

The Capacity of Flat Rental to Transform Future Kampong Code, Yogyakarta, Indonesia

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Outline

1. Introduction
2. Theoretical Framework
3. Case study area : Kampong Code
4. Analysis
5. Conclusion



Informal Settlement



Informal settlements are dense settlements comprising communities housed in self constructed shelters under conditions of informal or traditional land tenure. They are common features of **developing countries** and are typically the product of an urgent need for shelter by the urban poor (UN Habitat, 2011a)

UN indicator for people living in informal settlement: (%) = $100 \times P_{inf} / P_{tot}$ (equation 1)
(P_{inf}) and total population (P_{tot}) data

- This indicator provides a relatively straightforward measure of the **quality of housing, and thus of the risks to children's health**.
- **A large percentage** of people living in informal settlements can be taken to imply an increased risk to children's health; a low percentage implies a reduced risk.

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Urbanization in Indonesia

Urbanization is influenced by three factors: natural growth of urban population, **migration population from rural areas to urban areas** and reclassification of rural to urban (UN-ESCAP, 2008).

urbanization level for each province in Java Island from 2000-2025 has already reached 80%

Province (%)	2000	2005	2010	2015	2020	2025
Jakarta	100	100	100	100	100	100
West Java	81,4	50,3	58,8	66,2	72,4	77,4
Central Java	73,8	40,4	48,6	56,2	63,1	68,9
Yogyakarta	82,8	57,6	64,3	70,2	75,2	79,3
East Java	73,7	40,9	48,9	56,5	63,1	68,9

urban population in developing country (Kaji calculation, 2003) :

- 2000: 1,95 billion
- 2025: 3 billion
- 2050: 4,8 billion

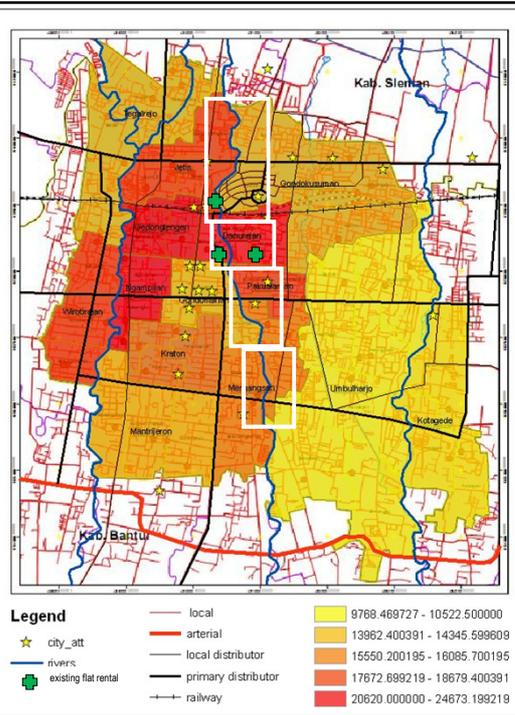
High city population growth rate in developing countries will cause **urban problems**

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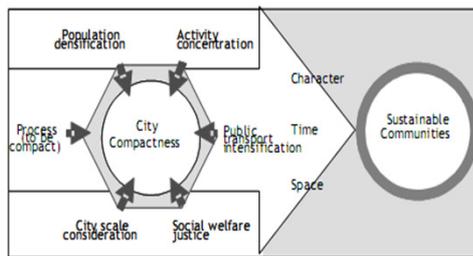
Code Profile



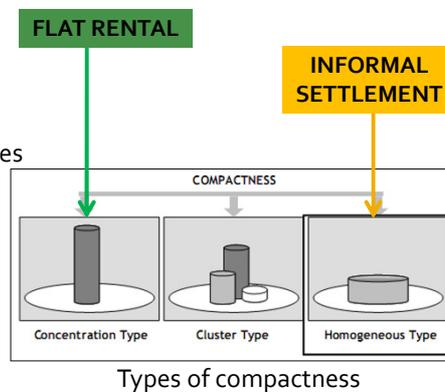
- Nearby Code river banks (six districts, for about 4.000 houses).
- Occupied **1,24 km²** means **3,8%** of Yogyakarta City area (32,5 km²).
- It is 40% of 10% city population who lived on river banks in Yogyakarta city (41.000 inhabitants) (Setiawan 1998).



Compact City Characteristics



Sustainability, city compactness, its attributes (Roychansyah and Diwangkari, 2010)



Flat Rental in Indonesia



It is hard program for developing country (serious financial problems after some years) but it is good role model (UN-Habitat and UN-ESCAP, 2008)

Indonesian Government issued:

- 1985: Flat Housing Regulation no. 16/1985
- 2007: Flat rental housing regulation no.05/PRT/M/2007

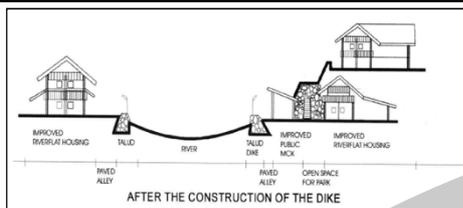
Hong Kong & Singapore was succeeded to solve city informal settlement through State-built high-rise apartments

Indonesian Ministry of Public Works no. 05/PRT/M/2007: **flat housings are rented by government for poor people with:**

- low wage (IDR 1.000.000 – IDR 2.500.000/ month) or
- low-middle wage (IDR 2.500.000-IDR 4.500.000/ month).

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Code Transformation



River Dike
6km (1991-1998)

Flat rental
(2006)



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District Profile of Case Study Area Code Profile

District	Area (km ²)	Dwelling (km ²)	% dwelling to area	Total (Inhabitants)	Density (Inhabitants/km ²)
(1)	(2)	(3)	(4)	(5)	(6)
Jetis	1,7	1,06	62,35%	15.019	14.169
Gondokusuman	3,99	2,28	57,14%	27.062	11.869
Danurejan	1,1	0,5	45,45%	10.999	21.998
Gondomanan	1,12	0,47	41,96%	7.398	15.740
Pakualaman	0,63	0,35	55,56%	5.754	16.440
Mergangsan	2,31	1,57	67,97%	17.352	11.052
TOTAL	10,85	6,23		83.584	

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Area and Population Number of Case Study Area Code Profile

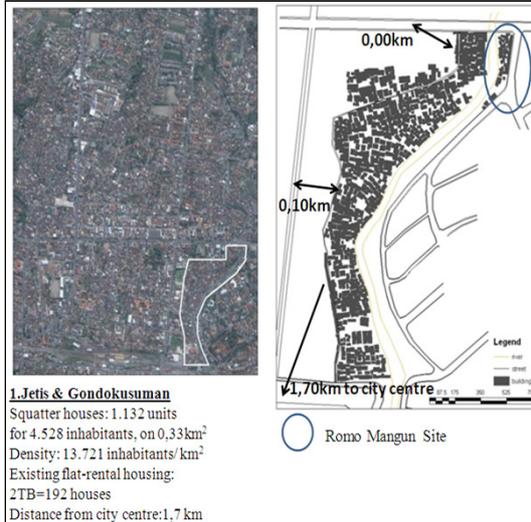
District	Houses	Inhabitants	Area (km ²)	Density (Inhabitants/km ²)	study area/ district area	
					%of inhabitants	%of area
(7)	(8)	(9)	(10)	(9/10)	(9/5)	(10/2)
Jetis	1.081	4.324	0,23	18.800	28,79%	13,53%
Gondokusuman	51	204	0,1	2.040	0,75%	2,51%
Danurejan	822	3.288	0,25	13.152	29,89%	22,37%
Gondomanan	951	3.804	0,21	18.114	51,42%	18,75%
Pakualaman	233	932	0,05	18.640	16,20%	7,94%
Mergangsan	931	3.724	0,4	9.310	21,46%	17,32%
TOTAL	4.069	16.276	1,24			

Area: 1,24 km² (3,8% of Yogyakarta City area (32,5 km²))
Inhabitants : 16.276 ; Houses: 4.069

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Section 1

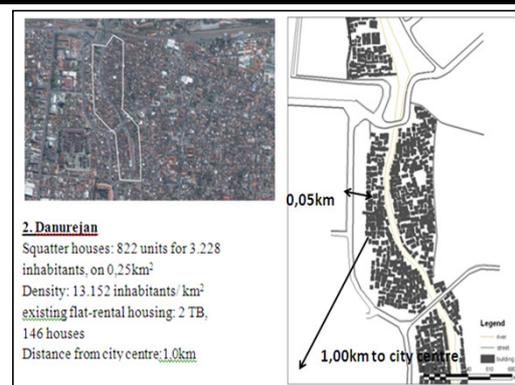
Code Profile



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Section 2

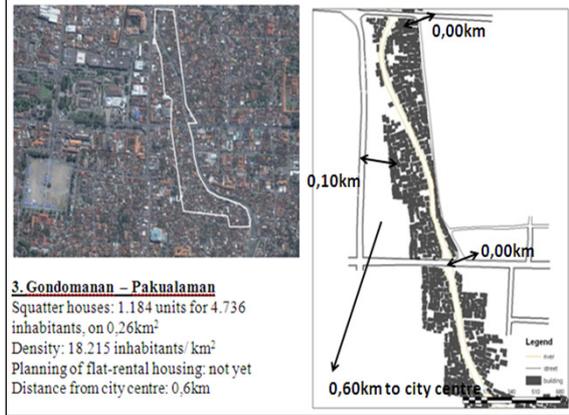
Code Profile



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Section 3

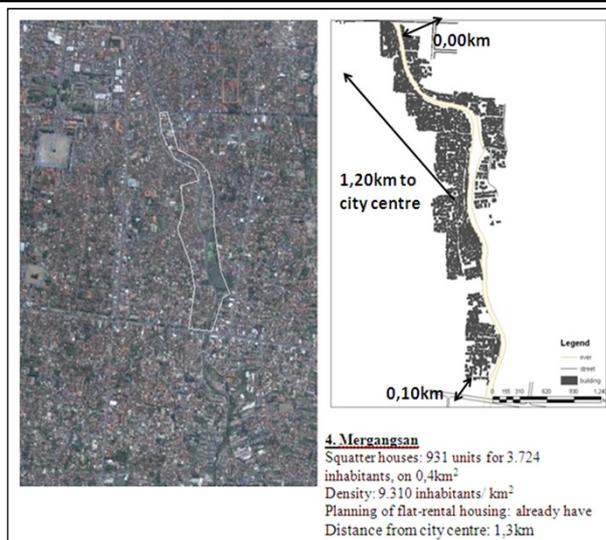
Code Profile



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Section 4

Code Profile



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Capacity of Existing Flat Rental in Study Area

2010 → the existing flat rentals only fulfill: **8,31%** of houses need in the whole area

No	District	Area (km ²)	Houses	Density (inhabitants/km ²)	Existing flat rental (TB)	Un-covered House by TB 2010
1	Jetis & Gondokusuman	0,33	1.132	13.721	192	940
2	Danurejan	0,25	822	13.152	146	676
3	Gondomanan & Pakualaman	0,26	1.184	18.215	0	1.184
4	Mergangsan	0,4	931	9.310	0	931
	TOTAL	1.24	4.069		338	3.731

Build flat will:

- increase density (10 times)
- well organized settlement, not squatter.
- need small area (8-13% area of each section)
- create green areas

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Proposing Code Flat Rental-Housing

No	District	Density (inhabitants/km ²)	TB 2010	TB Area (km ²)	TB Density (inhabitants/km ²)	% TB area to case study area
1	Jetis & Gondokusuman	13.721	13	0,028	144.615	8,48%
2	Danurejan	13.152	9	0,020	135.200	8,00%
3	Gondomanan & Pakualaman	18.215	16	0,034	148.000	13,08%
4	Mergangsan	9.310	13	0,026	143.230	6,50%
	TOTAL		52			

2010 :

- 1: 13TB
- 2: 9 TB
- 3: 16 TB
- 4: 13 TB

TB : twin blocks
(two identical blocks, 1 block consists of 4 floors, with 72 houses unit)

Flat rental in Code will be integrated with river banks status as **residential**, natural protections and cultural areas.

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Proposing Code Flat Rental-Housing

New Kampong Code nearby the river



Proposing Code Flat Rental-Housing

New Kampong Code nearby the river

Section 1: 13 TB (new) and 1 TB (exist)



Section 2: 9 TB (new) and 2 TB (exist)



Section 3: 16 TB (new)



Section 4: 13 TB (new)



Proposing Code Flat Rental-Housing

Projection

No	District	2010		2015		2020		2025	
		Inhabitants	TB	Inhabitants	TB	Inhabitants	TB	Inhabitants	TB
1	Jetis & Gondokusuman	4.528	13	4.968	15	5.450	16	5.979	18
2	Danurejan	3.288	9	3.607	10	3.957	12	4.341	13
3	Gdomanan & Pakualaman	4.736	16	5.196	18	5.700	20	6.253	21
4	Mergangsan	3.724	13	4.085	14	4.482	15	4.917	17
	TOTAL	16.276	52	17.856	57	19.589	64	21.490	70

In every 5 years →

- Need 2 twin blocks / section, Land need: 0,4 ha/ section

Flat rental has changed compactness type:
"From: homogenous To: concentration"

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Compactness analysis of existing Kampong Code and proposing flat rental of Kampong Code

(Roychansyah, 2008).

No	Characteristic	Existing Kampong Code	Status	Proposing Flat Rental	Status
1	Density	13.721 inhabitants/km ² on 0,33 km ² area (Section 1)	-	144.615 inhabitants/km ² on 0,028 km ² area	+
2	Growth pattern	Compact	-	Compact	-+
3	Land use	Mixed-squatter	-	Mixed-organized (residential, green area, public area)	+
4	Scale	Human scale (smaller buildings, road, pedestrians facilities)	-	Human scale (blocks and roads, pedestrian facilities)	-+
5	Community service	Main street, walk	-	Main street, walk	-+
6	Neighborhood type	Strong relationship, multi-modal transportation	-	Strong relationship, multi-modal transportation	-+
7	Street design	Local access road	-	Local access road	-

(-) : same condition, (-+) : some upgrading, (+): better condition

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Compactness analysis of existing Kampong Code and proposing flat rental of Kampong Code

(Roychansyah, 2008).

No	Characteristic	Existing Kampong Code	Status	Proposing Flat Rental	Status
8	Building design	Building close the street, squatter	-	Building close the street, flat rental	+
9	Public space	Less public space	-	Every flat rental has public spaces in ground floors and surroundings	+
10	Development costs	Uncontrolled development, high risks of flood	-	Controlled	+
11	Planning process	No planning process	-	Planning process	+

(-) : same condition, (-+) : some upgrading, (+) : better condition

(-) : 1, (-+) : 4, (+) : 6

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Conclusion

- Kampong Code is Informal Settlements (squatter area):
 - Inhabitants: 3,74% of city population
 - Area: 3,8% of city area.
 - Distance from main road: 100 m (Easy access to main road and public transport)
 - Distance from city center: 1,7 km from city center
- Kampong Code has brought compactness on squatter area.
- Kampong Code has been planned to become:
 - residential area,
 - natural protection area, and
 - cultural area (Yogyakarta Municipal Regulation 2006-2011 on Land Use)

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Conclusion

- Nowadays, in Kampong Code there are 2TB: 192 houses & 146 houses.
- Based on analysis Code still need 16 TB (sec. 1), 9 TB (sec.2), 16TB (sec.3), 13TB(sec.4).
- Build flat rental:
 - density number will increase (ten times)
 - well organized kampong, not squatter,
 - Land need: 8-13% of each section area.
- Flat rental has changed compactness type from homogenous → concentration
- The maximum increasing flat rental are 2 TB in five years with 0,4ha in each section.
- The remaining area can be converted become public spaces and green area.
- From 11 characteristics of compact city, proposed flat rental will create several condition in Kampong Code: better (6 items), some upgrading (4 items) and same conditions (1 item).

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Terima kasih

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THANK
YOU!!

