial building.

- Financial
 

On this aspect assessed whether the land user can pay the rental fee for flats or pay fee for ownership of the flat. Assessment is done by analyzing the monthly income of land users, whether it can meet the rental fee.

The construction of the buildings also needs to be analyzed with the local regulations. So that aspect should also be analyzed regarding this aspects is the legality of land. On this aspect, the spatial planning regulations and land development regulations (PT.KAI/BUMN) need to be assessed. If the rule of spatial planning and land development regulations in the area of research allows the development of settlements, the land-sharing scheme based on the legal aspects can be run.

### B. The Analysis of Land Sharing Scheme in the Research Area

Based on the determination of the previous indicator, there are four aspects that are examined in determining the feasibility of land-sharing scheme in the area of research. The assessment covers the legal aspects of land, the owner and user preferences aspects of land, the technical aspects of the implementation and financing aspects.

- Legal Aspects of Land

Based on RDTRK Wonokromo (Wonokromo spatial planning) 2014, the use of land in the study area (the area circled in red line) as a residential area, commercial, and public facilities. Thus, in the study area could be developed as flats.

There are two ways to manage the state-owned enterprises (BUMN) land, namely the use and the alienation of land. Both are options of land cultivation if the land is not used for the implementation of the state administration (2h item General Explanation PP No. 6 Year 2006 on the Management of State / Regional). The joint operation (JO) of the land can be done by leasing, joint use and Built Operate Transfer/BOT (Article 1 of Regulation No. 6 of 2006). While land alienation can be done by sale, exchange, grants and equity participation of the central government / regions (Article 45 of Regulation No. 6 of 2006). Thus PT.KAI land in the area of research that is currently not used for the implementation of the state administration, could be developed for flats and other function. Thus, based on the foregoing, the feasibility of legality in land sharing scheme can be run.

- Social Aspects

Social aspects include the community organization as well as the preferences of the owners and users of land.

- Community organization

Ideally, the community organization is required in designing land-sharing scheme to be submitted to the land owner. In the study area, the current community who design the land sharing agreement does not exist. When compared with the precedent in Bangkok in Rama V program, there has been a formal notice of vacating land from land owners. So that people responded with the formation of communities and they can remain in the disputed area. In addition, there is NGO that help community to design the land sharing scheme to the land owner.

In the case of PT. KAI land in Wonokromo, there has been no official notification regarding the clearing of land, both for road widening and KBS and commercial area development (interview with Chairman of RT 11 RW 6 Sawunggaling). A total of 23 respondents (65.71%) stated PT.KAI land users do not know the planning for expansion of the road and monorail, while eight respondents (22.86%) of other states to know the plan from the news and the 4 remaining (11.43 %) claimed to know the plan of rumors circulating in the community. Therefore the land users have not thought about what to do if the land that they use needed for the infrastructure development and commercial building.

In addition, residents in the study area are also not too aware about the land-sharing scheme. This is because the precedent land sharing in Surabaya, which can be observed by the citizens are also limited. Development of simple flats in Surabaya has been done more on land owned by the city and provincial governments. While the development of flats on private lands targeted for upper-middle income people (as apartments). So that people do not know the land sharing options. With the study on the possibility of land sharing scheme, can be a good option for people who use the land and the owner of the land (PT.KAI).

- Land owners and land users preferences

Land owners preferences

PT.KAI initially planned land use in the study area Sawunggaling, Wonokromo for retail development (commercial area). However, investors who cooperate with PT.KAI did not build a commercial area, so that the land currently used by the community as a place to stay. Based on the interviewed (2014) with the Senior Assets Manager, the plan will be reviewed because it does not go well. PT.KAI land on the Bumiarjo road, Sawunggaling was planned for the widening KBS area, widening the road Bumiarjo and monorail. Currently the land is still occupied by residents as a house or place of business.

Based on interviews with land owners (PT.KAI) concerning the possibility of land-sharing scheme for vertical housing functions in the area of research, asset manager PT.KAI DAOP VIII Surabaya states that, 'The construction of towers on land in the area of PT.KAI former tram Wonokromo is possible because of the land area is wide. Currently initial function as a commercial area on the land is also not running, so that if the land can be utilized, it will be better. '

However, it should be assessed whether the government and the people willing, because today almost the entire area on the PT.KAI land had been occupied by the community. Previously, the plan to develop towers/flats had been plan in the PT.KAI land located in Pacar Keling and Sidotopo, Surabaya, but the area had been filled with houses so that the plan is difficult to be execute.' In addition, it is mentioned that PT KAI only as a provider of land, for construction can be done by the government or private parties.

Senior manager of non-railway assets PT.KAI mention that the land is not sold, and the system used is Build Operate and Transfer / BOT. BOT is a collaborate utilization of land assets owned by PT KAI (Persero) by the other party by build building and utilized by the other party in the agreed period, and after the expiry of the building is handed over to PT. KAI. This system is a form of long-term cooperation for 30 years, after the loan period expires, the same agreement can be done again. If agreement is not followed, then the building returned to PT.KAI. So, based on this criteria, the possible flat that can be built is simple rental flat.

#### Land User Preferences

If PT.KAI and the government requires the land that occupied by the respondent for infrastructure development and there is a land acquisition, 20 respondents (57.14%) declared their opposition to the plan because they have lived in that place for decades and the location is close to the workplace. A total of 15 respondents (42.86%) agreed and admits that the land they occupy today were not theirs.

If the land that occupied by the respondent is built as the city's infrastructure (road widening, monorail and public facilities) and carried out the development of the commercial area so that land acquisition should be implemented, then the respondent stated that:

- a. 20 respondents (57.14%) want compensation in the form of money and flats in this location (land sharing scheme),

- b. 9 respondents (25.71%) want compensation in the form of money,
- c. 5 respondents (14.29%) want compensation in the form of flats in the this location,
- d. 1 respondent (2.86%) want compensation in the form of flats in the Surabaya area.

Thus respondents who want the replacement flats in the same location are 25 people (71.43%). It appears that the majority of respondents approve land-sharing scheme, with compensation in form of flat unit. Thus, based on the social aspect, the community has not been fulfilled in the scheme of land sharing. However, preference owners and land users in land sharing scheme are met.

- Technical application

The land area at the former tram station Wonokromo is  $\pm 120,000 \text{ m}^2$ . Here is a picture of PT.KAI land area.

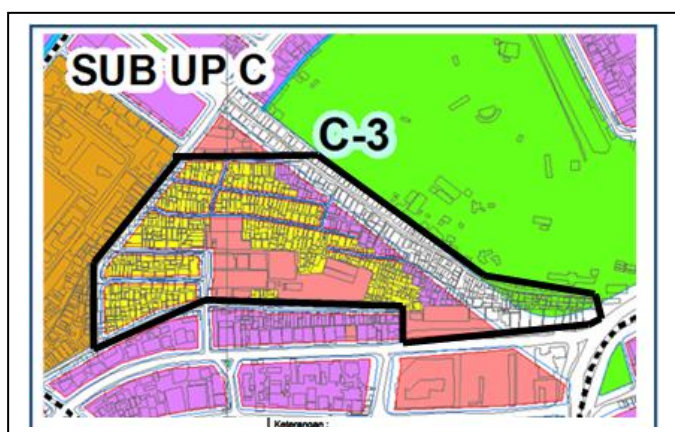


Fig. 3. PT.KAI land area (in black line)

Source: Wonokromo spatial planning (RDTRK Wonokromo 2014)

Area that will be the expansion of the KBS (Surabaya Zoo) is  $\pm 1495 \text{ m}^2$ . Area that will be use to widening the Bumiarjo road is  $\pm 11,825 \text{ m}^2$ . So the size of area that can be developed by PT.KAI area is  $\pm 106,680 \text{ m}^2$ . The initial plan the development of this area is the commercial development of the entire land area. Illustration land development as follows:

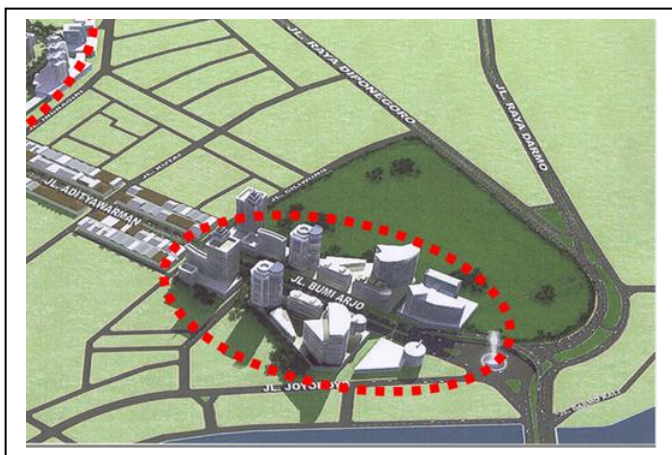


Fig. 4. Illustration Commercial Area Development Plans

Source: Wonokromo spatial planning (RDTRK Wonokromo 2007)

Currently, the constraint faced by PT.KAI and the private sector in developing this land is the inability to vacate the land for development of commercial areas. Thus, the land is only used by land users as a residential area. With the development of flats in this area, a compromise between landowners, interested investors and users of land can be determined.

PT.KAI parties can develop a commercial area on the area that's more strategic and residential functions for the public can follow the existing land distribution. This is because the need for accessibility is higher in a commercial area. Bumiarjo road is planned as a direct road between the road and the road Adityawarman Darmo. Based on the draft RDTR Wonokromo 2014, Bumiarjo road planned as a primary collector road. The development of the commercial area is also in accordance with the draft the local spatial planning in Wonokromo 2014 that plan for the development of commercial area in this region.

Based on the preferences of the owner of the land (PT.KAI) vertical residential area can be adjusted to PU rules. However, according to PT.KAI, the constraint is the land acquisition, because it requires huge cost.

Development of the commercial area could be done as early plan as mall or mixed use building with commercial and office functions. But with land sharing scheme, the development is integrated with vertical housing in the western part of the site.

- Financial

The financial aspect analyzed based on ability to pay (Ability to Pay / ATP) on flat's rental cost by land users. The average total income of families based on questionnaire is Rp1.857.000. If set aside 30% per month, then the ATP respondents flats to rent unit is Rp557.100 per month.

The problem is related to land acquisition. It has been known previously that land users no longer have a land lease agreement with the land owners. However, most users of the land (83%) want monetary compensation. Based on interviews with PT.KAI, they are not willing to provide monetary compensation to land users because now there isn't land lease agreement.

## VI. CONCLUSION

Based on the theory review about land sharing, aspects affecting the success of land sharing are the legality of land, land owners and users preferences, technical implementation and financial. On the legality of land aspect, land sharing schemes can be executed because it does not violate the land use regulations. In the social aspect, the community organizations have not formed because there has been no official notification regarding the land use plan. In the aspect of user preferences and the owner of land, land sharing scheme can be run. This is consistent with the results of interviews with senior asset manager part PT.KAI stating that the construction of towers in the area of research allowed to be done. Based on user preference land, as much as 71.43% of users of land approved land-sharing scheme by transfer to flats.

Based on the technical aspects, the division of the land can be carried out because of the extent of land owned by PT.KAI allow development of flats and complexes mall / mix used. However in the financial aspect for land acquisition there are problems, there are 83% of people want their compensation in the form of money.

- Efforts that can be applied to land sharing method are:
- Keep the socialization of the land use plan to the public.
- There should be counseling and community assistance regarding the land use, so the society don't demand any compensation in the form of money in the land they occupy considering the status of the land they occupy is not legal (there is no rental agreement).
- Currently, the community is only represented by RW 6 villages Sawunggaling and chairman of RT 11 RW 6. Thus, there should be a set up on community organizations that represent the community to compromise with the land owners about the technical implementation of land distribution.
- There is a need of government support in the planning of the development of this region.

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