

# INTRODUCTION TO KOTA SOLO AND ITS URBAN SYSTEMS

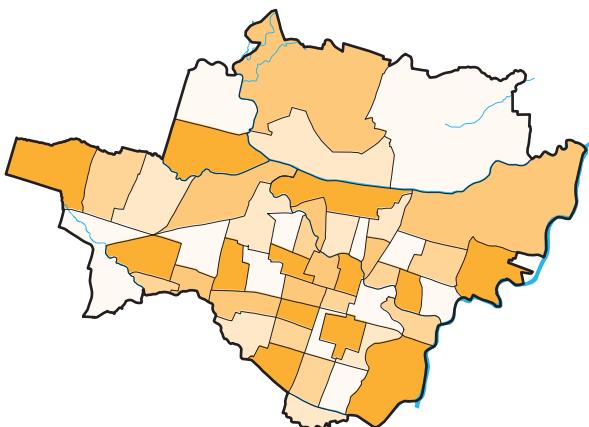




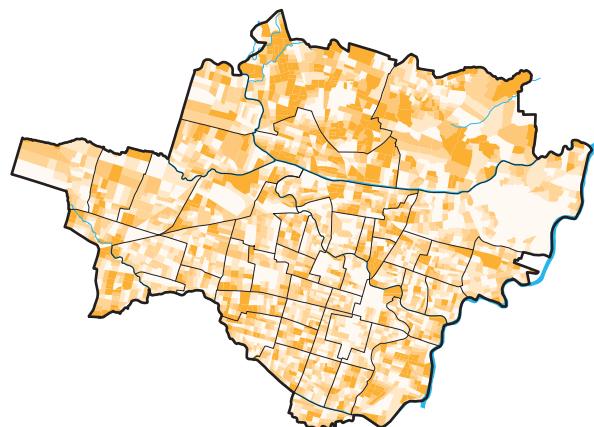
**1 Kota**



**5 Kecamatan**



**51 Kelurahan**



**2,700 RT**

## Different Scales for Understanding the City

The many levels of administrative boundaries in Solo provide different scales – larger and smaller areas of the city – to map and study Solo. These boundaries include the municipal boundaries, districts, neighborhoods, and RTs (this page); a public well in Gandekan and a drainage canal in Ketalan (facing page).



## WHAT IS SOLO?

Solo is a city made up of neighborhoods. People care about the development of their city, but it is often their neighborhood that they feel the closest affinity for.

Development happens at two levels – the neighborhood and the city. The local participatory budgeting process – known as musrenbang – is a way for residents to make their voices heard when the municipal government makes short-term improvements to neighborhoods. Musrenbang is also a way for local government to promote the development of the city as a whole through investments in neighborhoods.

This project – Solo Kota Kita – provides information about neighborhoods that residents can use to inform how they set priorities in musrenbang. The tools offered by this project are intended to help residents understand their neighborhood better. But what does it mean to think about the city as a whole?

Understanding how a neighborhood fits into the city is not so hard – just think about how your neighborhood connects to its surroundings and urban systems.

Streets, paths, and bridges provide physical connections to other neighborhoods. Some city services – like rubbish collection – are shared by many neighborhoods. Similarly, community resources like schools and neighborhood centers are located in all neighborhoods. Lastly, the treatment of environmental resources like river water in one neighborhood impacts the condition of the resource in other neighborhoods.

## THE “UNITS” OF SOLO

For this project, there are four important units or levels for understanding Solo: the city, the kecamatan (urban district), the kelurahan (neighborhood), and RTs.

The city of Solo has 576,000 residents. The entire area of the city includes 4,600 hectares. Both the Government of Indonesia and the local municipal government collect basic statistics on population for the city. Some indicators can be understood at the city level. For example, population density is 100 people per hectare. The overall poverty rate is 16%.

The city is divided into five kecamatan – urban districts. The kecamatan include many kelurahan – neighborhoods. People are less likely to identify with their district than their neighborhood. However, knowing the poverty rate or the level of access to services in the district is useful because you can make comparisons between an individual neighborhood and the surrounding neighborhoods.

The city has 51 neighborhoods. Our project gathered data for each neighborhood in Solo. With the data, we can understand averages for different indicators such as school attendance, access to water, and poverty.

Lastly, every neighborhood is divided into RTs. RTs are the smallest administrative unit in Solo. Each RT has a Ketua RT – RT leader – and it is from them that we gathered the data for this project.



#### NEIGHBORHOOD TYPOLOGIES

- █ The Heart of Solo      █ Growing Edge
- █ Old Areas of Settlement      █ Mixed Up Areas
- █ Riverbank Areas

## Different Kinds of Neighborhoods

Neighborhoods in Solo vary in their use and character – the type of neighborhood depends on when it was developed, who lives there, and the kinds of activities that happen there (this page); a public park in Manahan, school-children in Jagalan, and dense housing in Baluwarti (facing page).



## FIVE KINDS OF NEIGHBORHOODS

Not all neighborhoods are the same in Solo. Some are older than others - Laweyan, for example, was settled much earlier than Mojosongo, which is still expanding. Some neighborhoods have more poverty than others. While some neighborhoods have many historic buildings, others are known for being next to the rivers.

A neighborhood is basically a settled area that you can walk around in 5 to 10 minutes. Neighborhoods have institutions that support the population like schools and community centers. Residents share common amenities like markets and open spaces. By living in a neighborhood, people gain access to housing and employment.

However, not every neighborhood provides all of these things to residents. Especially in Solo, different neighborhoods have different needs, so it's important to know the characteristics of the neighborhood you live in.

We identify five basic kinds or "typologies" of neighborhoods based on the data we collected, talking to residents, and making maps of the city. The neighborhood types include:

### ***The Heart of Solo***

These neighborhoods are located in central Solo, especially along Jalan Slamet Riyadi. They have many businesses,

hotels, and markets as well as Solo's centers of government and economic activity.

### ***Old Areas of Settlement***

These neighborhoods are in central Solo, but this type also includes historic areas like Laweyan. They have stable populations with older residents and good services and are mostly residential.

### ***Riverbank Areas***

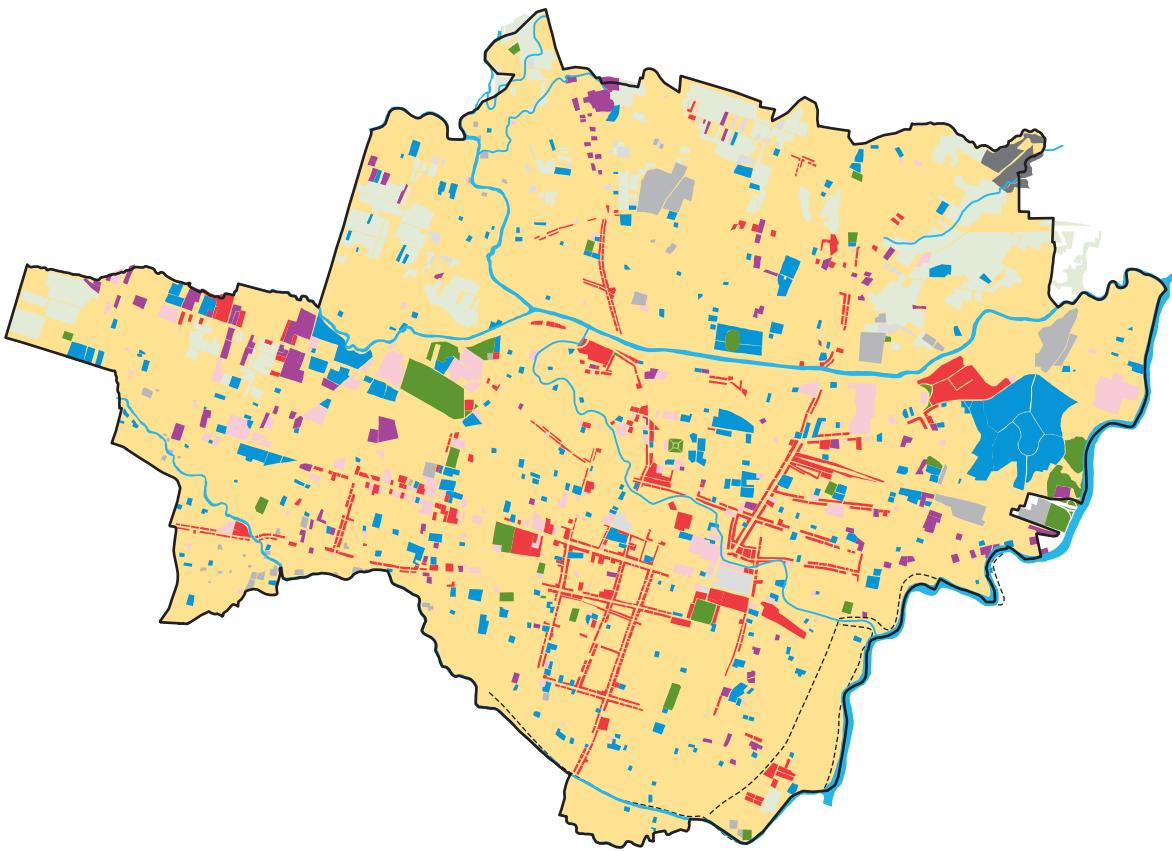
These neighborhoods are located in the south and east. They are denser than other neighborhoods and have more poverty. Especially in the south, many residents migrate back and forth across to Sukaharjo for employment and housing. These areas commonly flood and have environmental issues.

### ***Growing Edge***

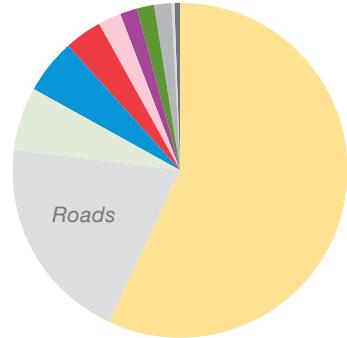
These neighborhoods are in the north and west where residential development is replacing agricultural fields.

### ***Mixed Up Area***

These neighborhoods have factories and markets mixed with housing and large institutions. "Mixed up" neighborhoods are busy places with many economic opportunities, but many environmental issues because industrial uses conflict with housing.



LAND USE	HECTARES	% of TOTAL
Residential	2,621	57%
Commercial	169	4%
Commercial (Office)	105	2%
Institutional (Schools)	238	5%
Industrial	81	2%
Open Space and Recreation	75	2%
Agriculture and Rice Fields	286	6%
Cemeteries	67	1%
Land Fill	16	0.5%
Vacant Land	22	0.5%
Roads (not shown on map)	920	20%



## Land Uses Give Neighborhoods Their Functions and Character

While the major land use in Solo is housing, in most neighborhoods other uses – such as schools, factories, and commercial districts – are located very close to and within residential areas (this page); schools in Jebres, a commercial district in Setabalan, and rice fields in Jajar (facing page).



# UNDERSTANDING URBAN SYSTEMS

Urban systems tie Solo together. Systems are both physical – like water delivery systems – and non-visible – like the economy. Systems provide services, connect neighborhoods to one another, and meet the needs of residents. Because systems are interconnected, a problem in one part of the city can become a problem for everyone. For example, waste-water from batik factories cause pollution in all the neighborhoods along the rivers.

Solo Kota Kita focuses on the role of participatory budgeting for making improvements to neighborhoods. However, it is important to understand how short-term improvements contribute to larger urban systems. For example, a new city park might connect to the city's overall parks system. Cleaning up the river will be more effective if all neighborhoods contribute. Oftentimes, residents can advocate for a specific improvement in their neighborhood if they can show how it will benefit the city as a whole.

## FOUR URBAN SYSTEMS

### *Land Use*

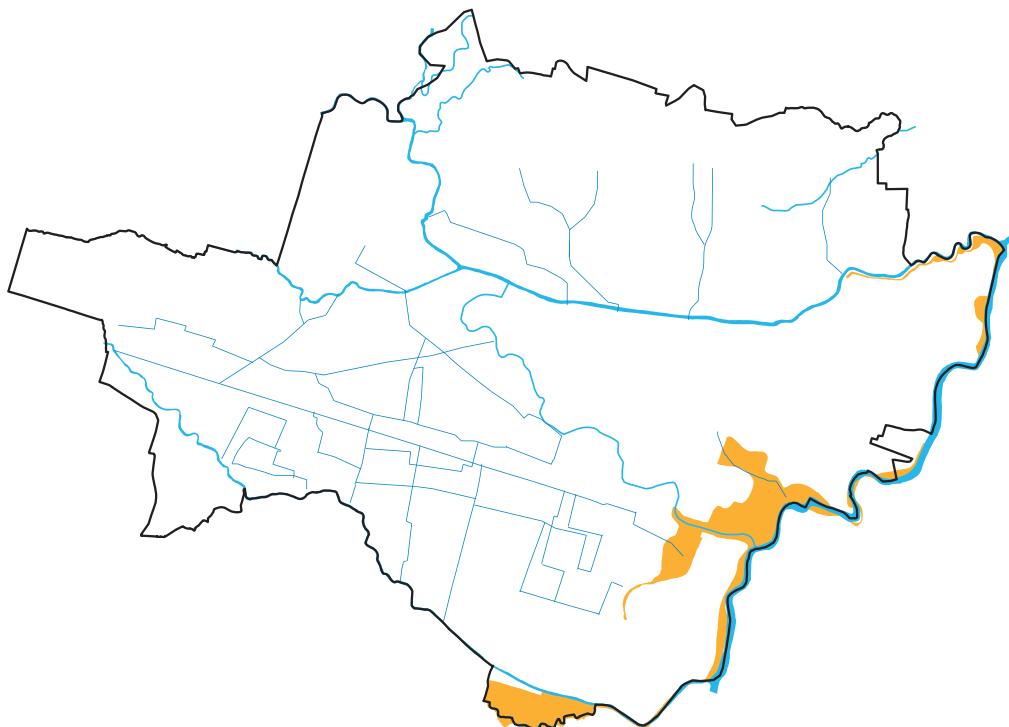
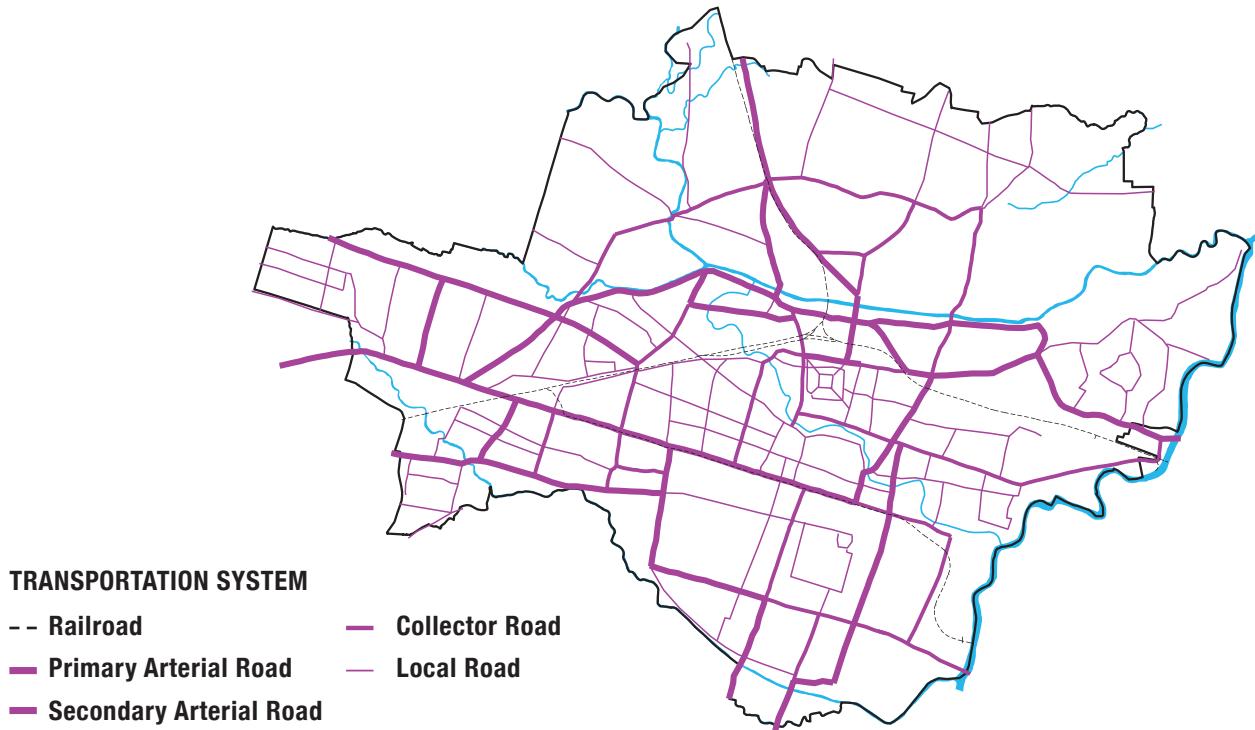
Land use means how land is used. In cities, similar land uses are generally developed in the same area. City planners write a zoning ordinance which says where specific uses can be developed. However, zoning only works if the city has capacity to enforce it.

### LAND USE FACTS

- Solo is mostly residential – 64% of the land area (2900 hectares) is housing.
- Commercial activity is located along three main corridors – Jalan Slamet Riyadi, JL. General Urip Sumoharjo, Jalan Yos Sudarso
- Industry is located everywhere in Solo, but there are concentrations in eastern and western neighborhoods including Pucang Sawit, Semanggi, Sewu, Pajang, Kerten, Jajar, and Karangasem

Land use issues include:

- Industrial uses create pollution and noise near housing.
- There is a lack of parks and open space – only 0.2 hectares per 1,000 residents – An international standard is 2 hectares per 1,000 residents.
- Development of remaining agricultural areas reduces sources of local food production.



## Urban Systems Provide Major Connections in the City

For the most part, the utility distribution network follows the major roads and streets in Solo. This is especially true of the drainage system, which connects to the natural systems of Solo's four major rivers.

## TRANSPORTATION FACTS

- Most people use motorbikes to get around.
- Solo is compact and so main roads provide access to most of the city in little time – main roads include Jalan Slamet Riyadi, Jalan Adi Sucipto, Jalan Dr. Rajiman, Jalan Kol. Sugiono, Jalan Sumpah Pemuda, Jalan Brigjen. Katamso, and Jalan Kihajar Dewantoro
- Solo has regional bus and railroad connections to Jogja, Semarang, and Surabaya

## WATER FACTS

- Solo has four major rivers – Kali Anyar, Sungai Jenes, Kali Premulung, and Bengawan Solo. These rivers flow from east to west and drain into Bengawan Solo.
- A system of drainage canals collects water in central Solo and channels it into the rivers. There are no canals in some central and eastern neighborhoods – like Tegalharjo and Jebres – because the hills in this area make water drain naturally.

### *Transportation*

The transportation system is made up of all the different means people use to get around Solo – walking, motorbike, automobile, becak, buses, and trains. Transportation planning considers how to move people around the city as well as provide service routes for economic activity. In the future as petroleum resources decline, alternatives to motorbikes and cars will have to become more commonly used.

Transportation issues include:

- Solo is very compact and so it's easy to walk to markets, employment centers, and community facilities – however, there are very few sidewalks and pedestrian areas.
- Lack of public transportation system.
- Air pollution from motorbikes.

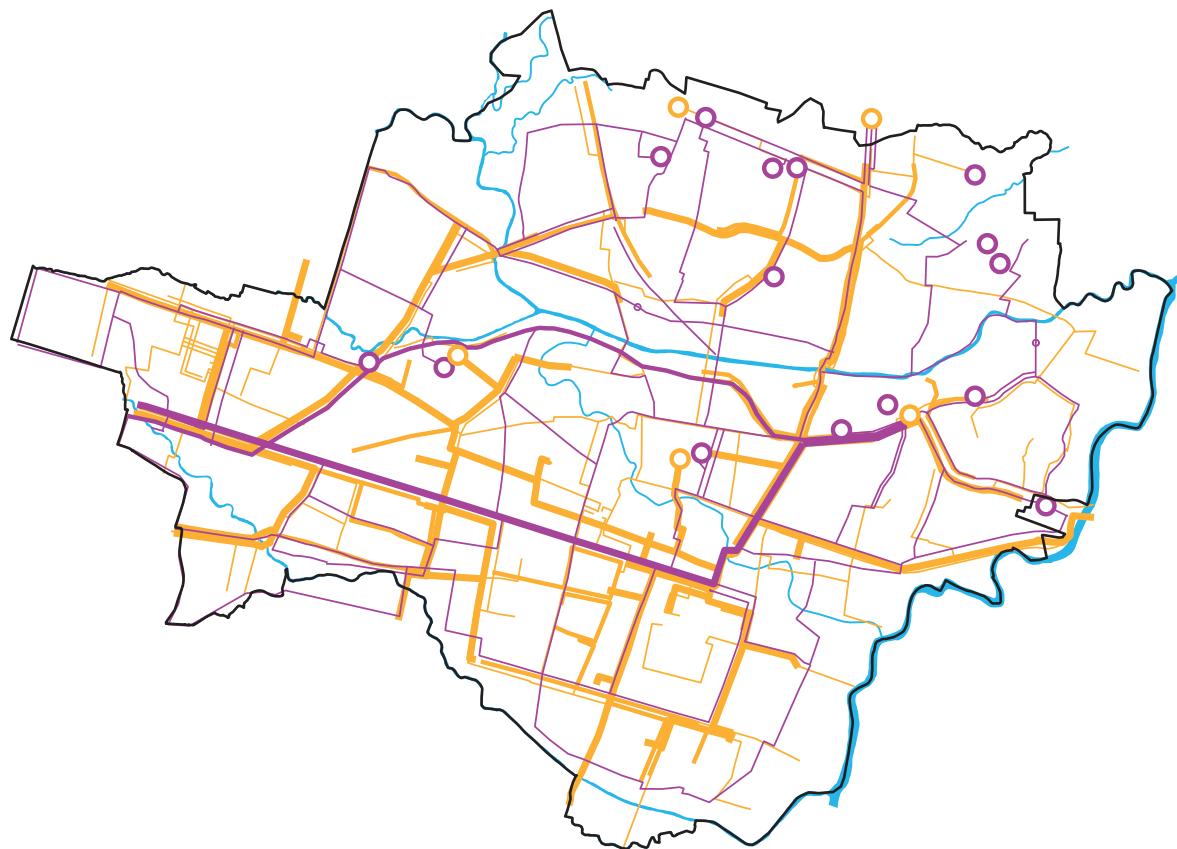
### *Water*

There are many different, but interrelated water systems in Solo that are both natural and man-made. These include

drinking water from wells and PDAM piped water service – this is discussed in the section below for utilities. The system also includes drainage through rivers, creeks, and drainage canals. Water connects people in Solo in many different ways, especially when pollution and poor sanitation lower the quality of neighborhood water. Continued irregular weather brought about by global warming can cause unpredictable rains that leave the city flooded.

Water issues include:

- Flooding.
- Pollution going downstream from factories.
- Unsanitary conditions in rivers and drainage canals.
- Flooding damages housing and infrastructure along riverbanks.



#### UTILITY SYSTEM

- |                            |                             |
|----------------------------|-----------------------------|
| — Primary Water Pipe       | — Primary Electrical Line   |
| — Secondary Water Pipe     | — Secondary Electrical Line |
| — Tertiary Water Pipe      | — Tertiary Electrical Line  |
| ○ Deep Well                |                             |
| ○ Water Treatment Facility |                             |

## Urban Systems Provide Major Connections in the City

*Major electrical power lines enter Solo from the east and then are distributed throughout the center of the city; sources for piped water are concentrated in the northeast neighborhoods, including Keprabon and Mojosongo (this page); bencaks in Sangkrah, drainage in Joyosuran, and power lines in Jajar.*



## Utilities

Utilities include power and communication lines and are usually visible in neighborhoods as above-ground wires and cables. Utilities also include piped water delivery, known in Solo as PDAM.

### Utilities Issues

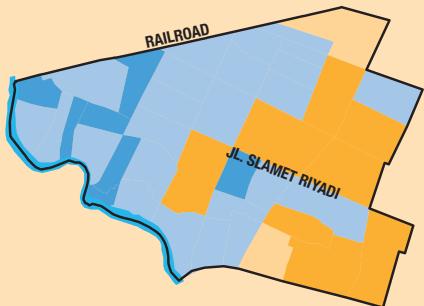
- As Solo expands in the west and north, more capacity will need to be added to the power and communications systems.
- Expanding PDAM will increase sanitation levels, but it is difficult to extend into areas that are already developed.

## UTILITIES FACTS

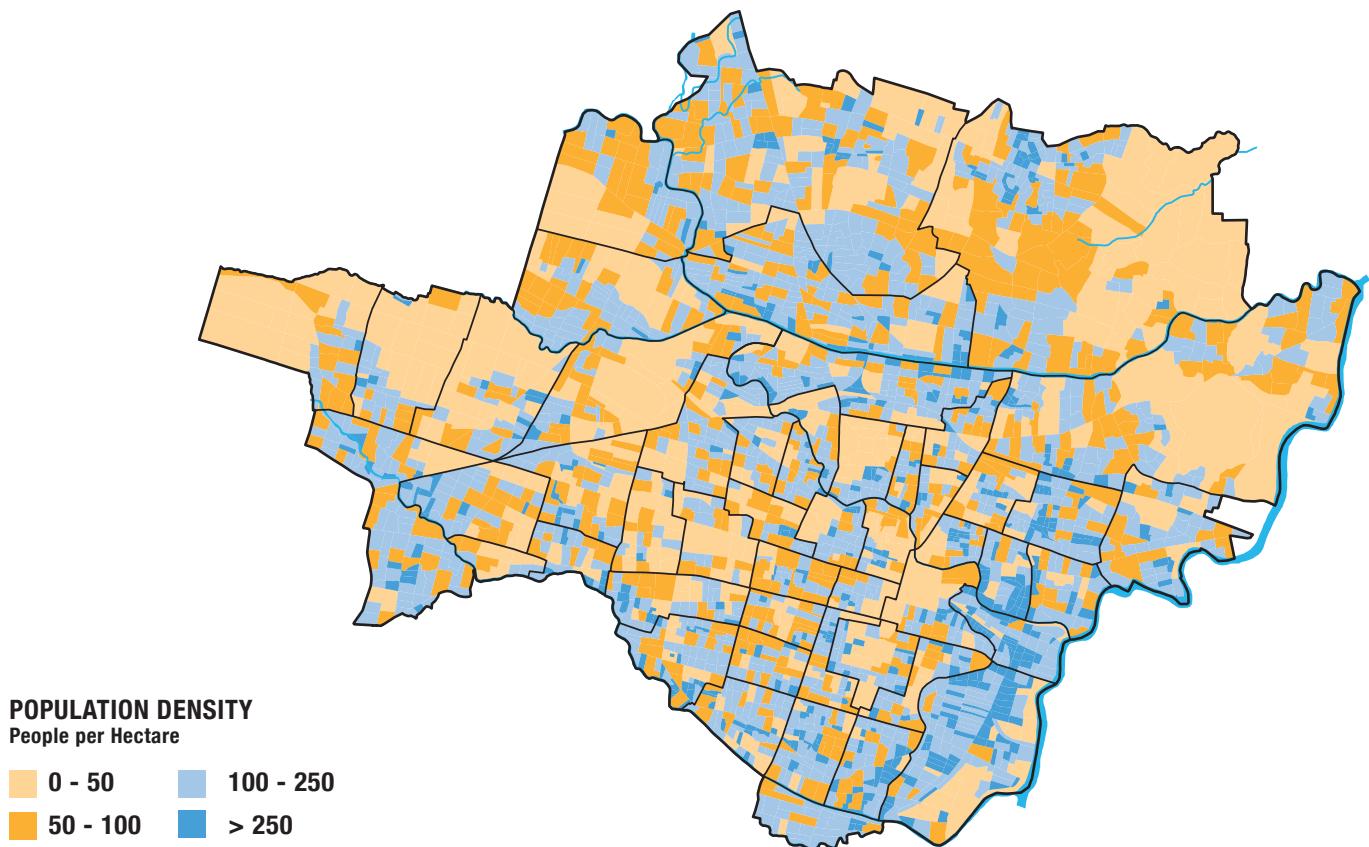
- The main power and communication line comes into Solo from the west along Jalan Adi Sucipto and Jalan Slamet Riyadi; power and communication is then distributed through secondary cables in the neighborhoods.
- Water travels in pipes under major roads; because local roads are narrow, PDAM is difficult to install in developed neighborhoods.

## CASE STUDY: DENSITY

### Sondakan



- Density is high along the river and railroad, where land value is low and people live without title to their housing.
- Density is lower along Jalan Slamet Riyadi where there are more commercial buildings than residential buildings.



### Many Reasons for High Density in Solo

Whereas Pajang has many migrants, in Semanngi, many people crowd into housing near the markets. Sewu has a large areas of poverty, while in Mojosongo there is high density because many students live there in inexpensive housing. There is low population density in areas of new settlement like Karamgasem and Jajar. Both undeveloped areas – like Mojosongo – and well-established older areas of settlement – like Punggawan – also have low density (this page); dense housing in Gandekan (facing page).



# LOOKING FOR PATTERNS

## INTRODUCTION TO THEMATIC DATA

Solo Kota Kita presents “thematic” data about neighborhoods. Each “theme” is a different category of social or economic data. These include education, water, sanitation, housing, poverty, and health. These are the very same indicators that are tracked by the Ketua RT (neighborhood leaders) throughout the city.

There are two important things to remember about thematic information.

First of all, gathering data based on the RTs in Solo allows us to make a map of how the indicators are related to the space of the city. For example, we can see where there are concentrations of poverty or where water service is low.

Next, it’s important to consider that indicators are often interrelated – one indicator causes another one. For example, there may be many youth out of school because their families are poor and they are working to support family income. In this case, the high poverty rate causes there to be a high level of absenteeism.

Here’s a couple of examples of how to interpret thematic information.

### POPULATION DENSITY

This map shows population density. Population density is a measure of how many people live on a single hectare. In Solo, the population density is about 100 people per hectare. This means that, on average, about 20 to 30 families are living on a hectare of land in Solo. This is high, but density varies

### QUESTIONS ABOUT DENSITY FOR NEIGHBORHOOD PLANNING

- How high is density in our neighborhood?
- Is this similar or different than in other neighborhoods?
- What is happening in the city that is causing density to be the way it is in our neighborhood?

from neighborhood to neighborhood in Solo. In Semanngi, for example, most of the neighborhood has a density of over 150 people per hectare. In contrast, much of Manahan has a population density of less than 50 people per hectare.

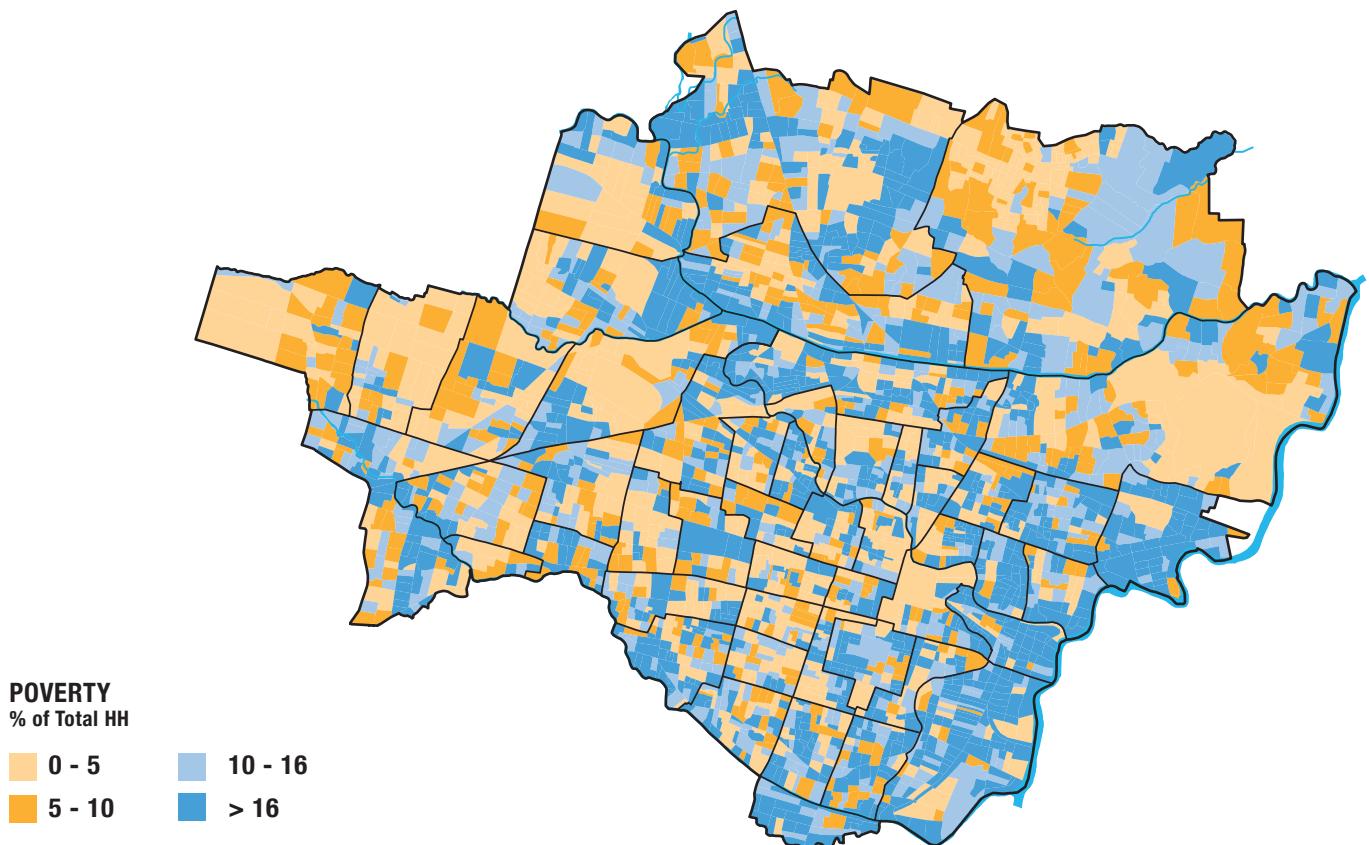
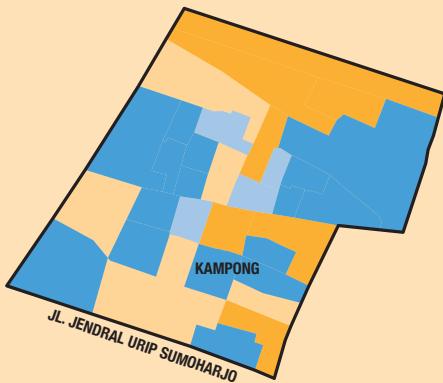
Population density often reflects other trends and conditions in the city. For example, areas with high density may be where many migrants with little money are crowding into housing. Areas with poverty usually have higher density. Density also can increase likelihood of health and sanitation risks. For all of these reasons, density provides a guide for understanding other indicators such as housing, poverty, and health.

Nevertheless, density is generally good in cities because it allows people to access what they need within walking distance of their homes. Higher densities of development also consume fewer building materials and natural resources.

## CASE STUDY: POVERTY

### Punggawan

- There is a kampong (dense area of settlement) with many poor families that is surrounded by housing for higher income people.
- There are both high and low levels of poverty along Jalan Jenderal Urip Sumoharjo.



### Some Neighborhoods have More Poverty than Others

Every neighborhood in Solo has poverty. Poverty is not concentrated in single large areas – like in Jakarta – which makes it difficult to see patterns. Poverty tends to be located near railroads, rivers, and government owned land. Many areas have a mix of income groups – such as Purwodinigratan, Punggawan, and Nusukan (this page); dense housing in Ketelan and Punggawan, children from housing built close to the railroad tracks in Manahan (facing page).



## POVERTY

This map shows the percentage of families in each neighborhood who are in poverty. Overall, 16% of families in Solo are in Poverty, though this rate varies from neighborhood to neighborhood.

The Government of Indonesia has a complex definition of poverty that considers housing standards, access to utilities, nutrition, occupation and income, education, and savings. While there are many places in Solo with concentrations of poverty, there are also many neighborhoods with a mix of income groups.

Poverty often indicates a lack of access to education, employment, and urban services. Yet everyone in the city benefits when there is less poverty because the local economy is stronger and people have healthier lives.

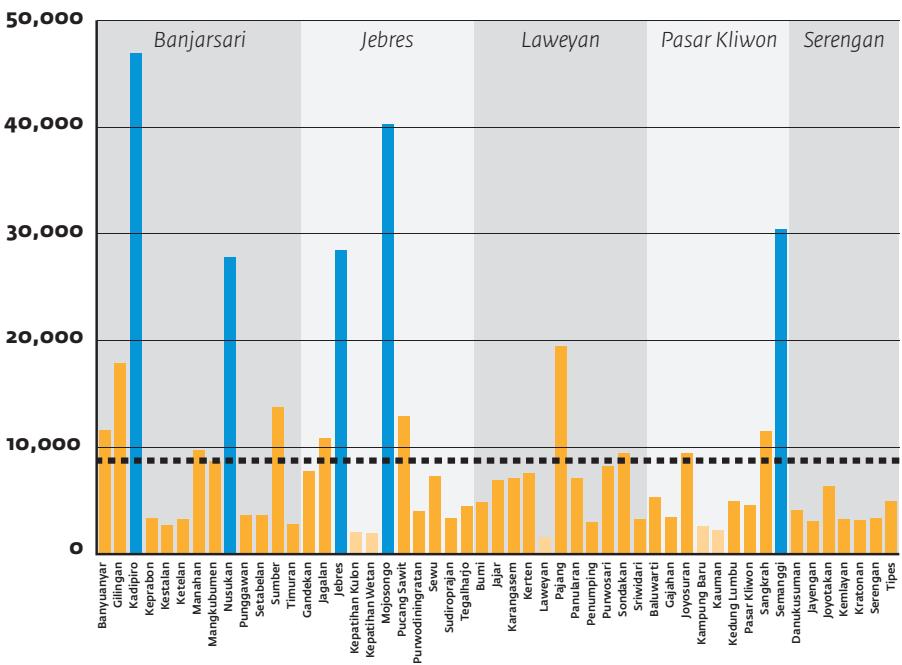
## QUESTIONS ABOUT POVERTY NEIGHBORHOOD PLANNING

- Is poverty high or low in your neighborhood compared to other neighborhoods?
- What city systems do people who are in poverty lack access to?
- Is poverty concentrated in a certain area such as along riverbanks or near the market?

## TOTAL POPULATION



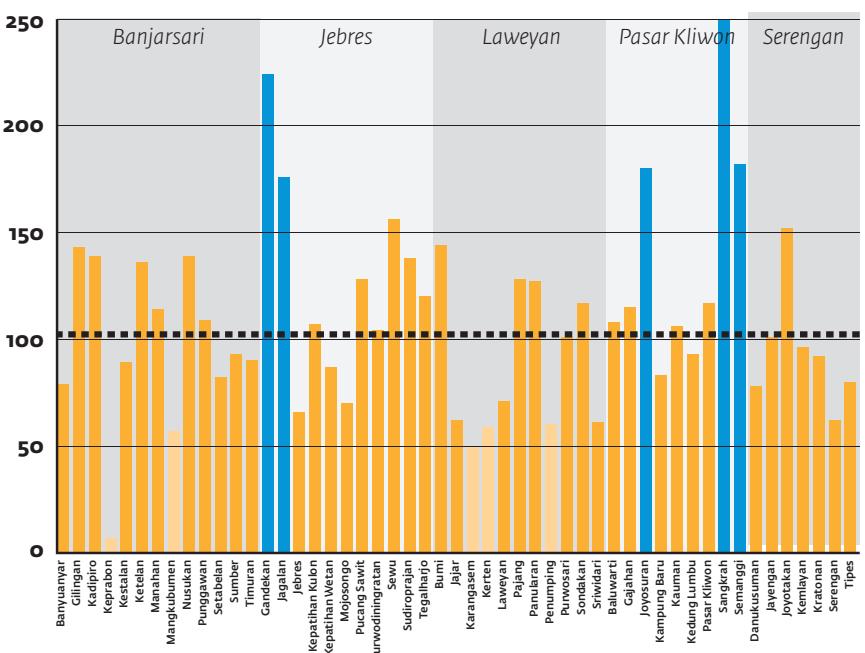
Top 5  
Lowest 5



## POPULATION DENSITY



Top 5  
Lowest 5



## DEFINITIONS OF INDICATORS

Population – The total number of people who live in the neighborhood

Population Density – The total number of people who live on one hectare of land

% Youth Out of School – The percentage of children age 7 – 18 who are not in school

- Our survey measures youth out of school differently than many municipal indicators, which only include children up to the age of 16.

% HH with PDAM – The percentage of households with PDAM piped water service

% HH with Public Wells – The percentage of households using public wells

% HH with Private Wells – The percentage of households using private wells

% HH with Public WC – The percentage of households using public toilets

% HH Private WC – The percentage of households using private toilets

% HH with Land Tenure – The percentage of households that have a title to their land

% HH in Poverty – The percentage of households that are in poverty.\*

- The Government of Indonesia bases poverty on the number of households that receive a subsidy every three months. In order to qualify for the subsidy, a household must meet 14 criteria which relate to housing, utilities, nutrition, income, education, and other factors.

## MEASURING YOUR NEIGHBORHOOD

### MAKING COMPARISONS AMONG NEIGHBORHOODS

Once you've thought about how your neighborhood relates to city systems and reviewed the thematic information, a basic way to assess how your neighborhood is doing is to make a simple comparison. Given an indicator, does your neighborhood rank higher or lower than the neighborhoods around it and the city as a whole? For example, in Purwosari 13% of households are in poverty. This is the same rate as in Kecamatan Laweyan, which means the levels of poverty in Purwosari more or less reflect the levels of poverty in the 10 surrounding neighborhoods. The poverty rate in Purwosari is also lower than the rate in Solo, which is 16%.

Making these basic comparisons can help to show what neighborhoods or areas of the city should be targeted for

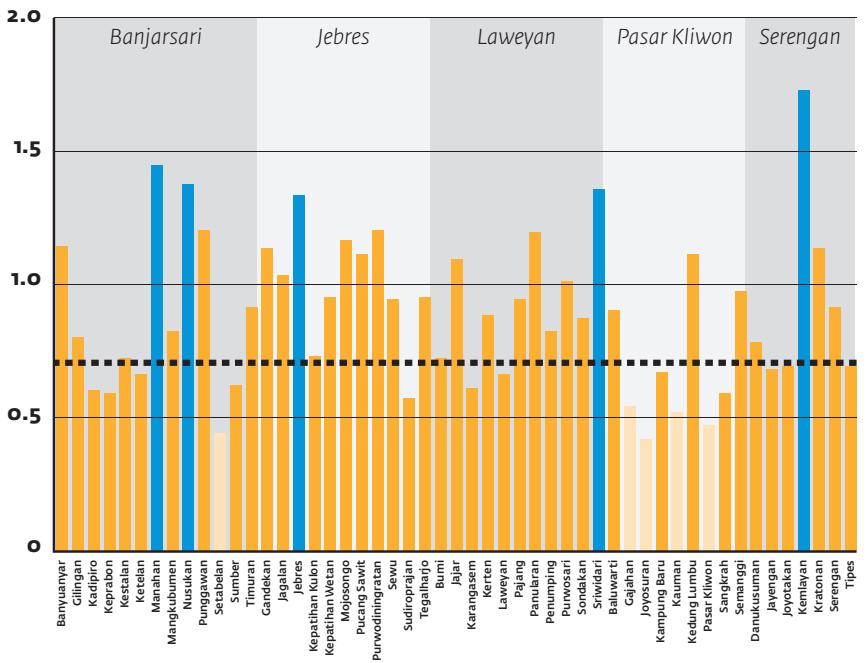
improvement. In other words, making comparisons helps to show where the greatest needs are located. In the case of Purwosari, the 13% poverty rate there is much lower than the rate in Bumi, which is 20%. Because the rate in Bumi is even higher than the rate in the city, Bumi may need more programs targeting poverty than Purwosari.

It is important to keep in mind that indicators are very complex and interrelated. And so making these kinds of comparisons based on rankings should only be the first step towards understanding what is happening in a neighborhood. Just because one neighborhood ranks higher than another for a certain indicators should not be seen as the basis for a decision – but it should prompt you to look at the area closer and ask more questions.

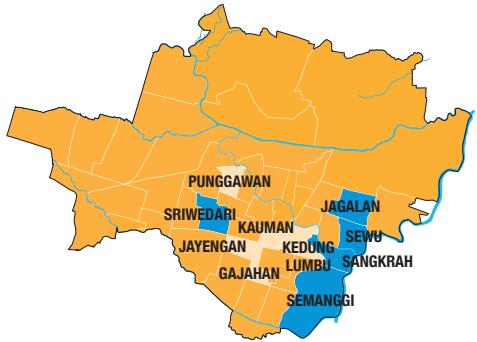
## DEPENDENCY RATIO



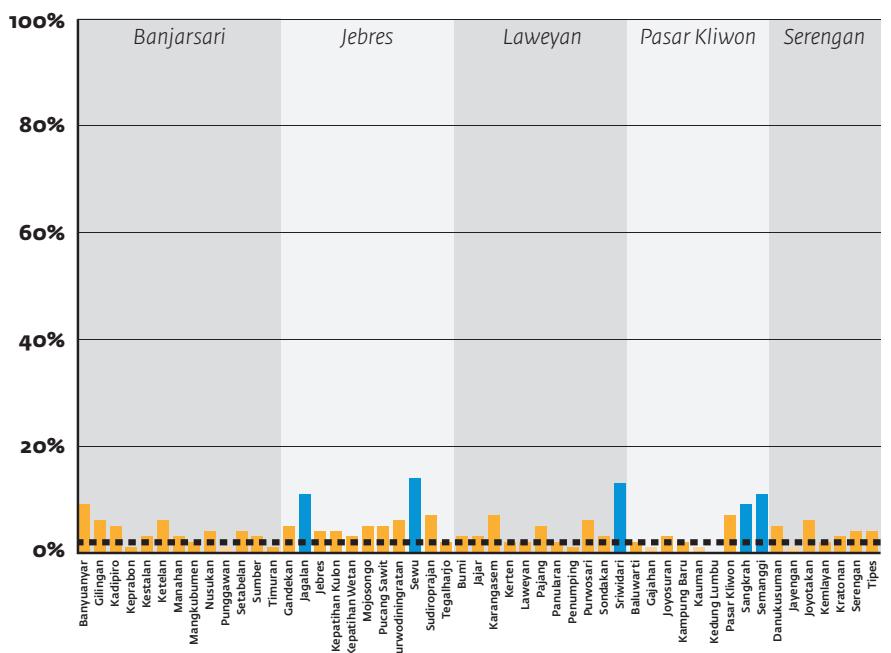
Top 5  
Lowest 5



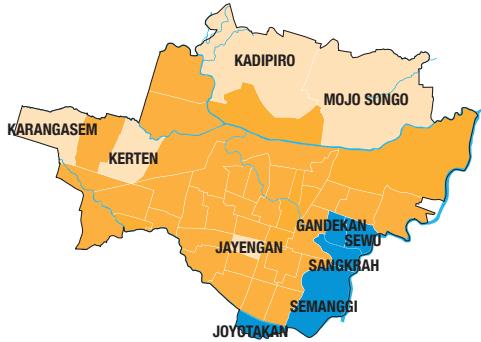
## % NO SCHOOL



Top 5  
Lowest 5

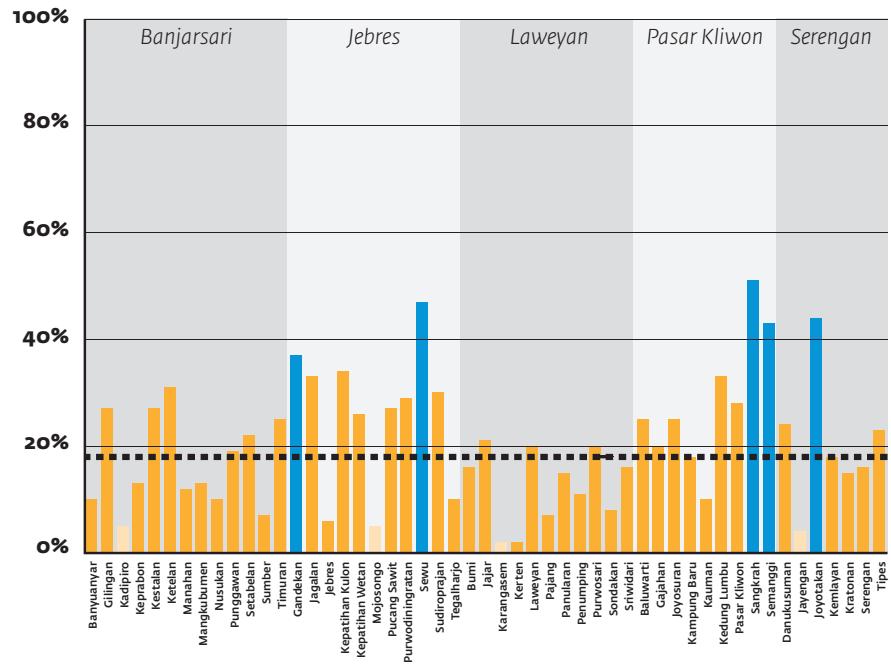


## % HH with PUBLIC WC



Top 5

Lowest 5

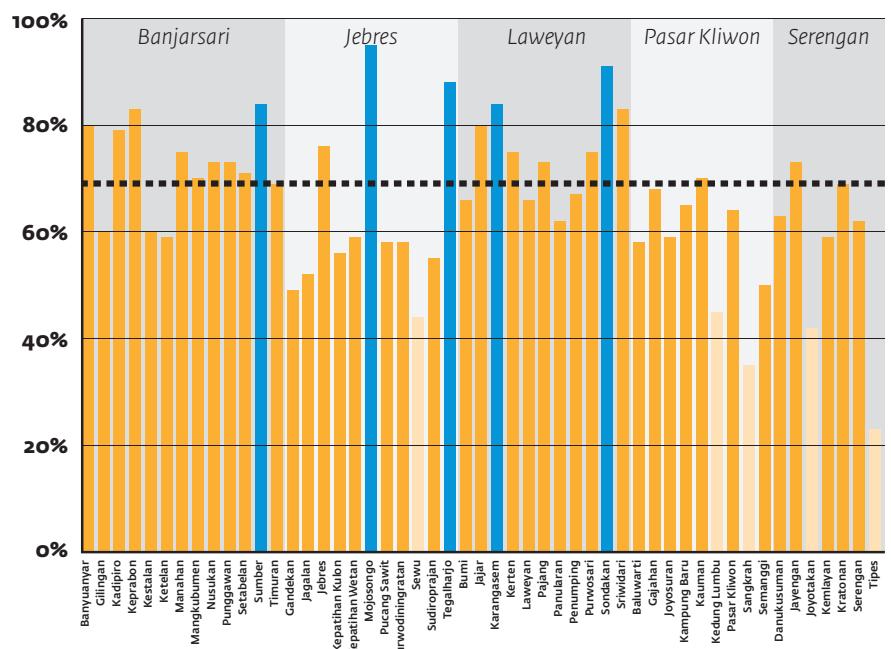


## % HH with PRIVATE WC

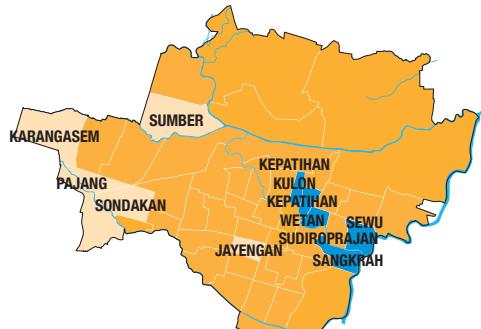


Top 5

Lowest 5

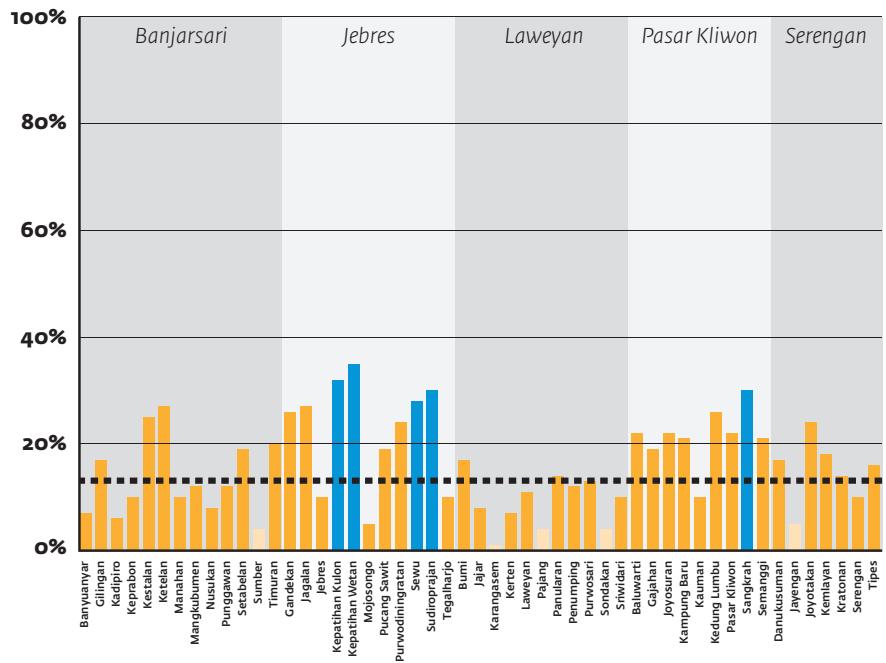


## % HH with PUBLIC WELLS



Top 5

Lowest 5

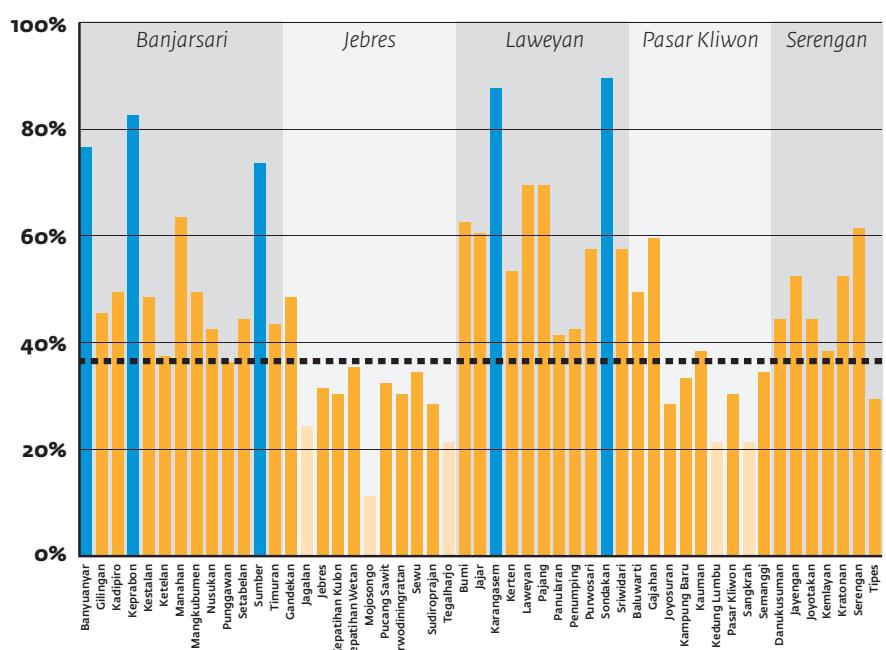


## % HH with PRIVATE WELLS



Top 5

Lowest 5

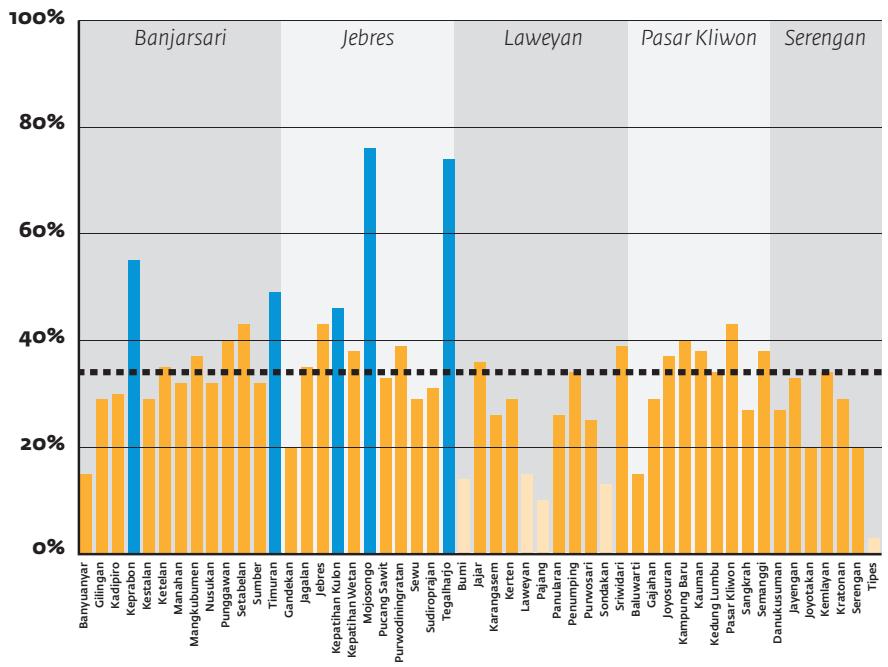


## % HH with PDAM



Top 5

Lowest 5

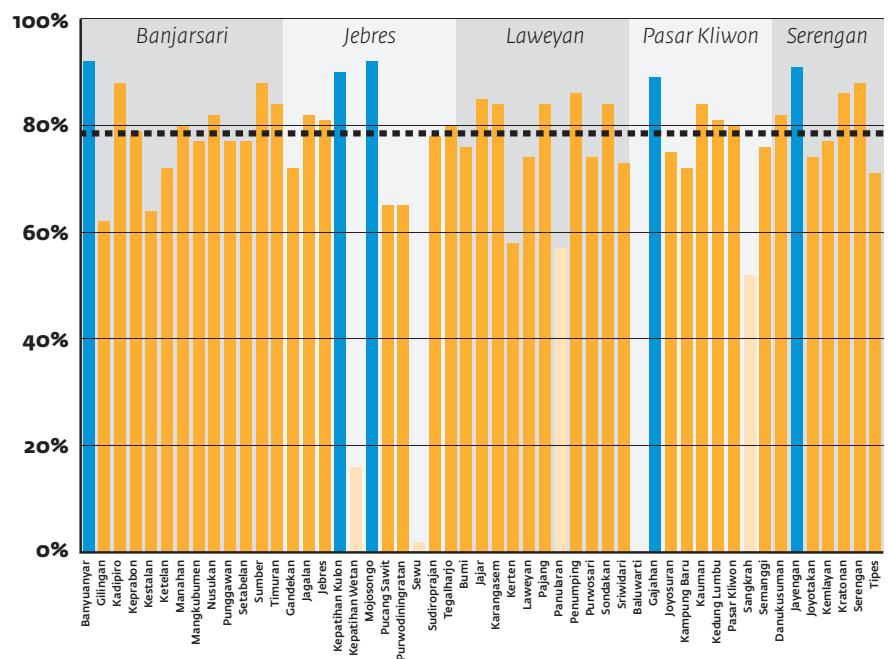


## % HH with LAND TENURE

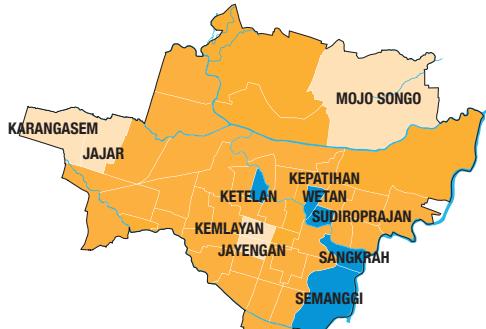


Top 5

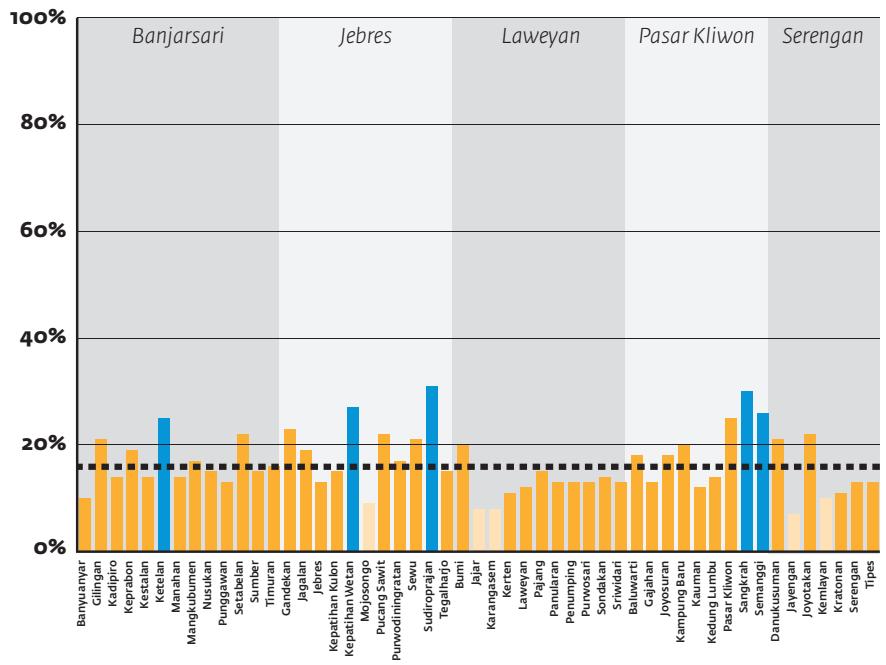
Lowest 5



## % HH with POVERTY



█ Top 5  
█ Lowest 5



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