



# Bandung

## Kecamatan Profile

Climate and Disaster Resilience

Sukasari, Sukajadi, Cicendo, Andir, Cidadak, Coblong  
 Bandung Wetan, Sumur Bandung, Cibeunying Kaler  
 Cibeunying Kidul, Astanaanyar, Bojongloa Kaler  
 Babakan Ciparay, Bojongloa Kidul, Bandung Kulon  
 Regol, Lengkong, Batununggal, Kiaracondong, Arcamanik  
 Cibiru, Antapani, Ujung Berung, Rancasari, Buahbatu  
 Bandung Kidul, Panyileukan, Cinambo, Mandalajati, Gedebage



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# Foreword

Dada Rosada / Mayor of Bandung




MAYOR OF BANDUNG

## FOREWORD

Bandung is currently facing huge urbanization trend, characterizing by city's rapid population and economic growth. This phenomenon has consequences in the pressure of physical infrastructure, social-economic and cultural conditions, institutional systems and arrangements, and natural environmental conditions of the city. Currently there are rising concerns that due to impacts of climate change, the intensity and frequency of natural hazards that ultimately lead to more severe disasters could accelerate the risks and threaten the ability of Bandung City to withstand such events.

This report aims to assess the urban disaster risks comprehensively in adopting a multi-stakeholder approach in order to build city resilience. This report contains study that focuses on the condition of thirty sub-districts in Bandung as an effort to understand the condition and capacity of the city as well as to provide Bandung City Government with analysis on how to evolve the city in becoming more resilient and prepared to such future climate-related disasters. This is very much needed and appreciated by the Government of Bandung City.

In this opportunity, allow me to express my appreciation to the research team led by Professor Rajib Shaw from Kyoto University, Japan in close collaboration with Taufik Rachman and dr. H. Gunadi S. Binemas, former and current Head of Bandung City Planning and Development Agency and Kamalia Purbani at the time of the research as Secretary of Bandung City Planning and Development Agency now expert staff for Information and Technology of Bandung City, and Center for Disaster Mitigation now changed to Research Center for Disaster Mitigation of Institut Teknologi Bandung in their efforts to make this study possible. I am confident that this study will be most valuable for Government of Bandung City in the development planning process of the city and an embark point of our effort in mainstreaming and building the resilience of Bandung City.

Dada Rosada  
  
Mayor of Bandung  
Bandung City Government

# Message

**Prof. Dr. Wawan Gunawan A. Kadir, MS**

Vice-Rector of Research and Innovation,  
Institut Teknologi Bandung



## FOREWORD

ITB in its mission to become a World Class University has set the strategic agenda in its research and community services activities. In line with this mission, all research and community services programs of ITB have been managed to be competitive and accountable, aiming at excellent product with international standard. In 2011, ITB has executed priority research programs in seven fields: 1) Infrastructure, Disaster Mitigation, and Territorial, 2) Energy, 3) Information and Communication Technology, 4) Food, Health, and Medicine, 5) Cultural Products and Environment, 6) Nano and Quantum Technology, 7) Biotechnology. These priority researches have been carried out by the Institute for Research and Community Services, in coordination with varieties of research groups in faculties/schools and centers. In line with this, one of the centers, namely "Disaster Mitigation Research Center" has conducted international research collaboration with Kyoto University in the Human Security Engineering for Asian Megacities.

This report compiles a study of an attempt to measure the resilience of Bandung to climate-related disasters (flood, cyclones, heat waves, droughts, etc.) by taking a truly multi-sectoral and developmental approach. Based on five dimensions (physical, social, economic, institutional, and natural), the focus in this study is to understand the capability and condition of the thirty sub-districts of Bandung to cope with such events. In this approach, we believe that micro-level analysis is best in addressing urban disaster risks adequately and comprehensively in order to build resilience. The report provides basic information that can help to build such resilience through taking appropriate actions. At it is known, urban risks and climate change are currently few of the biggest challenges that many cities faced by the consequences of large population growth rates, economic growth, and greenhouse gas emissions. Those are also about the concern on how the cities in Indonesia are prepared and aware in a changing environment which are likely to become more susceptible to increase and more frequent natural hazards.

We are grateful for the support and partnership that the Bandung City Government provided in facilitating this study to its successful completion. We are highly appreciated support from Bandung City Planning and Development Agency which was crucial in implementing the approach and ensuring a fruitful engagement with the participating sub-districts, and the thirty Leaders of sub-district. The Kyoto University, an active partner of our bilateral Memorandum of Understanding, has developed this methodology and we are grateful to them for having shared it and guiding the data collection and analysis of results. We are particularly grateful to Rajib Shaw, Yukiko Takeuchi and Farah Mulyasari of Kyoto University's Graduate School of Global Environmental Studies. I also gratefully acknowledge the support of Research Center for Disaster Mitigation and the guidance and support provided by my colleagues Dr. Krishna S. Pribadi and Dr. I Wayan Sengara and their research assistants towards the conduct of this study.

In this opportunity as the Vice Rector for Research and Innovation of Institut Teknologi Bandung, allow me to acknowledge that our research collaboration is serving the people and communities, especially of the city of Bandung. I sincere hope that Government of Bandung City finds this report useful, and use it for their future work in developing Bandung as a disaster resilient city.

November 2011

**Prof. Dr. Wawan Gunawan A. Kadir, MS**  
Vice Rector for Research and Innovation  
Head of the Institute for Research and Community Services  
Institut Teknologi Bandung

# Message

Yuzuru Matsuoka  
Professor, Kyoto University



Kyoto University Global COE Program

## Global Center for Education and Research on Human Security Engineering for Asian Megacities

### MESSAGE

World is increasingly becoming vulnerable due to its rapid urbanization and associated human induced problems, in combination with occurrences of natural events, especially hydro-meteorological or climate related hazards. Insufficient knowledge, resources and applicable technology add to this problem. This, in fact, is linked to the human security issues in the Asian urban areas. To address these problems, Kyoto University launched a "Global Center for Education and Research on Human Security Engineering for Asian Megacities" in the year 2008, with financial support from the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT). The GCOE aims to help in designing and managing cities that enables their citizens to live with dignity, in comfort and free from the potential threats of environment and disaster related issues.

Over the last three years, GCOE was supporting innovative research practices all over Asia. As a part of the GCOE research project "Climate and Disaster Resilience Initiative (CDRI)," the International Environment and Disaster Management (IEDM) Laboratory of the Graduate School of Global Environmental Studies of Kyoto University had conducted field based action research in participation with local governments, academic institutes and non-government organizations in Asia. CDRI developed and tested a multi-disciplinary planning tool to assess city's resilience to climate-related hazards by measuring five dimensions: physical, social, economic, institutional and natural. Through an exhaustive questionnaire, data are collected at city, sub-district levels, and ward levels, and the analysis is used for the training and capacity building of the local government officials to enhance the disaster resilient city planning process.

It is a pleasure to present the findings of the analysis of the 30 sub-districts of Bandung City, which has been done in close collaboration with the Government of Bandung City and Institut Teknologi Bandung. There has been a series of consultation processes and workshops over the last one year to produce this output, and I am thankful to the Mayor of Bandung and Vice Rector of Institut Teknologi Bandung for their support in making this study successful. I strongly believe that the study will be beneficial for Bandung and its people towards a disaster resilient city.

On behalf of the GCOE, I am looking forward to bring this fruitful collaboration to a success and would like to extend technical support in future if required.

Yuzuru Matsuoka

Professor and Program Leader

Kyoto University GCOE Human Security Engineering for Asian Megacities



# Introduction

## Climate and Disaster Resilience Index for Kecamatan in Bandung

Bandung City is the capital of West Java province in Indonesia, and the country's third largest city, and 2<sup>nd</sup> largest metropolitan area with a total population of 2,393,633 people and an area size of 167.67 km<sup>2</sup>, according to the 2010 preliminary Census. After the Indonesian independence in 1945, the city experienced rapid development and urbanization, which has transformed Bandung from an idyllic town into a densely populated urban area with an average population density of 14,275.9 people/km<sup>2</sup>. Bandung City is located at 768m above sea level and thus, due to its elevation the climate is cooler than in most Indonesian cities. It is classified as humid with an average yearly temperature of 23.1 °C (Bandung Station of Meteorology Geophysics Agency in Bandung, 2008). The average annual rainfall ranges from 1,000 millimeters in the central and southeast regions to 3,500 millimeters in the north of the city. The wet season is from November to April. The city lies in a river basin and is surrounded by up to 2,400 m volcanic mountains.

The 400 km<sup>2</sup> flat of central Bandung plain is situated in the middle of 2,340.88 km<sup>2</sup> wide of the Bandung Basin. The basin comprises Bandung, the Cimahi city, part of Bandung Regency, part of West Bandung Regency, and part of Sumedang Regency. The basin's main river is the Citarum; one of its branches, the Cikapundung, divides Bandung from north to south before it merges with Citarum again in Dayeuhkolot. The Bandung Basin is an important source of water for drinking water, irrigation and fisheries, and its 6,147 million m<sup>3</sup> of groundwater is a major reservoir for the city. Based on Bandung City Region Regulation No.6/2008, the city administration is divided into 30 sub-districts (*Kecamatan*) and 151 wards (*Kelurahan*). A mayor (*Walikota*) leads the city administration. Since 2008, the city residents directly voted for a mayor, while previously mayors were nominated and selected by the city council members or known as the Regional People's Representative Council (DPRD).

The combination of densely populated areas in Bandung and increasing risks of climate-related hazards makes the city particularly vulnerable to disasters. Therefore, the study, shown in this publication, aims to assess the resilience of the currently existing 30 sub-districts of Bandung to climate-related disaster (e.g. floods, storms, droughts/water scarcity).

## Scope

In this publication (consultation version) results are shown from 30 Kecamatan regarding their resilience to climate-related disasters.

## Concept of Resilience

Resilience to climate-related disasters applied in an urban area, and at micro-level (Kecamatan), tries to disclose on one hand the capacity of a city's urban infrastructure and services against disasters, and on the other, how communities and institutions are expected to deal with such an event. The questions are basically how resilient is a particular Kecamatan today and how is the city going to absorb, maintain, and recover (bounce back) from a hazard leading to a disaster.

In order to assess this resilience five dimensions are identified (physical, social, economic, institutional, and natural) which may provide an appropriate picture of a city's current condition. Thus, this concept of resilience is people-centered (communities), includes institutional dynamics and interactions of the physical and natural environment to climate-related disasters.



# Methodology

This study is based on a questionnaire covering five dimensions in which every dimension consists of another five parameters defining it in more details. Each of the five parameters is then again represented by another five variables. Accordingly, 125 variables define the overall resilience of a city (see table 1 for content of questionnaire). Using a simple arithmetic function, named weighted mean scores for variables, parameters, and dimensions are calculated.

Physical	<b>Electricity</b> (access, availability, supply capacity, alternative capacity) <b>Water</b> (access, availability, supply capacity, alternative capacity) <b>Sanitation and solid waste disposal</b> (access to sanitation, collection of waste: treated, recycled, collection of solid waste after a disaster) <b>Accessibility of roads</b> (% of land transportation network, paved roads, accessibility during flooding, status of interruption after intense rainfall, roadside covered drain) <b>Housing and land-use</b> (building code, buildings with non-permanent structure, buildings above water logging, ownership, population living in proximity to polluted industries)
Social	<b>Population</b> (population growth, population under 14 and above 64, population informal settlers, population density at day and night) <b>Health</b> (population suffer from waterborne/vector-borne diseases, pop. suffer from waterborne diseases after a disaster, access to primary health facilities, capacity of health facilities during a disaster) <b>Education and awareness</b> (literacy rate, population's awareness about disasters, availability of public awareness programs/disaster drills, access to internet, functionality of schools after disaster) <b>Social Capital</b> (population participating in community activities/clubs, acceptance level of community leader (in ward), ability of communities to build consensus and to participate in city's decision-making process (level of democracy), level of ethnic segregation) <b>Community preparedness during a disaster</b> (preparedness (logistics, materials, and management), provision of shelter for affected people, support from NGOs/CBOs, population evacuating voluntarily, population participating in relief works)
Economic	<b>Income</b> (population below poverty line, number of income sources per household, income derived in informal sector, % of households have reduced income due to a disaster) <b>Employment</b> (formal sector: % of labor unemployed, % of youth unemployed, % of women employed, % of employees come from outside the city; % of child labor in sub-district) <b>Household assets</b> (households have: television, mobile phone, motorized vehicle, non-motorized vehicle, basic furniture) <b>Finance and savings</b> (availability of credit facility to prevent disaster, accessibility to credits, accessibility to credits for urban poor, saving practice of households, household's properties insured) <b>Budget and subsidy</b> (funding of DRM, budget for DRR sufficient, availability of subsidies/incentives for residents to rebuild houses, alternative livelihood, health care after a disaster)
Institutional	<b>Mainstreaming of DRR and CCA</b> (mainstreaming of CCA and DRR in: zone's development plans, ability (manpower) and capacity (technical) to produce development plans, extent of community participation in development plan preparation process, implementation of disaster management plan) <b>Effectiveness of sub-district's crisis management framework</b> (existence and effectiveness of an emergency team during a disaster: leadership, availability of evacuation centers, efficiency of trained emergency workers during a disaster, existence of alternative decision-making personnel) <b>Knowledge dissemination and Management</b> (effectiveness to learn from previous disasters, availability of disaster training programs for emergency workers, existence of disaster awareness programs for communities, capacity (books, leaflets, etc.) to disseminate disaster awareness programs (disaster education), extent of community satisfaction from disaster awareness programs) <b>Institutional collaboration with other organizations and stakeholders, during a disaster</b> (sub-district's dependency to external institutions/support, collaboration and interconnectedness with neighboring sub-districts, sub-district's cooperation (support) with central corporation department for emergency management, cooperation sub-district's ward officials for emergency management, sub-district's institutional collaboration with NGOs and private organizations) <b>Good governance</b> (effectiveness of early warning systems, existence of disaster drills, promptness of sub-district body to disseminate emergency information during a disaster to communities and transparency of sub-district body to to disseminate accurate emergency, capability of sub-district body to lead recovery process)
Natural	<b>Intensity/severity of natural hazards</b> (floods, cyclones, heat waves, droughts (water scarcity), tornados) <b>Frequency of natural hazards</b> (floods, cyclones, heat waves, droughts (water scarcity), tornados) <b>Ecosystem services</b> (quality of city's: biodiversity, soils, air, water bodies, urban salinity) <b>Land-use in natural terms</b> (area vulnerable to climate-related hazards, urban morphology, settlements on hazardous ground, amount of Urban Green Space (UGS), loss of UGS) <b>Environmental policies</b> (use of sub-district level hazard maps in development activities, extent of environmental conservation regulations reflected in development plans, extent of implementation of environmental conservation policies, implementation of efficient waste management system (RRR), implementation of mitigation policies to reduce air pollution)

Table1: Parameters (bold) and variables of CDRI



Accordingly, the respondents (Kecamatan) of the questionnaire were requested to choose a score between 1 and 5 for each question according to the city's performance in this particular matter (see figure 2 for the parameter of electricity)

2.1.1 % of sub-district households have access to electricity at their home (including urban poor areas)					
1 (Up to 50%)	2 (51-65%)	3 (66-80%)	4 (81-95%)	5 (96-100%)	Choice
					4

2.1.2 Status of interruption per day in affected areas					
1 (Available up to 4 hours)	2 (Available 5-8 hours)	3 (Available 9-12 hours)	4 (16-23 hours)	5 (No interruption)	Choice
					3

2.1.3 % of area affected by interruption					
1 (81-100%)	2 (61-80%)	3 (41-60%)	4 (21-40%)	5 (less than 20%)	Choice
					3

2.1.4 Sub-district's electric supply authority capable to provide electricity					
1 (Up to 10% of demand)	2 (11-25% of demand)	3 (26-50% of demand)	4 (51-75% of demand)	5 (76-100% of demand)	Choice
					3

2.1.5 Extent of capacity of alternative emergency electric supply systems (private/public) to keep emergency services (e.g. hospital, evacuation centres, etc.) functioning					
1 (No capacity)	2 (1-25% of demand)	3 (26-50% of demand)	4 (51-75% of demand)	5 (76-100% of demand)	Choice
					1

Weight factor	Please rank the variables between 1 to 5 (no duplication of ranks)				
2.1.1	2.1.2	2.1.3	2.1.4	2.1.5	
3	5	4	2	1	

Figure 2: Electricity (filling-out)

## Approach

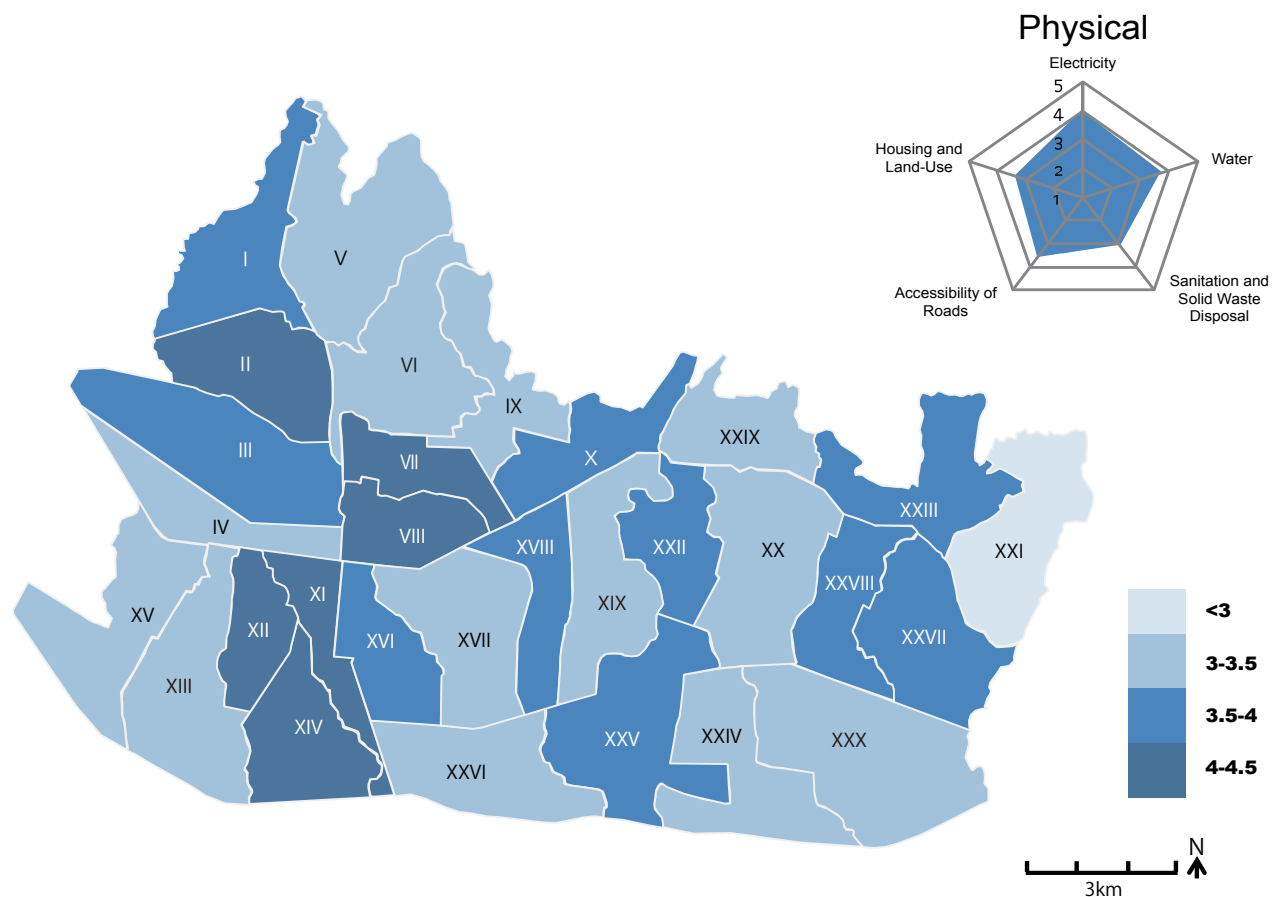
In this study all the 30 administrative Kecamatan of Bandung participated in the short introductory workshop, co-hosted by City Development and Planning Agency (Bappeda Kota Bandung) for filling-out trial before the mentioned extensive questionnaire to measure their resilience to climate-related disasters. The particular respondents were representative officers from Kecamatan. The period of data collection was between November and mid December 2010.

## Results

The following pages show the results for each of the 30 Kecamatan in form of a detailed report and maps (spiders) providing a visual idea about the current condition of a particular Kecamatan. A graphic line crossing the line of a dimension/parameter (spider diagrams) closer to 1 means the city has a low resilience in this aspect. A result approaching the score of 5 is showing high resilience.



# Physical Resilience



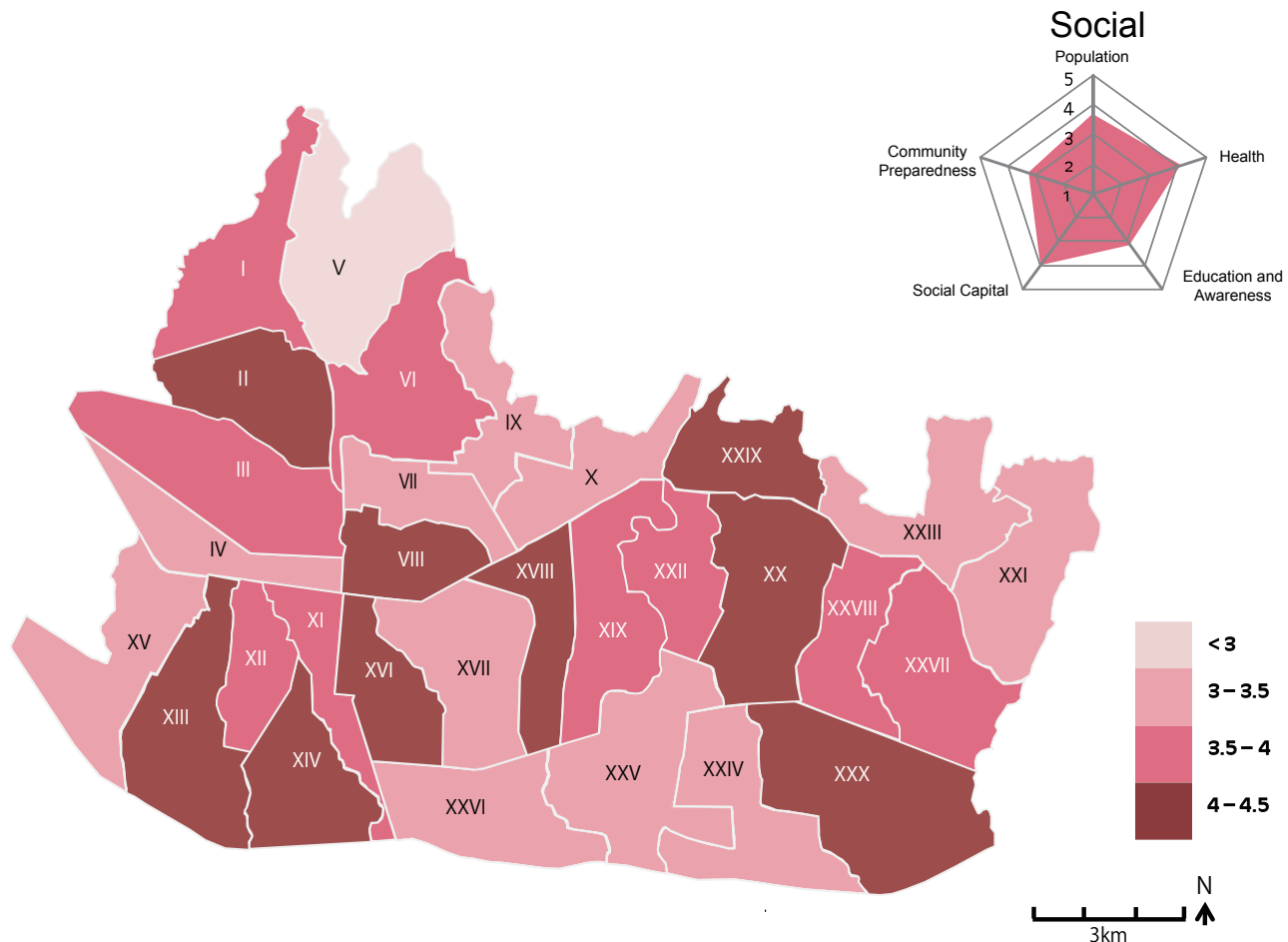
In overall the physical resilience levels distribute homogenously among the sub-districts. The lowest physical resilience is found in sub-district XXI (Cibiru), which has the resilience value of lower than 3 (2.9). The highest resilience value is recorded in sub-district VIII (Sumur Bandung), which has the resilience value of 4.25. The parameters that underline the difference between the lowest and highest physical resilience values are the sanitation and solid waste disposal as well as housing and land-use.

The amount of collected solid waste produced per day is only limited up to 50%, meaning not all the solid waste could be collected by the city, evaluated by the particular sub-district representative. For the housing and land-use issue, the amount of buildings that are constructed following the building code is less than 10%. There is a gap in term of solid waste service provision and the accessibility of roads in term of paved road. The lowest resilience can be found typically on the urban fringe and the highest resilience is located in the city centre, where the “golden triangle” (government, economy, and business offices) of Bandung can be marked. Electricity service is provided from a central supplier (State Electricity Company/PLN) for all sub-districts equally and therefore no differentiation in this parameter.

The water service is also provided centrally by Bandung Water Company (PDAM Bandung) and therefore all sub-districts are affected by similar or regular supply hours of water, which are usually available up to 6-10 hours/day and is capable to provide 76-100% of the sub-district water demand.

No correlation can be found with other type of resilience.

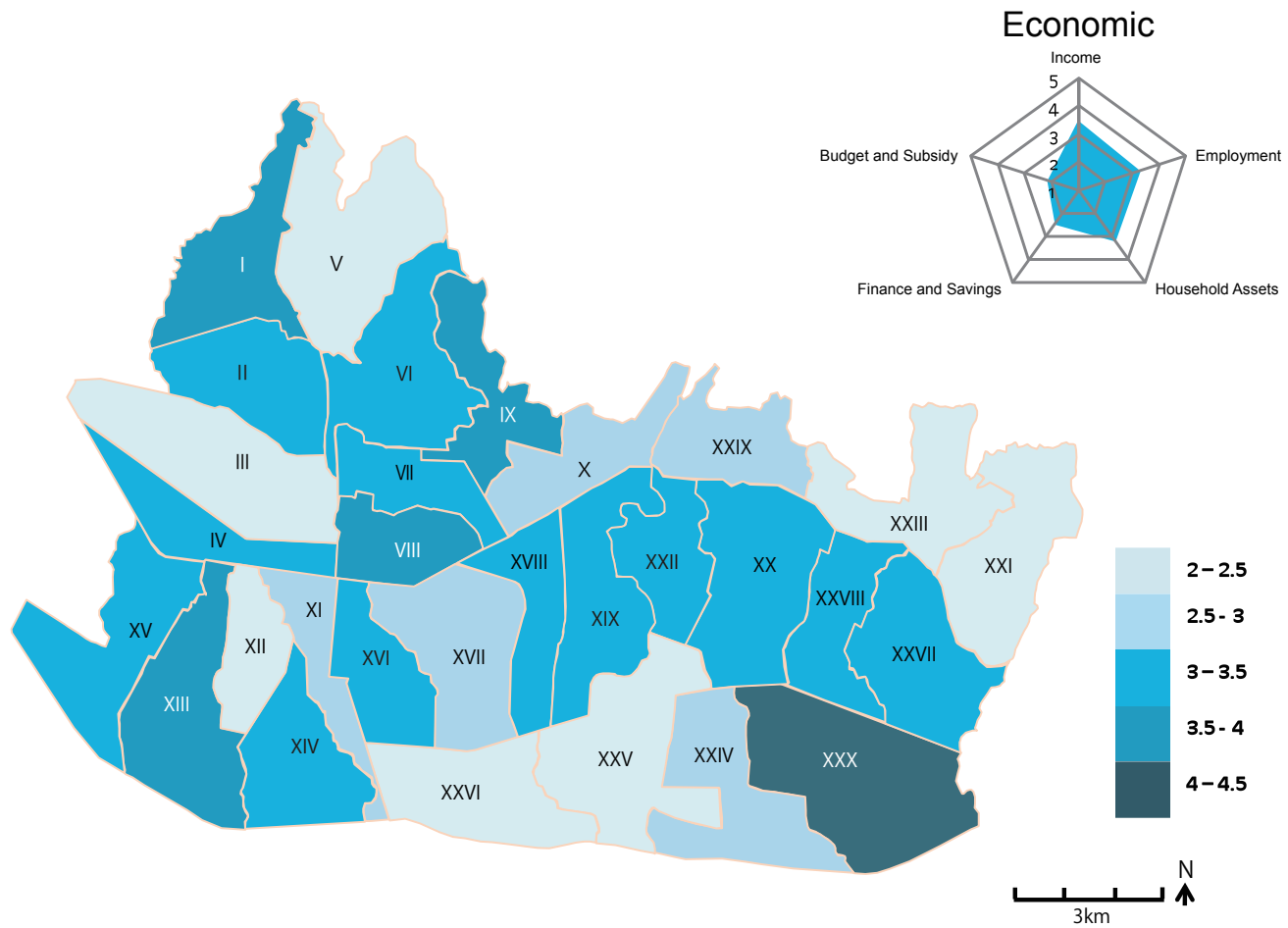
# Social Resilience



The social resilience levels show that the population and health has the highest values among all social resilience parameters. The upper map indicates that to some extent, the northern and southern part of the city has lower social resilience values than the central part of the city. The lowest social resilience is found in the sub-district V (Cidadap), which has the resilience value of lower than 3 (2.79). And the highest resilience value is noted in the sub-district XXX (Gedebage), which has the resilience value of higher than 4 (4.31). The factors that contribute to the difference in values are coming from the social resilience's parameters, such as the population and community preparedness during a disaster. It is noted in the lowest value, the population of the particular sub-district under the age 14 and over 64 years is range between 40-46% of total sub-district population, meaning almost 50% of the population is consisted from the vulnerable groups (children and elderly). And in term of community preparedness during a disaster, the scores are poor for the extent of households that are prepared for a disaster in the provision of logistics, materials, and management. It highlights as well the poor score for the extent of support from NGOs/CSOs or religious organizations after a disaster. On the contrary, the sub-district that scores high is the youngest sub-district among all and the elderly people have not yet settled in that sub-district and they are equipped with new logistics; therefore it has high score for the population and community preparedness during a disaster. In addition it has a high score for the health and social capital, which is showing that particular sub-district, is not susceptible to diseases and has tight relationship among the community members and their leaders.



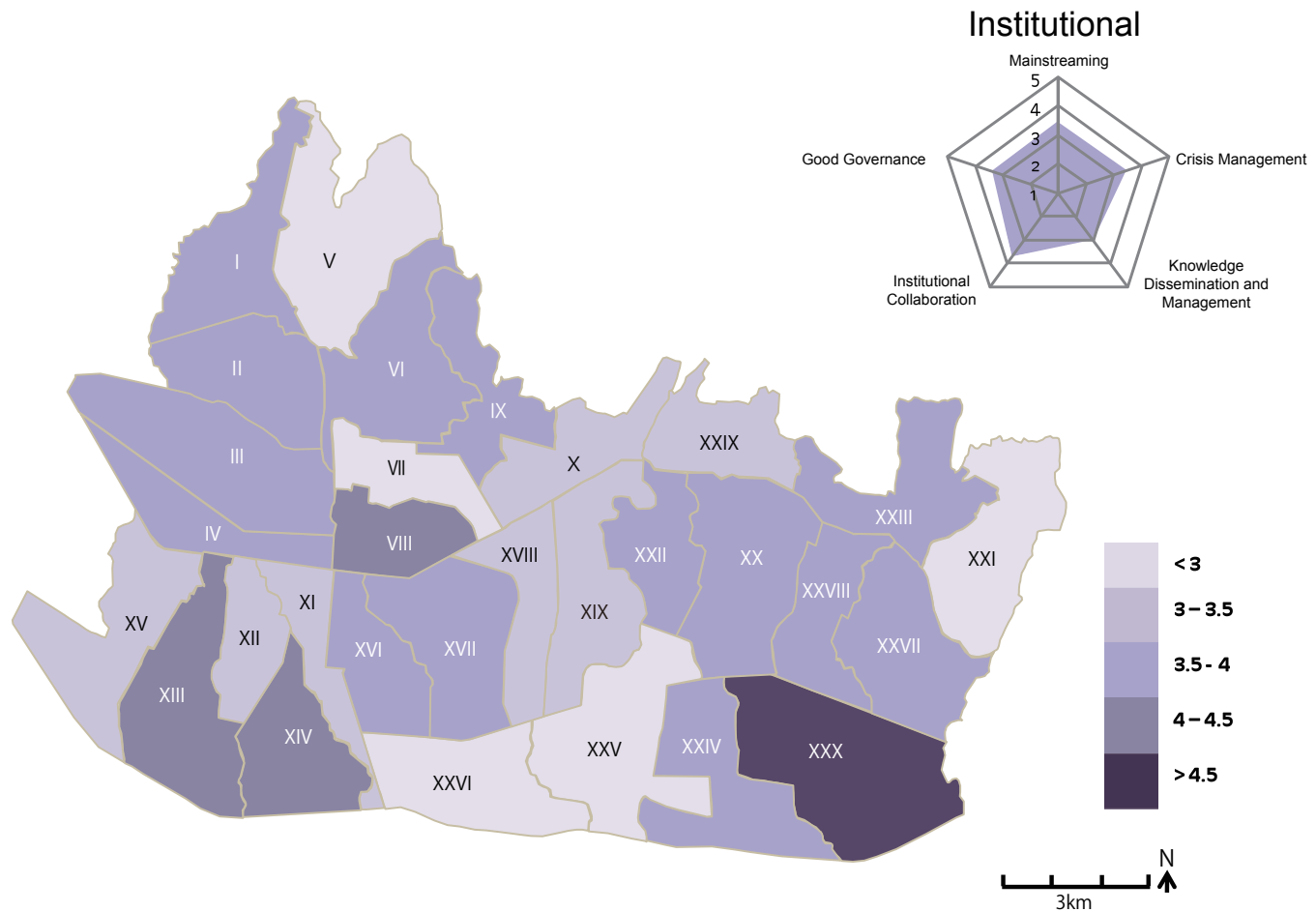
# Economic Resilience



The economic resilience levels on the above map show that particularly sub-districts in northern and middle-south part have low economic resilience compare to the central and some of upper-west and south-eastern sub-districts. The highest economic resilience values are found in particular high-end sub-districts, of which those residents have high economy in terms of income, employment, as well as finance and savings. Surprisingly, the youngest sub-district has the highest score in economy resilience for the income parameter. The average number of sources of income per household of more than three (3) sources has contributed to the high resilience value. In term of the budget and subsidy parameter, that particular sub-district has the availability of providing subsidies or incentives for its residents to rebuild their houses after a disaster and to provide incentives for the health care, although the amount of funds are not distinguished high. Following by the sub-district, of which the “golden triangle” is located in sub-district VIII (Sumur Bandung), has slightly less resilience value compare to the youngest sub-district (sub-district XXX = Gedebage).

So far for the correlation analysis, it cannot be found any correlation with other type of resilience, except it has quite high correlation coefficient with the institutional resilience ( $r = 0,65$ ). A slight correlation is marked between one of the economy parameters (budget and subsidy) and institutional parameters (mainstreaming of DRR and CCA, effectiveness of sub-district’s crisis management framework, knowledge dissemination and management, institutional collaboration, and good governance).

# Institutional Resilience

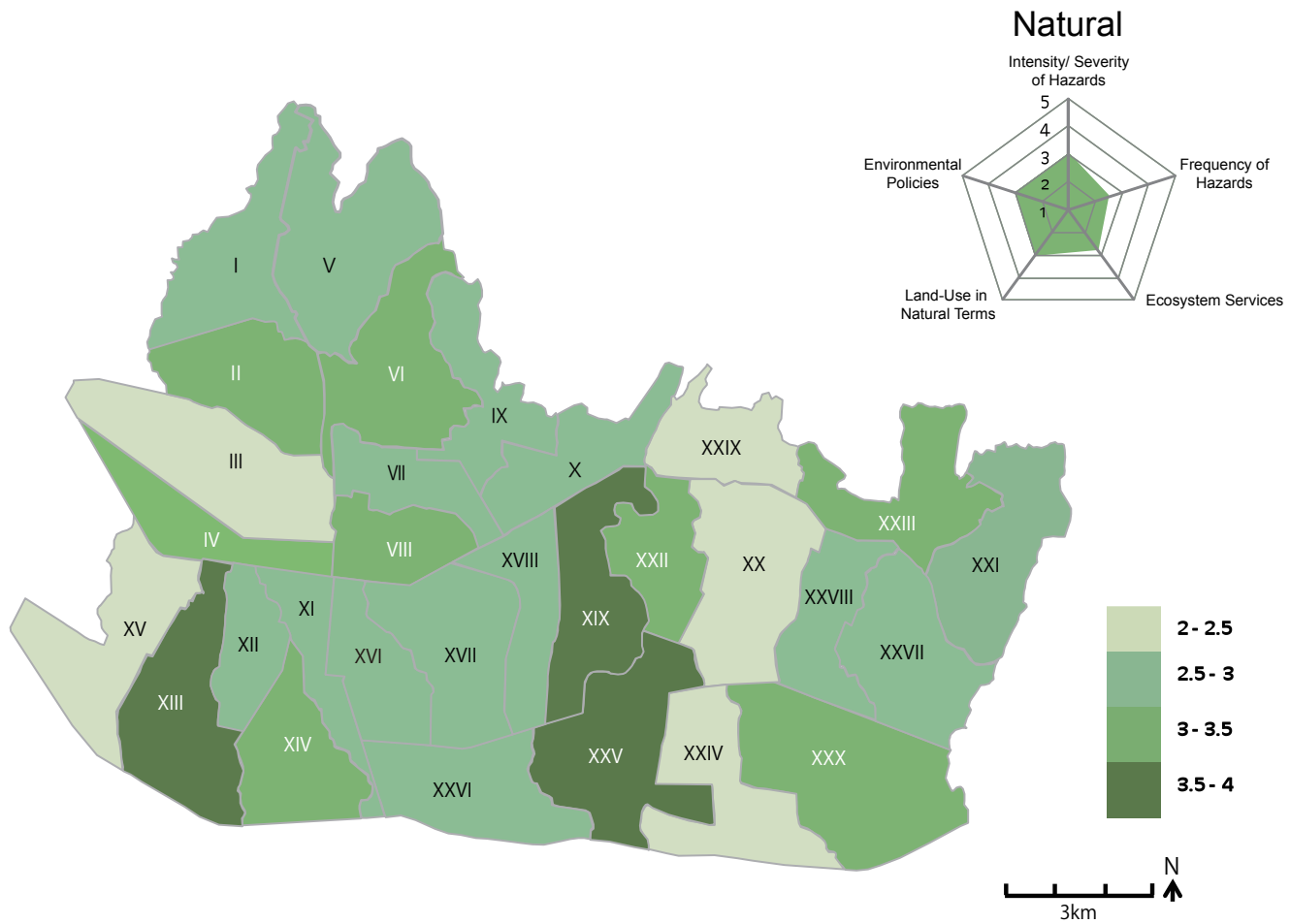


The institutional resilience shown in the above map is not bound to physical resilience parameters, such as electricity and water services, housing and land-use, and natural characteristics nor to social resilience parameters, such as population density. The institutional resilience confirms major parts of the administrative purpose of the sub-districts to act on behalf of the decision taken by the city government, since the sub-district leader or head is appointed by the mayor. The overall institutional resilience value varies from 2.5 to 4.5 and has the average score of 3.52. Meaning that there is room for improvement in any institutional resilience parameters, such as in mainstreaming Disaster Risk Reduction and Climate Change Adaptation, effectiveness of sub-district's crisis management framework, knowledge dissemination and management, institutional collaboration with other organizations and stakeholders, as well as good governance. The highest score of social resilience value is contributed by the youngest sub-district, which might have scored good in effectiveness of crisis management framework in terms of the existence of emergency teams during a disaster and alternative decision making personnel during a disaster.

There is a slight correlation between social and institutional resilience with a coefficient of 0.68, which detects a slight relation between the social parameters (in terms of community preparedness, such as the extent of sub-district's population dealing during a disaster) and institutional parameters (in terms of the effectiveness of sub-district's crisis management and in good governance).



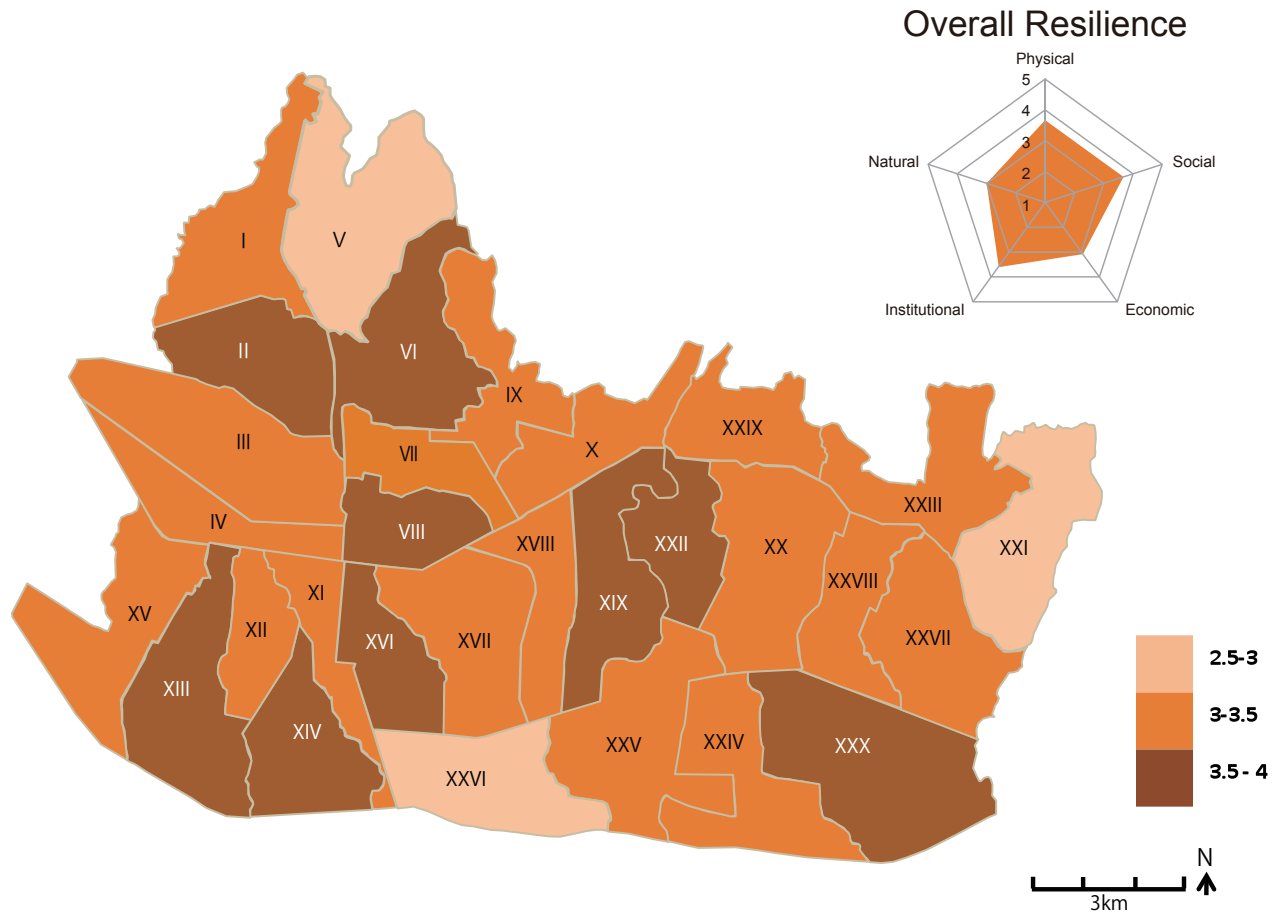
# Natural Resilience



The natural resilience values show in the above map among the sub-districts are varying and mix from north to south and west to east. The lowest natural resilience values can be found in the northern and central-west of the city due to high climate-related hazards frequency that threatening those sub-districts, such as inundations due to high rainfall intensity. In addition, major factors that contribute to the low resilience in natural dimension in almost all sub-districts are poor implementation of environmental policies and land-use or ecosystem services. The variations of the value ranges from 2.3 until 3.97, with small indifferences possibly due to rather small spatial areas of each sub-districts and located adjacent to one another.

Strong correlation of natural resilience with other type of resilience is not found.

# Overall Resilience



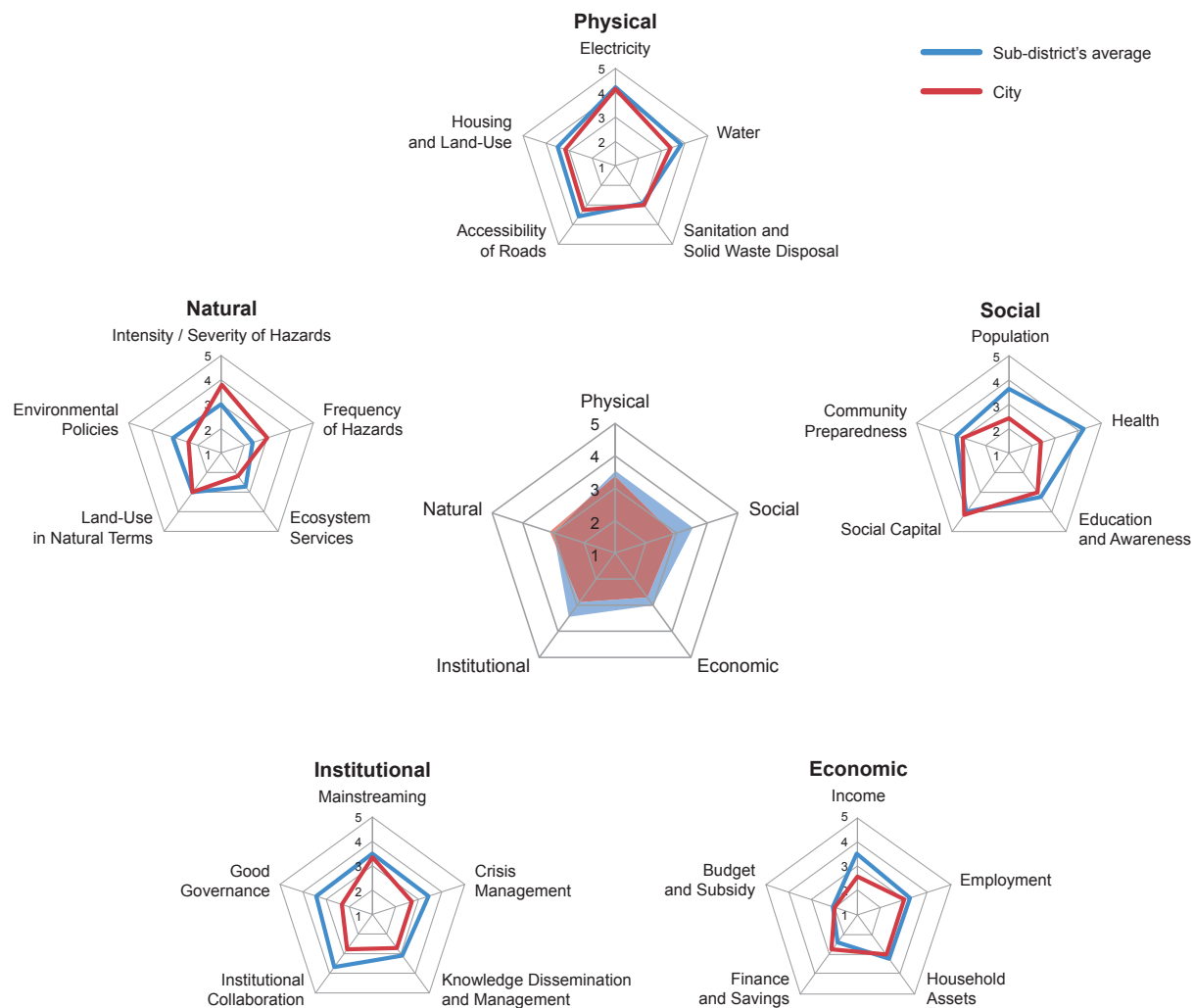
The overall CDRI values of the sub-districts are shown in the map. The lowest resilience values are scored by the poor areas as well as socially disadvantaged, specifically in the economic resilience indicates by budget and subsidy for disaster risk management and reduction and in the natural resilience indicates by the frequency of natural hazards. The highest resilience values are marked for the social resilience indicates in the health sector; the physical resilience by electricity, water, and accessibility of roads; and for the institutional resilience indicates by institutional collaboration with other organizations and stakeholders during a disaster.

The rest of the majority sub-districts have similar middle-class resilience values, of which the variations of the scores are very small. Nevertheless, all the resilience values show in the diagrams pointed out to have similar values to each other, a potential opportunity to improve at the same starting point of development take-off and grow collectively towards the enhancement of Bandung climate-related disaster resilience is possible.

The next page shows the diagrams of the average resilience of the sub-districts in Bandung compared to the city's resilience.



## Overall Resilience



Parameter	CDRI Score
Health	4.31
Electricity	4.24
Social Capital	4.07
Water	3.88
Institutional Collaboration	3.72
Population	3.69
Accessibility of Roads	3.62
Housing and Land-Use	3.6
Crisis Management	3.58
Mainstreaming	3.54
Income	3.52
Good Governance	3.5
Community Preparedness	3.42
Employment	3.35
Education and Awareness	3.31
Household Assets	3.25
Environmental Policies	3.16
Land-Use in Natural Terms	3.15
Knowledge Dissemination and Management	3.12
Intensity / Severity of Hazards	3.11
Sanitation and Solid Waste Disposal	2.93
Ecosystem Services	2.81
Finance and Savings	2.49
Frequency of Hazards	2.49
Budget and Subsidy	2.26

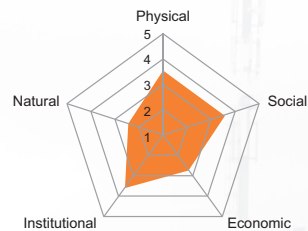
Table 2: CDRI Scores of Parameters

Table 2 ranks the average value of the sub-districts' CBDR scores, from the highest to the lowest, with Health parameter being the highest. Sanitation and Solid Waste Disposal, Ecosystem services, Finance and Savings, Frequency of Hazards, and Budget and Subsidy are parameters with the lowest scores; confirming the need of actions for the concerned sectors.

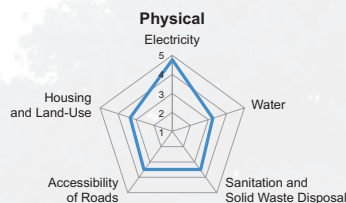


## Kecamatan 1

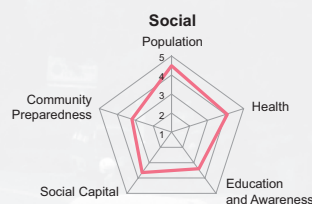
# Sukasari



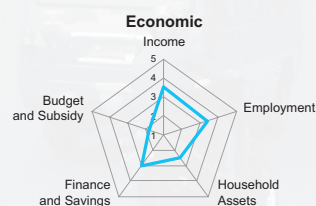
Kecamatan Sukasari, has 4 wards and is located at the highland on northern-and western end of Bandung City with an area size of 6.27 km<sup>2</sup> and a population of around 77,218 in 2008. The population density is 12,315.47/km<sup>2</sup>, which is quite dense compared to other sub-districts. This area is characterized by a main river (Cikapundung) flowing at its eastern border. A prominent private university is located in this area, where as the majority of the houses are used as dormitories for students, even a high stories apartment is built next to the university. But less than 10% of the buildings are constructed following the building code. The overall resilience indicates in the diagram is below the average, distinguished from the economic and natural dimension.



Up to 100% of the households have access to electricity and up to 95% have access to potable water supply. Up to 75% of the population has access to sanitation, but up to 25% of the solid waste is treated before dumping and up to 50% of the solid waste is recycled; both in formal and informal ways. More than 20% of the area's land is used as transportation network. Only 70% of the area is accessible by paved road. A slightly more than half of roads remained accessible during normal flooding in affected areas, but only up to 45% of the roads have roadside covered drain. Less than 10% of the houses are built with non-permanent structure, however less than 10% of the buildings are constructed following the building code. This area is not a hazardous area, whereas none of the population are living in the proximity to polluted industries or dumping grounds.



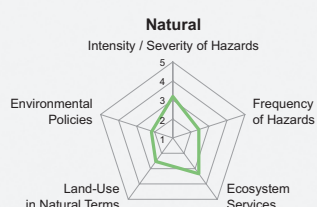
The population growth is less than 0.9%, however this area is occupied by 77,218 people with a density of 12.315 people live on one sq/km. A slightly above one third of its population is under age 14 or over 64 years old. There are almost no population suffer from neither water-borne nor vector borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and sub-district authority organizes once a year a disaster drill. Almost half of the population is participated in community activities; however they might face some difficulties in the social ethnic integration. Although the people are prepared for a disaster (logistics, materials, and management), there is no support from the NGOs/CSOs after a disaster.



Less than 11% of the population lives below the poverty line, but the income only came from one source. Unemployment in the formal sector is up to 18%, which is the same percentage for the youth employed as well. Almost all the population have television and telecommunication device, however less than 50% of the households has furniture to secure the key items (money, important documents, etc.) during disaster. Although more than 50% of the people are practicing saving, only up to 10% of the households are under any sort of insurance scheme. There is no support or access of credit facility during disaster for urban poor or low-income groups. And there is no available annual budget targeting disaster risk management, no availability of subsidies/incentives for residents to receive an alternative livelihood and health care during a disaster.



Although this area has a good mainstreaming of DRR and CCA and community participation in their development plans and preparation process, as well as the promptness of the sub-district's body in disseminating emergency information during a disaster; there is no capacity for dissemination of disaster awareness programs (books, leaflets, manpower, and campaigns for disaster education).

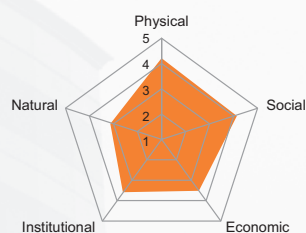


Since this sub-district is bordered by the main river; during and after a heavy rainfall, a severe riverine floods are occurring in this area. And since this area has hilly and steep slope morphology, almost half of settlement is exposed to vulnerable zones. The amount of green spaces and the use of sub-district level hazard maps in development activities are up to 10% as well as poor in the implementation of mitigation policies to reduce air pollution (e.g. CO<sub>2</sub> from traffic or household emissions).

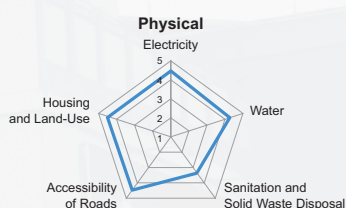


## Kecamatan 2

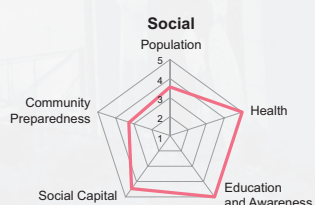
# Sukajadi



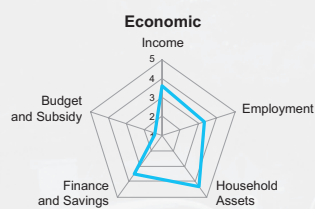
Kecamatan Sukajadi, has 5 wards and is located at the north-west of Bandung City with an area size of 4.23 km<sup>2</sup> and a population of around 101, 065 in 2008. The population density is 23,503.49/km<sup>2</sup>, which is quite dense compared to other sub-districts. This sub-district is composed mainly for residential with a slightly mix of service and commercial purposes. One of the service purposes that could be distinguished in this sub-district is a well-known public hospital. The overall resilience indicates in the diagram is slightly above the average, mainly in the physical, social, and institutional dimension.



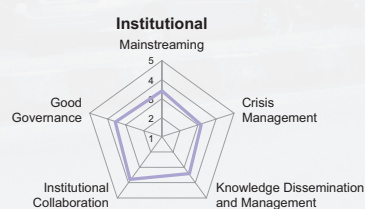
Up to 100% of the households have access to electricity and up to 95% have access to potable water supply. Up to 75% of the population has access to sanitation, but only up to 25% of the solid waste is treated before dumping and recycled; both in formal and informal ways. More than 20% of the area's land is used as transportation network and almost 100% of the area is accessible by paved road. More than 70% of roads remained are accessible during normal flooding in affected areas, but only up to 45% of the roads have roadside covered drain. Less than 10% of the houses are built with non-permanent structure and more than 50% of the buildings are constructed following the building code. Although this area is not a hazardous area, almost a quarter of the population is living in the proximity to dumping grounds.



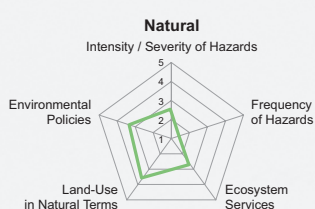
The population growth is ranged between 1-1.9%, however this area is occupied by 101.065 people with a density of 23,503.49 people is living on one sq/km. Less than 25% of the population is under age 14 or over 64 years old. There are almost no population suffer from neither water-nor vector borne diseases every year and up to 100% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are very well provided and able to serve the community. The literacy rate is ranged between 80-100% and sub-district authority organizes once a year a disaster drill. Up to 40% of the population is participated in community activities and they could blend well with other ethnics for social integration. The people are prepared for a disaster (in terms of logistics, materials, and management) and have a support from the NGOs/CSOs after a disaster.



The majority of the population lives below the poverty line and have 3 sources of income, only less than 25% of the households depend on only one source of income. Unemployment in the formal sector is up to 18%, same as for the youth employed as well. Female labor is noted up to 65% in this sub-district. Almost all the population have television and telecommunication device as well as motorized vehicle. One third of community has non-motorized vehicle. However, less than 50% of the households have furniture to secure the key items (money, important documents, etc.) for during disaster. Although up to 50% of the people are practicing saving, only up to 16% of the households are under any sort of insurance scheme. There is a support or access of credit facility during disaster for urban poor or low-income groups. However, annual budget targeting disaster risk management, subsidies/incentives for residents to receive an alternative livelihood and health care during a disaster are not available.



Although this area has a good community participation in their development plans and preparation process, as well as incorporation of disaster management plan; the effectiveness of emergency team during a disaster (in terms of leadership and competence) is poor. This is not reflected in their institutional collaboration with other organizations and stakeholders.

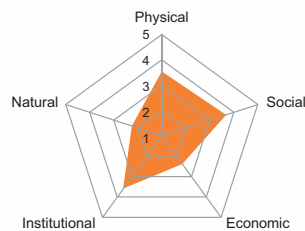


Since the main river flows from north to south; during and after a heavy rainfall, a severe riverine floods are occurring in this area. The frequency of the inundations, riverine floods, as well as rainfall-induced landslides and storms, are occurring more than once per year. And the natural condition become worse as the average of urban water quality in lakes, rivers is poor in line with almost 90% of the average intensity of land-use/urban morphology area is built-up. That is why the amount of green spaces is up to 15%. Regarding the environmental policies, the implementation of efficient waste management system (reduce, reuse, and recycle) is poor in this area.

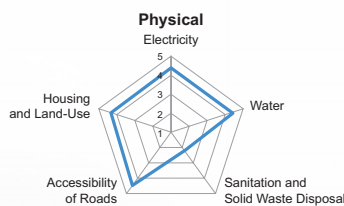


## Kecamatan 3

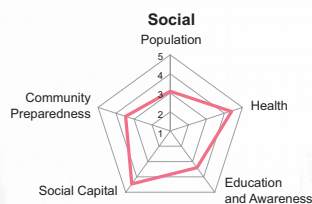
# Cicendo



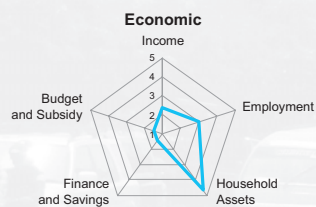
Sub-district 3, Cicendo is consisted from 6 wards and located at the western end of Bandung City with an area size of 6.86 km<sup>2</sup> and a population of around 103,353 in 2008. The population density is 15,092.49/km<sup>2</sup>, which is quite dense compared to other sub-districts. Two rivers (Citepus and Ciwaruga) are flowing through. This area is characterized by mixed land-use, an international airport is marked and serves as service purposes for the whole city. The overall resilience indicates in the diagram is below the average, mainly in the economic and natural the dimension.



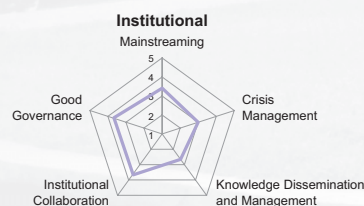
Although up to 40% of the area is affected by interruption, up to 100% of the households have access to electricity and up to 95% have access to potable water supply. Up to 60% of the population has access to sanitation, but up to 25% of the solid waste is treated before dumping and up to only 10% of the solid waste is recycled; both in formal and informal ways. More than 20% of the area's land is used as transportation network. And 100% of the area is accessible by paved road and more than 71% of roads remained are accessible during normal flooding in affected areas, but only up to 60% of the roads have roadside covered drain. Up to 19% of the houses are built with non-permanent structure, however less than 10% of the buildings are constructed following the building code. This area is not a hazardous area as none of the population are living in the proximity to polluted industries or dumping grounds.



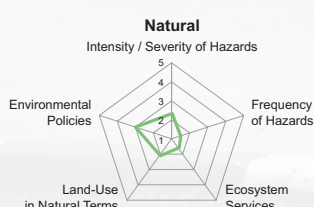
The population growth is less than 0.9%, however this area is occupied by 103,353 people with a density of 15,092 people is living on one sq/km. More than 45% its population is under age 14 or over 64 years old. There is a chance that up to 11% of the population suffer from water-and vector borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and the sub-district authority organizes once a year a disaster drills. Almost half of the population is participated in community activities; and among different ethnics the blending process is well and has a good social integration. The people are prepared for a disaster (logistics, materials, and management), there is a good support from the NGOs/CSOs after a disaster.



Less than 11% of the population lives below the poverty line, but the income is only came from one source. Unemployment in the formal sector is only up 7%, although the youth unemployment is up to 24%. Almost all the population have television and telecommunication device, motorized vehicle, and more than 80% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. More than 50% of the people are practicing saving, only up to 10% of the households are under any sort of insurance scheme. There is no support or access of credit facility during disaster for urban poor or low-income groups. And there are no available annual budget targeting disaster risk management, no availability of subsidies/incentives for residents to receive an alternative livelihood and health care during a disaster.



The mainstreaming of DRR and CCA, the effectiveness of sub-district's crisis management framework, and the institutional collaboration with other organizations and stakeholders are good and slightly effective. But there is no effectiveness in learning from previous disasters and heavily dependent on external institutions or support during a disaster.



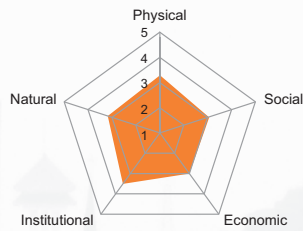
Since this sub-district has 2 rivers flowing through it; during and after a heavy rainfall, a severe riverine floods are occurring in this area. The frequency of the floods is more than once per year during the rainy season and suffers from water scarcity more than once per year as well. The ecosystem service, particular in this area, such as the average of urban air quality during the day and water, are poor. It reflects in the poor implementation of mitigation policies to reduce air pollution (e.g. CO<sub>2</sub> from traffic or household emissions).



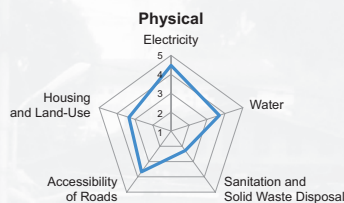


## Kecamatan 4

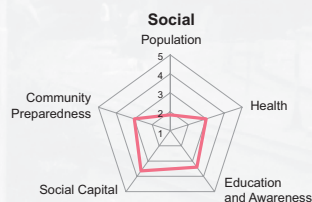
# Andir



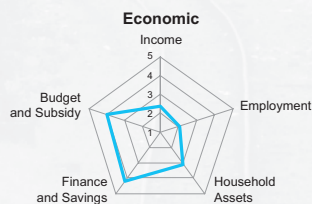
Sub-district 4, Andir has 6 wards and is located at western end of Bandung City with an area size of 3,71 km<sup>2</sup> and a population of around 106,201 in 2008. The population density is 28,625.61/km<sup>2</sup>, which is very dense regarding its small size of the area. More than 50% of the area is occupied for commercial purposes, where lots of shops and trading markets can be found. The water level rose about 200cm of the river Cibeureum and marked as the worst riverine flood case in year 2010. The overall resilience indicates in the diagram is below the average, with social and natural dimension are marked the weakest.



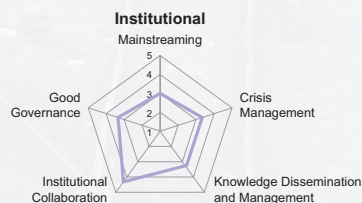
Up to 100% of the households have access to electricity and up to 95% have access to potable water supply. Up to 60% of the population has access to sanitation, but up to 25% of the solid waste is treated before dumping and recycled; both in formal and informal ways. More than 20% of the area's land is used as transportation network. All of the area is accessible by paved road and only up to 50% of roads remained are accessible during normal flooding in affected areas, but only up to 45% of the roads have roadside covered drain. Up to 29% of the houses are built with non-permanent structure, and more than 50% of the buildings are constructed following the building code. This area is not a hazardous area, however, up to 49% of the population are living in the proximity to polluted areas (due to everyday heavy traffic flow).



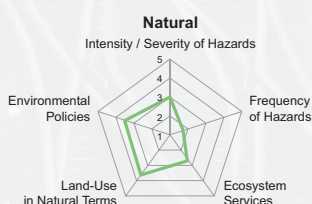
The population growth is quite high, up to 3.9%, however, slightly above one third of its population is under age 14 or over 64 years old. Almost 17% of its population suffer from water-and vector borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are quite moderate provided and able to serve the community. Less than 50% of the people are illiterate and sub-district authority organizes more than once per year a disaster drill. Almost half of the population is participated in community activities; and among different ethnics, the social integration process runs quite smoothly. The people are prepared for a disaster (logistics, materials, and management) and there is a quite few support from the NGOs/CSOs after a disaster.



Up to 30% of the population lives below the poverty line and the income comes from two sources. Unemployment in the formal sector is more than 25%, which is the same percentage for the youth unemployment as well. Up to 70% of the population have television and telecommunication device, however only up to 50% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. More than 50% of the people are practicing saving and more than 33% of the households are under any sort of insurance scheme. There is some support or access of credit facility during disaster for urban poor or low-income groups. And more than 3% of the budget is available for disaster risk management. There is availability of subsidies/incentives for residents to receive an alternative livelihood and health care during a disaster, although the sum is quite small.



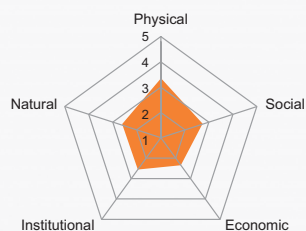
This area has a good mainstreaming of DRR and CCA and community participation in their development plans and preparation process, as well as the promptness of the sub-district's body in disseminating emergency information during a disaster. The cooperation of sub-district's ward officials for emergency management and institutional collaboration with NGOs as well as private organizations during a disaster are at its best.



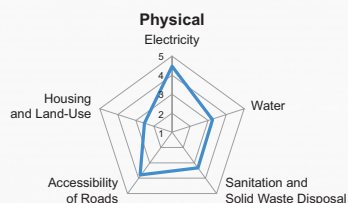
The intensity and severity of the floods are severe and occurring more than once per year in this area. In term of the ecosystem service; the average of urban water quality is poor. Almost 70% of this area is built-up, where the loss of green spaces is up to 20%, thus the implementation of the environmental policies is quite poor for this area.

## Kecamatan 5

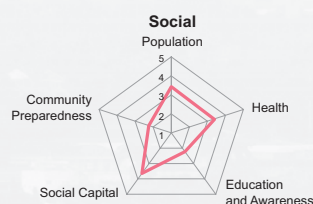
# Cidadap



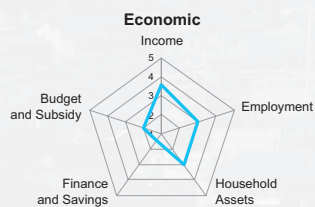
Sub-district 5, Cidadap has only 3 wards and is located at the highland on northern and western end of Bandung City with an area size of 6,11 km<sup>2</sup> and a population of around 53,934 in 2008. The population density is 8,827.17/km<sup>2</sup>, which is not dense at all compared to other sub-districts. Almost half of the total area is occupied by green spaces and forest, where a major river (Cipaganti) is flowing through this sub-district. The overall resilience indicates in the diagram is below the average, marked for the economic, institutional and natural dimension.



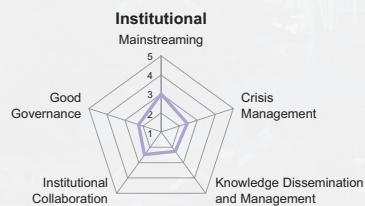
Up to 100% of the households have access to electricity and up to 88% have access to potable water supply. Up to 75% of the population has access to sanitation, but up to 25% of the solid waste is treated before dumping and up to 50% of the solid waste is recycled; both in formal and informal ways. Only up to 15% of the area's land is used as transportation network. Only 70% of the area is accessible by paved road and remained accessible during normal flooding in affected areas, and more than 60% of the roads have roadside covered drain. Up to 19% of the houses are built with non-permanent structure, however less than 10% of the buildings are constructed following the building code. This area is not a hazardous area, whereas none of the population are living in the proximity to polluted industries or dumping grounds.



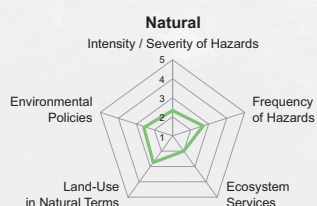
The population growth is ranged between 1-1.9%, however this area is occupied up to 46% by under age 14 or over 64 years old. Up to 11% of the population suffer from water and vector borne diseases every year and up to 90% of the population has access to primary health care facility. But in case of emergency and before disaster, the health facilities are poorly provided and able to serve the community. Less than 50% of the people are illiterate and the sub-district authority organizes once in two year a disaster drill. Up to 40% of the population is participated in community activities and could integrate well with each other (between ethnics). The households are not prepared for a disaster (logistics, materials, and management) and the support from the NGOs/CSOs after a disaster is quite small.



Less than 11% of the population lives below the poverty line, but the income is only come from one source. Unemployment in the formal sector is up to 18%, which is the same percentage for the youth unemployment as well. Almost all the population have television and telecommunication device, however less than 50% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. Only up to 20% of the people are practicing saving and only up to 10% of the households are under any sort of insurance scheme. There is no support or access of credit facility during disaster for urban poor or low-income groups. And there are no available annual budget targeting disaster risk management. The availability of subsidies/incentives for residents to receive an alternative livelihood and health care during a disaster is poor.



Although this area has a good mainstreaming of DRR and CCA and community participation in their development plans and preparation process, but the inclusion of disaster management into development planning is poor, as well as the existence of emergency team during a disaster. There is no existence of disaster awareness programs (disaster education) for the communities. The extent of institutional collaboration with other organizations and stakeholders is heavily dependent and in case of an emergency; the network with other sub-districts is poor.

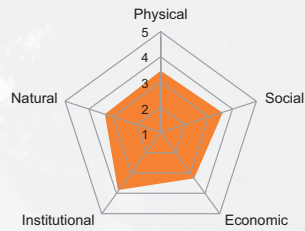


Since a major river is flowing through this area, during and after a heavy rainfall, a severe riverine floods are occurring. And since this area has hilly and steep slope morphology, the rainfall-induced landslides are occurring once per year. Although the amount of green spaces are half of the total area, the urban biodiversity, average urban soil, air and water quality are poor. It is reflected in poor implementation of mitigation policies to reduce air pollution (e.g CO<sub>2</sub> from traffic and household emissions).

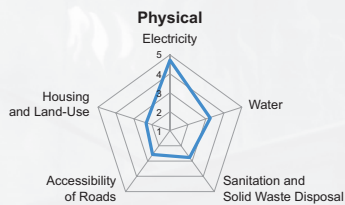


## Kecamatan 6

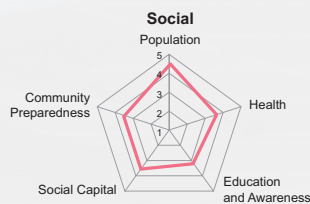
# Coblong



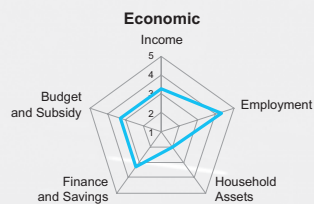
Sub-district 6, Coblong has 6 wards and is located at the highland on northern part of Bandung City with an area size of 7.35 km<sup>2</sup> and a population of around 126,450 in 2008. The population density is 17,204.08/km<sup>2</sup>, which is quite dense compared to other sub-districts. This area is well known for the best state institute of technology in country, many factories fashion outlets, famous culinary places, as well as high-end residential areas. The overall resilience indicates in the diagram is slightly above the average, especially in the physical and institutional dimension.



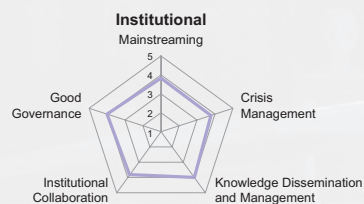
Up to 100% of the households have access to electricity, but only up to 50% have access to potable water supply. Up to 60% of the population has access to sanitation, but up to 50% of the solid waste is treated before dumping and up to 75% of the solid waste is recycled; both in formal and informal ways. Only up to 10% of the area's land is used as transportation network, and up to 60% of the area is accessible by paved road. More than 71% of roads remained are accessible during normal flooding in affected areas, but only up to 30% of the roads have roadside covered drain. Up to 19% of the houses are built with non-permanent structure, however less than 20% of the buildings are constructed following the building code. This area is not a hazardous area, whereas none of the population are living in the proximity to polluted industries or dumping grounds.



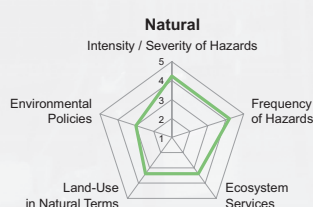
The population growth is ranged between 1-1.9% and less than 25% of the population is under age 14 or over 64 years old. There are almost no population suffer from neither water-borne nor vector borne diseases every year and up to 75% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and the sub-district authority organizes once a year a disaster drills. Almost half of the population is participated in community activities; and could integrate nicely among different ethnics. The people are prepared for a disaster (logistics, materials, and management), there is few support from the NGOs/CSOs after a disaster.



Less than 11% of the population lives below the poverty line and it comes only from one source. Unemployment in the formal sector is up to 12%, which is the same percentage for the youth unemployment as well. Almost all the population have television and telecommunication device, however less than 50% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. Although 30% of the people are practicing saving, only up to 32% of the households are under any sort of insurance scheme. There is no support or access of credit facility during disaster for urban poor or low-income groups, but more than 5% is available for annual budget targeting disaster risk management. Subsidies/incentives of small amount are available for residents to receive an alternative livelihood and health care during a disaster.



Although this area has a good mainstreaming of DRR and CCA and community participation in their development plans and preparation process, as well as the promptness of the sub-district's body in disseminating emergency information during a disaster; the efficiency of trained emergency workers during a disaster is quite fair. This area is independent on external institutions/support during a disaster.



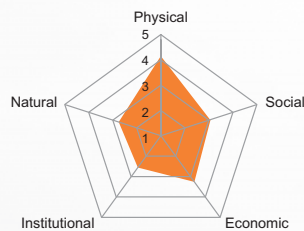
In terms of intensity and frequency of natural disasters, severe floods are occurring less than 5 years. The ecosystem service, such as urban water quality is mainly poor as it reflected the 20% total area of urban green space, of which the environmental policies are quite well enforced.



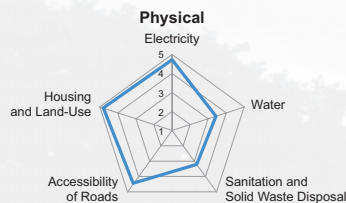


## Kecamatan 7

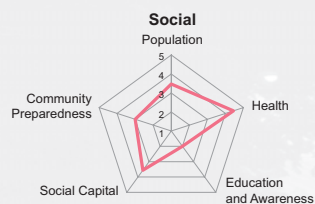
# Bandung Wetan



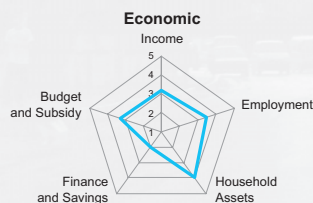
Sub-district 7, Bandung Wetan is consisted of 3 wards an located at the heart of Bandung City with an area size of 3.39 km<sup>2</sup> and a population of around 31,741 in 2008. The population density is 9,363.13/km<sup>2</sup>, which is not dense compared to other sub-districts. This area is characterized by mix land-use of settlement, governmental offices, and services. A major river (Cikapundung) is flowing through this area. The overall resilience indicates in the diagram is slightly below the average, especially in the social, economic, institutional dimension.



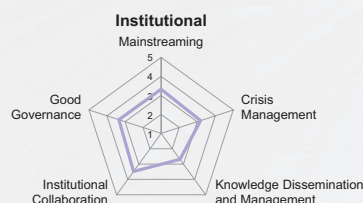
Up to 100% of the households have access to electricity and potable water supply. Up to 75% of the population has access to sanitation, but up to 25% of the solid waste is treated before dumping and up to 75% of the solid waste is recycled; both in formal and informal ways. More than 20% of the area's land is used as transportation network. Whole area is accessible by paved road and accessible during normal flooding in affected areas, but only up to 60% of the roads have roadside covered drain. Less than 10% of the houses are built with non-permanent structure and more than 50% of the buildings are constructed following the building code. This area is not a hazardous area, whereas none of the population are living in the proximity to polluted industries or dumping grounds.



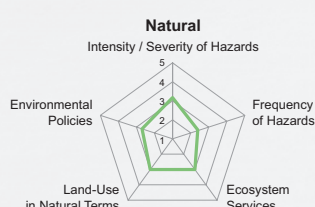
The population growth is ranged between 1-1.9%, with up to 32% of its population is under age 14 or over 64 years old. There are almost no population suffer from neither water-nor vector borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate, but the sub-district authority has not yet organizes disaster drill so far. Almost half of the population is participated in community activities and could integrate well with other ethnic groups. The people are prepared for a disaster (logistics, materials, and management) and there is some support from the NGOs/CSOs after a disaster.



Less than 11% of the population lives below the poverty line with 2 sources of income. Unemployment in the formal sector is up to 12%, which is the same percentage for the youth unemployment rate as well. Almost all the population have television and telecommunication device, however less than 50% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. Although more than 50% of the people are practicing saving, only up to 10% of the households are under any sort of insurance scheme. There is no support or access of credit facility during disaster for urban poor or low-income groups. Annual budget targeting disaster risk management is available up to 3%, and some small amount of subsidies/incentives for residents to receive an alternative livelihood and health care during a disaster is provided.



Although this area has a good mainstreaming of DRR and CCA and community participation in their development plans and preparation process, as well as the promptness of the sub-district's body in disseminating emergency information during a disaster; the efficiency of trained emergency workers during disaster is poor. The same applies for good governance issues. The effectiveness of early warning systems led by sub-district body and the existence of disaster drills could not be found so far.

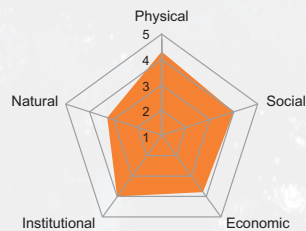


Since a major river is flowing through this area (Cikapundung), a riverine floods occurs more than once every year, and during the dry season some water scarcity is experienced in this area. From the environmental perspective, the average intensity of land-use or built up area is up to 90%, this in turn gives a loss of green space almost up to 40%. One major issue that has not been solved yet is the poor implementation of efficient waste management system (reduce, reuse, recycle).

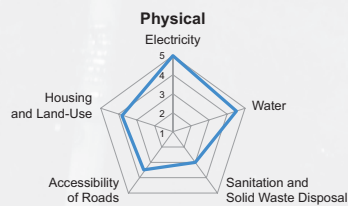


## Kecamatan 8

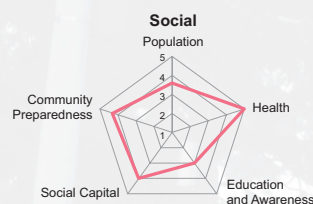
# Sumur Bandung



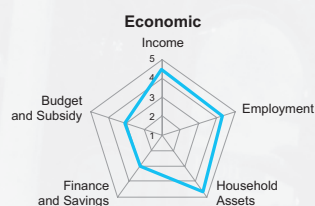
Sub-district 8, Sumur Bandung is consisted of 4 wards and located at the heart of Bandung City with an area size of 3.40 km<sup>2</sup> and a population of around 40,035 in 2008. The population density is 11,755.00/km<sup>2</sup>, which is quite dense compared to other sub-districts. This area is composed mainly for commercial, governmental offices, and services. Important governmental offices such as city hall and a national level military based are located in this area. The overall resilience indicates in the diagram is above the average with a good score for almost all dimensions, except for the natural one.



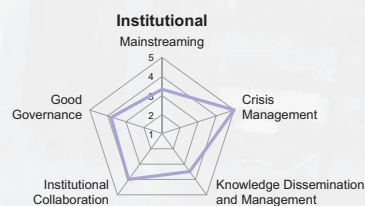
Up to 100% of the households have access to electricity and up to 95% have access to potable water supply. Up to 75% of the population has access to sanitation, but up to 25% of the solid waste is treated before dumping but only up to 10% of the solid waste is recycled; both in formal and informal ways. Up to 20% of the area's land is used as transportation network. Only 70% of the area is accessible by paved road. A slightly more than half of total roads remain accessible during normal flooding in affected areas, but only up to 45% of the roads have roadside covered drain. Less than 10% of the houses are built with non-permanent structure, and up to 50% of the buildings are constructed following the building code. Although this area is not a hazardous area, but 25% of the population are living in the proximity to polluted dumping grounds, which is reflected in the small amount of treated waste before dumping.



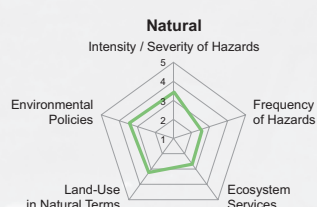
The population growth is between 1-1.9%, with less than 45% of its population is under age 14 or over 64 years old. There are almost no population suffer from neither water-nor vector borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and sub-district authority organizes once every two years disaster drills. Almost half of the population is participated in community activities; however they might face some difficulties in the social ethnic integration. The people are prepared for a disaster (logistics, materials, and management) and there is some support from the NGOs/CSOs after a disaster.



Less than 11% of the population lives below the poverty line with more than 3 sources of income. Unemployment in the formal sector is less than 6%, which is the same percentage for the youth unemployment as well. Almost all the population have television and telecommunication device, and up to 80% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. Up to 50% of the people are practicing saving, and up to 32% of the households are under any sort of insurance scheme. There is some support or access of credit facility during disaster for urban poor or low-income groups, but no annual budget targeting disaster risk management available. There are some subsidies/incentives for residents to receive an alternative livelihood and health care during a disaster.



In overall, the institutional issues, such as mainstreaming of DRR and CCA, effectiveness of sub-district's crisis management framework, knowledge dissemination and management, institutional collaboration with other organizations and stakeholders, and good governance are scored best for this area. Though, they weighted the institutional collaboration is the most important issue for the institutionalization of climate-disaster resilience efforts.

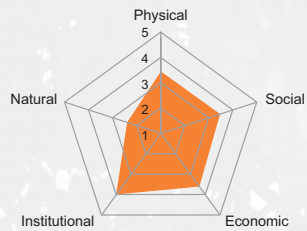


In natural term, this area has not faced any difficulties in coping with climate-related hazards, even the riverine floods occur more than once during the rainy season. Since this area is densely populated, some informal settlements can be found near the river bank and gives a poor average for the urban water quality. Almost 90% of the land is built up, but they maintain the green space up to 70% to increase city oxygen.

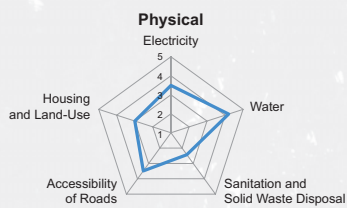


## Kecamatan 9

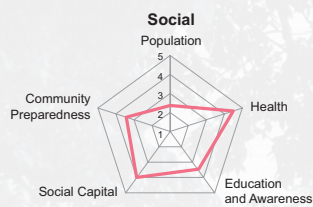
# Cibeunying Kaler



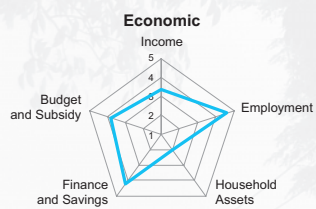
Sub-district 9, Cibeunying Kaler is consisted of 4 wards and located at the northern part of Bandung City with an area size of 4.50 km<sup>2</sup> and a population of around 69,011 in 2008. The population density is 15,355.78/km<sup>2</sup>, which is quite dense compared to other sub-districts. This area is composed mainly of residential areas with one private prominent university and a large compound of national hero cemetery. Two rivers are identified (Cidurian and Cikapayang), which are flowing through this area. The overall resilience indicates in the diagram is slightly above the average, except for the natural dimension.



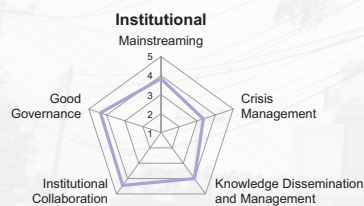
Up to 100% of the households have access to electricity and potable water supply. Up to 75% of the population has access to sanitation, but up to 25% of the solid waste is treated before dumping and up and recycled; both in formal and informal ways. More than 20% of the area's land is used as transportation network. Only 60% of the area is accessible by paved road during normal flooding in affected areas, but only up to 45% of the roads have roadside covered drain. Less than 10% of the houses are built with non-permanent structure, however less than 10% of the buildings are constructed following the building code. This area is not a hazardous area, whereas none of the population are living in the proximity to polluted industries or dumping grounds.



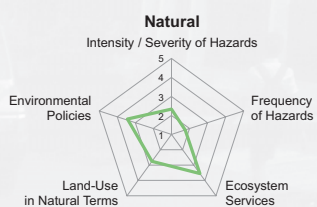
The population growth is fast compared to other sub-district, which is more than 6%, with up to 32% of its population is under age 14 or over 64 years old. There are almost no population suffer from neither water-nor vector borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and sub-district authority organizes once in every two years disaster drills. Almost half of the population is participated in community activities and they could integrate well with other ethnic groups. The people are prepared for a disaster (logistics, materials, and management) and there is some support from the NGOs/CSOs after a disaster.



Up to 30% of the population lives below the poverty line, with three sources of income. Unemployment in the formal sector is less than 6%, which is the same percentage for the youth unemployment rate as well. Almost all the population have television and telecommunication device, however less than 50% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. More than 50% of the people are practicing saving, and only up to 32% of the households are under any sort of insurance scheme. There is some support or access of credit facility during disaster for urban poor or low-income groups. And they have more than 3% annual budget targeting disaster risk management available. In addition, there some subsidies/incentives for residents to receive an alternative livelihood and health care during a disaster.



In overall, the institutional issues, such as mainstreaming of DRR and CCA, effectiveness of sub-district's crisis management framework, knowledge dissemination and management, institutional collaboration with other organizations and stakeholders, and good governance are scored best for this area. Though, they weighted the mainstreaming of DRR and CCA is most important as an effort towards climate-related disasters in their area.

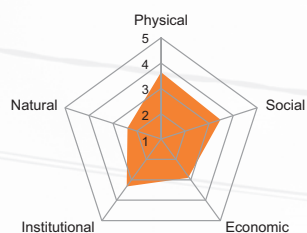


In natural term, the most affected natural hazards are riverine floods and rainfall-induced landslides. They are occurring more than once or once per year, however significant loss is not recorded, although up to 50% land of this area is located in prone areas.

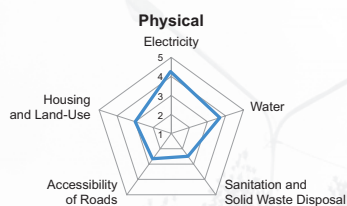


## Kecamatan 10

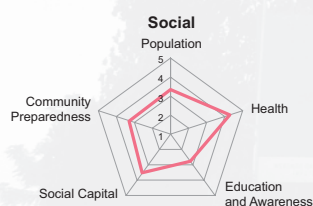
# Cibeunying Kidul



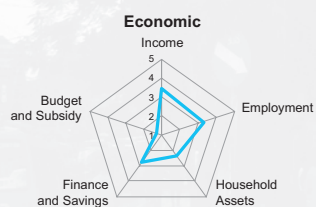
Sub-district 10, Cibeunying Kidul is consisted of 6 wards and located at the northern part of Bandung City with an area size of 5.25 km<sup>2</sup> and a population of around 111,094 in 2008. The population density is 21,160.76/km<sup>2</sup>, which is quite dense compared to other sub-districts. This area is composed mainly of residential areas and some governmental offices and services. A military training camp or institution is located as well in this area. The overall resilience indicators in the diagram is below the average, especially in the economic, institutional and natural dimension.



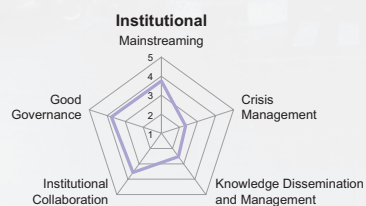
Up to 95% of the households have access to electricity and up to 80% have access to potable water supply. Up to 75% of the population has access to sanitation, but up to 25% of the solid waste is treated before dumping and up to 10% of the solid waste is recycled; both in formal and informal ways. Up to 20% of the area's land is used as transportation network. Only 70% of the area is accessible by paved road. A slightly more than half of roads remained are accessible during normal flooding in affected areas, and up to 60% of the roads have roadside covered drain. Less than 10% of the houses are built with non-permanent structure, however up to 20% of the buildings are constructed following the building code. This area is not a hazardous area, whereas none of the population are living in the proximity to polluted industries or dumping grounds.



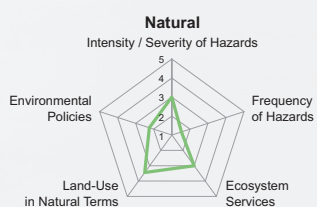
The population growth is less than 0.9%, with more than 45% of its population is under age 14 or over 64 years old. There are almost no population suffer from neither water-nor vector borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and sub-district authority organizes once a year a disaster drill. Almost half of the population is participated in community activities and they could integrate well with other ethnic groups. The people are prepared for a disaster (logistics, materials, and management) and there is some support from the NGOs/CSOs after a disaster.



Up to 30% of the population lives below the poverty line, with two sources of income. Unemployment in the formal sector is up to 24%, which is more than the percentage for the youth unemployment rate (up to 18%). Almost all the population have television and telecommunication device, however less than 50% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. Up to 50% of the people are practicing saving, and only up to 16% of the households are under any sort of insurance scheme. There is some support or access of credit facility during disaster for urban poor or low-income groups. And there is available annual budget targeting disaster risk management for less than 2%. However, no availability of subsidies/incentives for residents to receive an alternative livelihood and health care during a disaster.



Although this area has a good mainstreaming of DRR and CCA and institutional collaboration with other organizations and stakeholders; this area has not yet have the efficiency trained emergency workers during a disaster and the readiness of alternative decision making personnel during a disaster. In term of knowledge dissemination and management; there is no regular disaster training programs for emergency workers and no capacity for dissemination of disaster awareness programs. For the good governance issue; the early warning systems are not yet established and they do not have the capability yet to lead the recovery process.

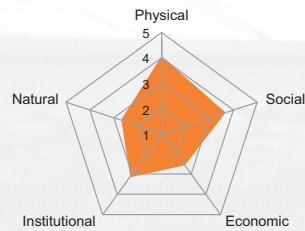


In natural term, this area experienced floods (inundated and riverine) more than once per year. And during the dry season, water scarcity occurred more than once per year as well. Additionally, this area is still weak in enforcing the environmental policies, such as poor in implementation of environmental conservation policies, waste management system, and in mitigation policies to reduce air pollution(CO<sub>2</sub> from traffic emission), especially when a regional-bus terminal is located in this area.

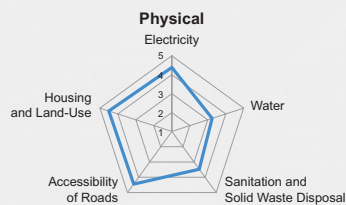


## Kecamatan 11

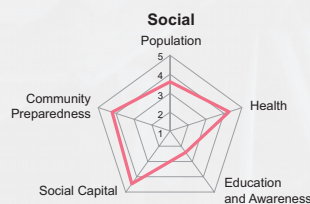
# Astanaanyar



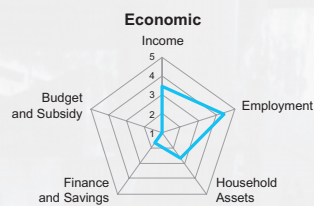
Sub-district 11, Astanaanyar is consisted of 6 wards and located at the lowland of western part Bandung City with an area size of 2.89 km<sup>2</sup> and a population of around 70,554 in 2008. The population density is 24,409.69/km<sup>2</sup>, which are the fourth most dense sub-districts. This area is currently purposed for the commercial use, where shops and markets are located. Some residential areas could be spotted with high population density. Three tributaries are flowing through this area (Citepus, Cikakal, and Ciroyom). The overall resilience indicates in the diagram is below the average, mainly in the economic, institutional and natural dimension.



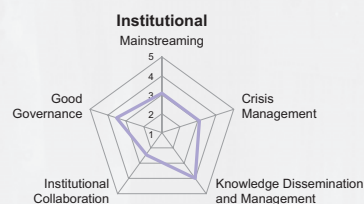
Up to 100% of the households have access to electricity and only up to 95% have access to potable water supply. Up to 75% of the population has access to sanitation and only up to 25% of solid waste is treated before dumping and almost all of the solid waste is recycled; both in formal and informal ways. More than 20% of the area's land is used as transportation network, and up to 80% of the area is accessible by paved road. More than half of roads remained are accessible during normal flooding in affected areas and up to 60% of the roads have roadside covered drain. Less than 10% of the houses are built with non-permanent structure and more than 50% of the buildings are constructed following the building code. This area is not a hazardous, thus none of the population are living in the proximity to polluted industries or dumping grounds.



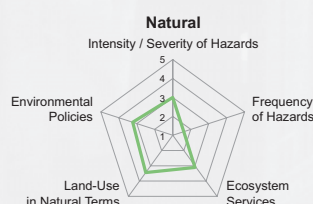
The population growth is the highest (more than 6%) and up to 39% of the population is under age 14 or over 64 years old. There are almost no population suffer from neither water-borne nor vector borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and there is no awareness or knowledge of population about the threat and impacts of disasters, thus the sub-district authority organizes once a year a disaster drills. Almost half of the population is participated in community activities and they have good social integration among different ethnic groups. The people are prepared for a disaster (logistics, materials, and management) and there is some support from the NGOs/CSOs after a disaster.



Less than 11% of the population lives below the poverty line and the majority of the people have only 1 source of income. The unemployment rate in the formal sector is less than 6%, which is the same for the percentage for the youth unemployment as well. The women who are working in the formal sector are just a few (less than 20%). Almost all the population have television and telecommunication device, however less than 50% of the households does not has furniture to secure the key items (money, important documents, etc.) for during disaster. Although more than 50% of the people are practicing saving, only up to 10% of the households are under any sort of insurance scheme. There is no support or access of credit facility during disaster for urban poor or low-income groups, neither sub-district's annual budget targeting disaster risk management available. Subsidies/incentives for residents to receive an alternative livelihood and health care during a disaster are not available.



The effectiveness of sub-district's crisis management framework, knowledge dissemination and management, as well as good governance is running properly in this area. Except for the mainstreaming of DRR and CCA; there no capacity yet in this area to produce development plans (logistics, materials/technical). In addition, for the institutional collaboration with other organizations and stakeholders; this area is heavily dependent on external institutions/support during a disaster.



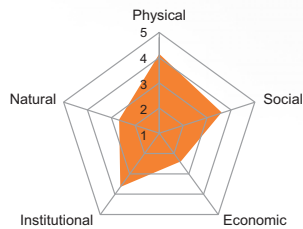
The floods, both inundated and riverine have severe impacts to this area and are occurring frequently (more than once per year). The land-use in natural terms, especially in the average intensity of land-use-urban morphology (built area) has occupied almost up to 90% of this area.



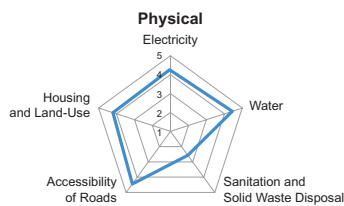


## Kecamatan 12

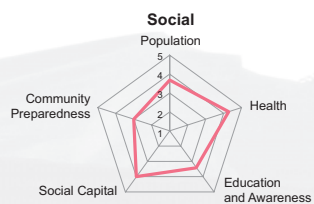
# Bojongloa Kaler



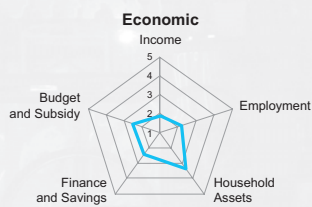
Sub-district 12, Bojongloa Kaler is consisted of 5 wards and located at the south- western end of Bandung City with an area size of 3.03 km<sup>2</sup> and a population of around 120,894 in 2008. The population density is 39,899.01/km<sup>2</sup>, which is the most dense sub-districts among Bandung City. This area is well-known for its settlement areas. Almost 90% of the land is occupied for the residential purpose. Some shops could be found along the major roads. The overall resilience indicates in the diagram is slightly below the average, particularly in the economic and natural dimension.



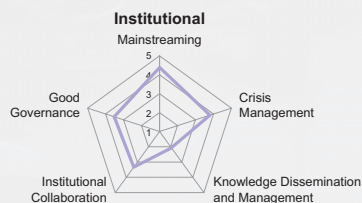
Up to 100% of the households have access to electricity and potable water supply. Only up to 60% of the population has access to sanitation and only up to 25% of solid waste is treated before dumping and only up to 10% of the solid waste is recycled; both in formal and informal ways. More than 20% of the area's land is used as transportation network, and up to 80% of the area is accessible by paved road. Up to 70% of roads remained are accessible during normal flooding in affected areas and only up to 45% of the roads have roadside covered drain. Up to 19% of the houses are built with non-permanent structure and more than 50% of the buildings are constructed following the building code. This area is not a hazardous, thus none of the population are living in the proximity to polluted industries or dumping grounds.



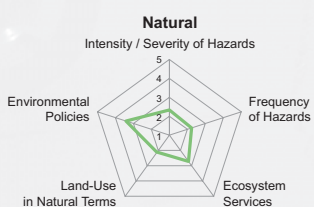
The population growth is ranged between 1-1.9% and more than 25% of the population is under age 14 or over 64 years old. There are almost no population suffer from neither water- nor vector borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and there is a good awareness or knowledge of the population about the threat and impacts of disasters and the sub-district authority organizes once in every two years a disaster drills. Almost half of the population is participated in community activities and they are trying to integrate socially among different ethnic groups. The people put an effort to be prepared for a disaster (logistics, materials, and management) and some support from the NGOs/CSOs after a disaster is available.



The population lives below the poverty line is ranged between 21-30% and the majority of the people have only 1 source of income. The unemployment rate in the formal sector is more than 25%, more than youth unemployment rate (19-24%). The women who are working in the formal sector are up to 50% and almost all the population have television and telecommunication devices; however only up to 60% of the households does not has furniture to secure the key items (money, important documents, etc.) for during disaster. Only up to 20% of the people are practicing saving and only up to 10% of the households are under any sort of insurance scheme. There is some support or access of credit facility during disaster for urban poor or low-income groups and sub-district's annual budget targeting disaster risk management is available for less than 1%. There are no subsidies/incentives for residents to receive an alternative livelihood after disaster; however subsidies and support for a health care after a disaster is provided.



The institutional issues such as mainstreaming DRR and CCA, effectiveness of sub-district's crisis management framework are running well in this area. However for the knowledge dissemination and management, the regular disaster training programs for emergency workers is not yet available as well as the disaster awareness programs for communities. Therefore, the community is not satisfied yet with the disaster awareness programs, such as disaster education in the sub-district. Additionally, in term of good governance, the disaster drills at sub-district level is not yet existed.



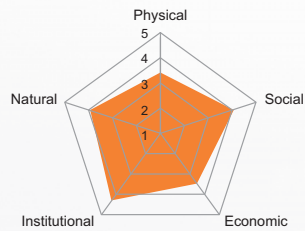
The frequency of floods (inundated and riverine) in this area is more than once every year and cause severe impacts to the area, such as causing the poor average of urban water quality. For the land-use in natural term issue, more than 90% of the land is built and left only up to 5% for urban green spaces.



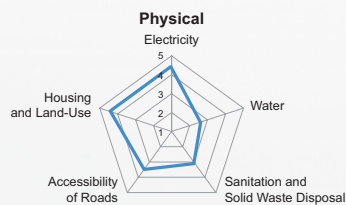


## Kecamatan 13

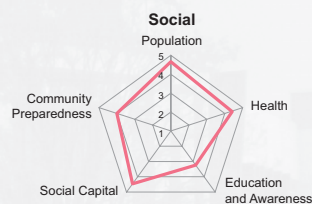
# Babakan Ciparay



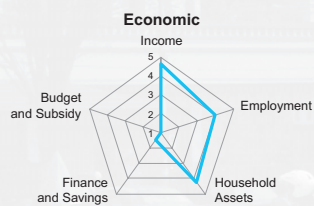
Sub-district 13, Babakan Ciparay has 6 wards and is located at the south- western end of Bandung City with an area size of 7.45 km<sup>2</sup> and a population of around 142,309 in 2008. The population density is about 19,101.88/km<sup>2</sup>, which is quite dense compared to other sub-districts. This area is mainly composed of residential areas and industries, which are mostly textile industries, such as garments. The overall resilience indicates in the diagram is above the average, except for the economic dimension.



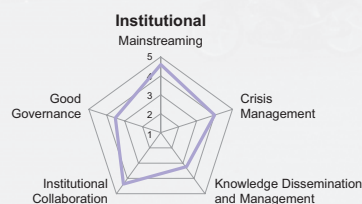
Up to 100% of the households have access to electricity and potable water supply. Additionally, up to 75% of the population has access to sanitation, but up to 25% of the solid waste is treated before dumping and recycled; both in formal and informal ways. Up to 15% of the area's land is used as transportation network and almost whole area is accessible by paved road, but only less than 40% of roads remained accessible during normal flooding in affected areas. Additionally, up to 60% of the roads have roadside covered drain. There is only 10% of the houses are built with non-permanent structure, but only up to 30% of the buildings are constructed following the building code. Although quite amount of garment industries are located in this area, none of the population are living in the proximity to polluted industries or dumping grounds.



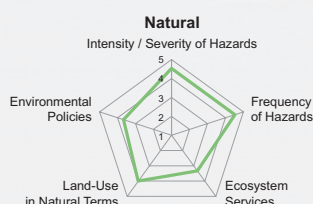
The population growth in this area is only up to 0.9% and less than 25% of the population is under age 14 or over 64 years old. There are almost no population suffer from neither water-borne nor vector borne diseases every year and up to 75% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and the sub-district authority organizes once a year disaster drill. However, the schools could not be used or have a function after a disaster. Almost half of the population is participated in community activities; and they could integrate well in term of the social ethnics. People are prepared for a disaster (logistics, materials, and management) and there is some support from the NGOs/CSOs after a disaster.



Less than 11% of the population lives below the poverty line and having more than three sources of income. Unemployment in the formal sector is less than 6%, which is the same percentage for the youth unemployment rate as well. Almost all the population has television and telecommunication device, however only up to 60% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. There is only up to 30% of the people are practicing saving and only less than 10% of the households are under any sort of insurance scheme. There is some support or access of credit facility during disaster for urban poor or low-income groups, but there is no annual budget available in targeting disaster risk management. In addition, there are no subsidies/incentives available for residents to receive an alternative livelihood and health care during a disaster as well.



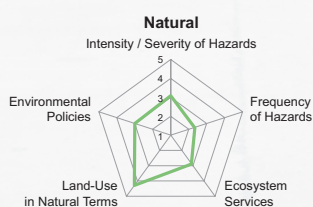
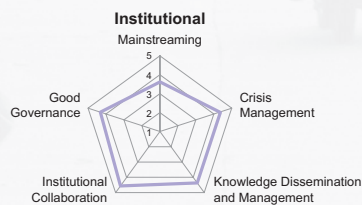
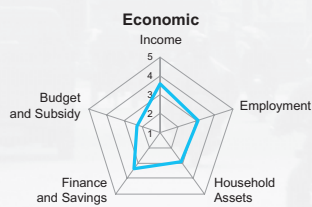
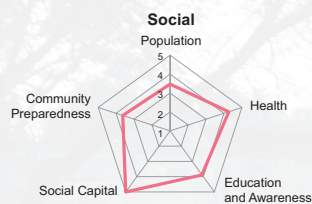
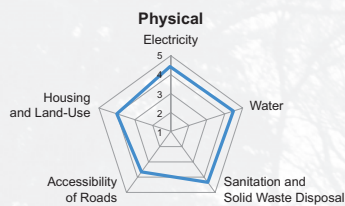
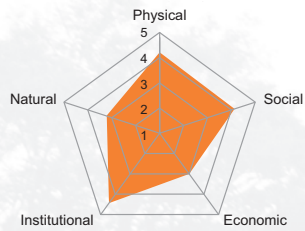
Almost all institutional issues, such as: mainstreaming the DRR and CCA, effectiveness of sub-district's crisis management framework, knowledge dissemination and management, institutional collaboration with other organizations and stakeholders as well as good governance; are fulfilled by this sub-district.



The natural hazards that frequently struck this area are mostly riverine floods, which occur once a year, especially during the rainy season. The loss of the urban green space due to development of infrastructure is up to 20%. Although some industries are settled in this sub-district, the implementation of efficient waste management system and mitigation policies to reduce air pollution (mostly due to CO<sub>2</sub> traffic emissions) are moderate, no harm violation is so far reported. It reflects in their good implementation of environmental conservation policies.

## Kecamatan 14

# Bojongloa Kidul



Sub-district 14, Bojongloa Kidul has 6 wards and is located at the southern- west end of Bandung City with an area size of 6.26 km<sup>2</sup> and a population of around 81,045 in 2008. The population density is 12,946.49/km<sup>2</sup>, which is quite dense compared to other sub-districts. Only settlements could be found in this area, with some shops along the major roads. Famous national shoes industries are located in this area and being a landmark as well as source of income for this area. Unfortunately, this area is located on the lowland and some of the major roads are subsided, during the rainy season, most of the roads are heavily inundated. The overall resilience indicates in the diagram is above the average, of which less resilient can be distinguished in the economic and natural dimension.

Almost all of the households have access to electricity and potable water supply. Up to 75% of the population has access to sanitation, but up to 25% of the solid waste is treated before dumping and up to 75% are recycled; both in formal and informal ways. Up to 20% of the area's land is used as transportation network and more than 80% of the area is accessible by paved road. Up to 70% of roads remained accessible during normal flooding in affected areas, but less than 15% of the roads have roadside covered drain. There is only 10% of the houses are built with non-permanent structure and more than 50% of the buildings are constructed following the building code. This area is not a hazardous area, whereas none of the population are living in the proximity to polluted industries or dumping grounds.

The population growth is ranged between 4-5.9% and less than 25% of the population is under age 14 or over 64 years old. There are almost no population suffer from neither water-borne nor vector borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and the sub-district authority organizes once a year disaster drill. Almost half of the population is participated in community activities; and they could integrate well in term of the social ethnics. People are prepared for a disaster (logistics, materials, and management) and there is some support from the NGOs/CSOs after a disaster.

Less than 11% of the population lives below the poverty line with only one source of income. Unemployment in the formal sector is less than 16%, which is lesser than the percentage for the youth unemployment rate (ranged between 19-24%). Almost all the population has television and telecommunication device, however only up to 10% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. Up to 50% of the people are practicing saving but only up to 32% of the households are under any sort of insurance scheme. There is some support or access of credit facility during disaster for urban poor or low-income groups. And there is small budget available less than 1% of the annual budget targeting disaster risk management. There are no subsidies/ incentives available for residents to receive an alternative livelihood but they provide some support for a health care after a disaster.

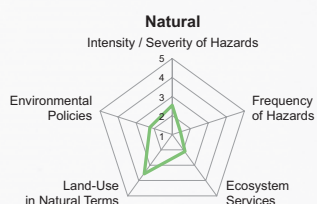
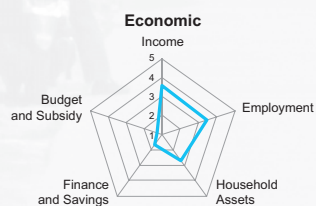
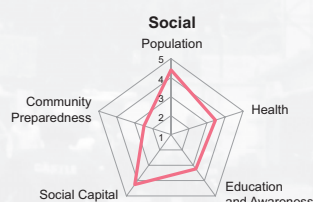
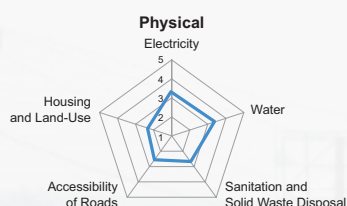
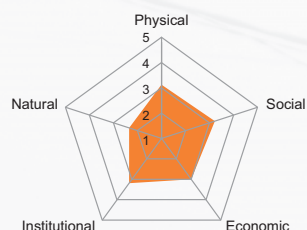
In term of institutional issues such as: mainstreaming the DRR and CCA, effectiveness of sub-district's crisis management, knowledge dissemination and management, institutional collaboration with other organizations and stakeholders, as well as good governance; this sub-district has applied and covered those issues. In particular, the capability of sub-district body to lead recovery process (relief work, reconstruction, and rehabilitation) after a disaster is at its best.

During the rainy season, this area experiences inundation more than once a year and during the dry season, water scarcity is occurring once in a year. Rainfall-induced landslides at the river banks (Citepus) are occurring once a year as well. Due to heavy traffic flow, the average of urban air quality is poor. In addition, poor implementations of efficient waste management system (reduce, reuse, and recycle) hamper the sound of environmental policies.



## Kecamatan 15

# Bandung Kulon



Sub-district 15, Bandung Kulon has the most wards (8 wards) and is located at the western end of Bandung City, bordered with Cimahi, with an area size of 6.46 km<sup>2</sup> and a population of around 123,350 in 2008. The population density is 19,404.02/km<sup>2</sup>, which is dense compared to other sub-districts. This area is characterized mostly by the settlements and industries. The overall resilience indicates in the diagram is below the average, of which all five dimensions have low resilience index score.

Up to 95% of the households have access to electricity and up to 80% to potable water supply. Only up to 75% of the population has access to sanitation, but only up to 25% of the solid waste is treated before dumping and 50% of them are recycled; both in formal and informal ways. Almost 20% of the area's land is used as transportation network. But only up to 60% of the area is accessible by paved road and less than 40% of roads remained accessible during normal flooding in affected areas and up to 30% of the roads have roadside covered drain. More than 30% of the houses are built with non-permanent structure and up to 30% of the buildings are constructed following the building code. Seeing they are living between the industrial areas, almost 49% of the population lives on the hazardous area (industry pollutions).

The population growth is less than 0.9%, with less than 25% of its population is under age 14 or over 64 years old. There are almost no population suffer from neither water-nor vector borne diseases every year and only up to 95% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are quite provided and able to serve the community. Less than 50% of the people are illiterate and sub-district authority organizes once every two years a disasters drills. Almost half of the population is participated in community activities and they could integrate well with other ethnic groups. The people are quite prepared for a disaster (logistics, materials, and management) there is limited support from the NGOs/CSOs after a disaster.

Less than 11% of the population lives below the poverty line with 2 (two) income sources. Unemployment in the formal sector is up to 24%, which is more than the youth unemployment rate as well. Almost all the population has television and telecommunication device, however only up to 60% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. Only up to 20% of the people are practicing saving and only up to 10% of the households are under any sort of insurance scheme. There is some support or access of credit facility during disaster for urban poor or low-income groups; however they do not have an annual budget targeting disaster risk management available up. There are some subsidies/incentives available for residents to receive an alternative livelihood but they do not provide it for the health care during a disaster.

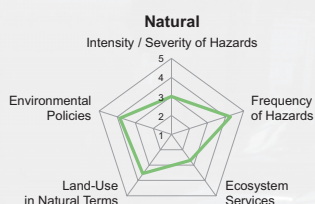
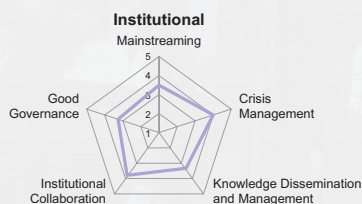
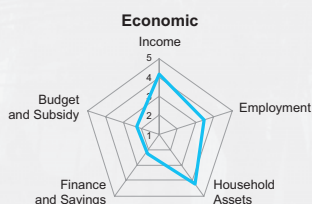
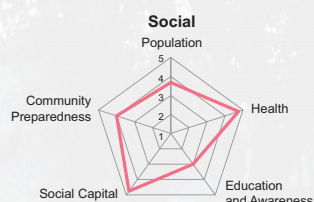
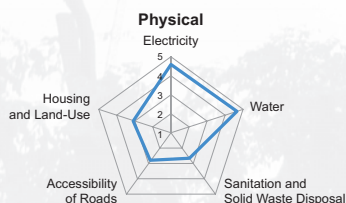
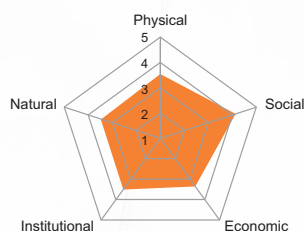
In term of institutional issues, this area has a quite good performance on the effectiveness of sub-district's crisis management and the institutional collaboration with other organizations and stakeholders. However, on the mainstreaming the DRR and CCA aspect, this area has a poor capacity (logistics, materials/technical issues) to produce development plans. Additionally, on the knowledge dissemination and management aspect, this area has a poor capacity (books, leaflets, manpower, and campaigns) for dissemination of disaster awareness programs (disaster education). In addition, on the good governance aspect, the transparency of sub-district body to lead recovery process (relief work, reconstruction, and rehabilitation) is poor as well.

Floods (inundated as well as riverine type) occur often, which count more than once a year and give a severe impact to the people and environment. Other climate-related hazards that threatened this area once a year are rainfall-induced landslides, storms, and water scarcity (during the dry season). These are reflected on its ecosystem service, such as very poor average of urban water quality and poor urban air quality during the day. These factors are existed due to poor implementation of environmental conservation policies and environmental conservation regulations reflected in development plans.



## Kecamatan 16

# Regol



Sub-district 16, Regol has 7 wards and is located at the lowland on southern-west of Bandung City with an area size of 4.30 km<sup>2</sup> and a population of around 86,500 in 2008. The population density is 20, 116,29 /km<sup>2</sup>, which dense compared to other sub-districts. This area was previously be the center of the City and marked with the city garden and mosque. A historical building back from Dutch colonialism heritage can be found, which currently has the function of holding International Conferences, such as the Non-Align Asia-Africa Movement. Beside the historical buildings and city green space services, international and local banking buildings are existed. A major river (Cikapundung) is flowing through this area as well. The overall resilience indicates in the diagram is above the average, particularly in the physical, social, and institutional dimension.

Up to 100% of the households have access to electricity and potable water supply. Up to 75% of the population has access to sanitation, but up to 25% of the solid waste is treated before dumping and recycled; both in formal and informal ways. Up to 15% of the area's land is used as transportation network and more than 80% of the area is accessible by paved road. More than 71% of roads remained accessible during normal flooding in affected areas, but only up to 45% of the roads have roadside covered drain. There is only 10% of the houses are built with non-permanent structure, however less than 20% of the buildings are constructed following the building code. This area is not a hazardous area, whereas none of the population are living in the proximity to polluted industries or dumping grounds.

The population growth is up to 5.9%, much more compare to other sub-districts and less than 25% of the population is under age 14 or over 64 years old. There are almost no population suffer from neither water-nor vector borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and the sub-district authority organizes once a year disaster drill. Almost half of the population is participated in community activities; and they could integrate well in term of the social ethnics. People are prepared for a disaster (logistics, materials, and management) and there is some support from the NGOs/CSOs after a disaster.

Less than 11% of the population lives below the poverty line and the income come from two sources. Unemployment in the formal sector is up to 24%, which is the same percentage for the youth unemployment as well. Almost all the population have television and telecommunication device, however less than 50% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. There is only up to 30% of the people are practicing saving and the same percentage of the households is under any sort of insurance scheme. There is no support or access of credit facility during disaster for urban poor or low-income groups. And there is small budget available up to 3% for annual budget targeting disaster risk management. There are no subsidies/incentives available for residents to receive an alternative livelihood and health care during a disaster.

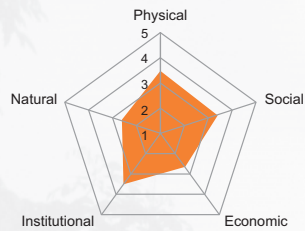
Although this area has a good mainstreaming of DRR and CCA and community participation in their development plans and preparation process, as well as the inclusion of disaster management plan into development planning; the frequency of regular disaster training programs for emergency workers is less than once in every two years. Additionally, this area is dependent on external institutions/support during a disaster and the existence of disaster drills at sub-district level is as well less than one in every two years.

Even this sub-district has a major river (Cikapundung) flowing through it, the intensity and the severity of the floods have not heavily impacted the area and people. The average intensity of land-use-urban morphology (built area) is up to 90% and they implement mitigation policies to reduce air pollution (mainly CO<sub>2</sub> from the traffic emissions).

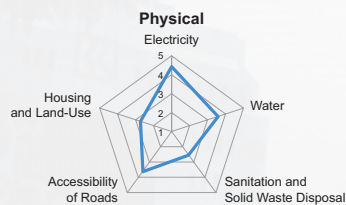


## Kecamatan 17

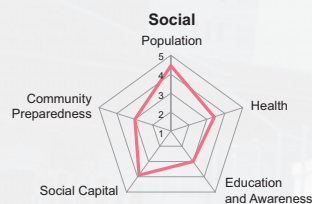
# Lengkong



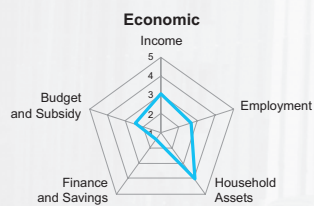
Sub-district 17, Lengkong has 7 wards and is located at the highland at the central part of Bandung City with an area size of 5.90 km<sup>2</sup> and a population of around 71,983 in 2008. The population density is 12,200.51/km<sup>2</sup>, which is quite dense compared to other sub-districts. This area is characterized by a main river (Cikapundung) flowing from north to south and two other tributaries channels. This area is mainly composed from residential areas. The overall resilience indicates in the diagram is below the average, marked for the economic and natural dimension.



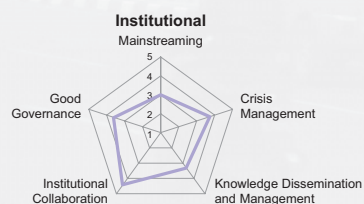
Up to 100% of the households have access to electricity and potable water supply. However, the sub-district's water supply authority is only capable to provide water supply up to 10% of its demand. Up to 75% of the population has access to sanitation, and only half of the collected solid waste is treated before dumping and recycled; both in formal and informal ways. More than 20% of the area's land is used as transportation network and 100% of the area is accessible by paved road. A slightly more than half of roads remained are accessible during normal flooding in affected areas, but only less than 15% of the roads have roadside covered drain. Less than 10% of the houses are built with non-permanent structure, however less than 10% of the buildings are constructed following the building code. This area is not a hazardous area, whereas none of the population are living in the proximity to polluted industries or dumping grounds.



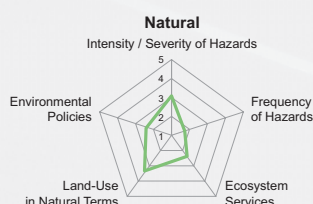
The population growth is less than 0.9%, and less than 25% of the population is under age 14 or over 64 years old. There are almost no population suffer from neither water-nor vector borne diseases every year, but only up to 75% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are quite good equipped and able to serve the community. Less than 50% of the people are illiterate and the sub-district authority organizes once a year a disaster drills. Almost half of the population is participated in community activities and could blend well with other social ethnic groups. However, the level of democracy, which the sub-district's community has the opportunity to participate in the sub-district's decision making process, is poor. The people are prepared for a disaster (logistics, materials, and management) and there is little support from the NGOs/CSOs after a disaster.



Up to 20% of the population lives below the poverty line, but the income is only come from one source. Unemployment in the formal sector is up to 18%, which it accounts more for the youth employment rate (less than 25%). Almost all the population have television and telecommunication device, however less than 50% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. Although more than 50% of the people are practicing saving, only up to 16% of the households are under any sort of insurance scheme. There is no support or access of credit facility during disaster for urban poor or low-income groups. Additionally, the available annual budget targeting disaster risk management is up to 3%, but no availability of subsidies/incentives for residents to receive an alternative livelihood.



Although this area is quite good in mainstreaming of DRR and CCA and community participation in their development plans and preparation process, as well as the efficiency of trained emergency workers during a disaster; in term of good governance, the sub-district authority organizes disaster drills at this level only less than once every two years.

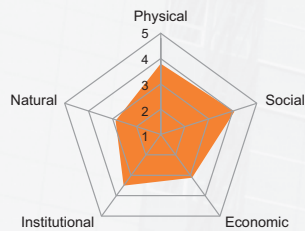


In term of intensity and frequency of the natural hazards, this area is most suffered from the impacts of floods, storms and water scarcity (during dry season). Those can be occurred more than once per year. The ecosystem service in this sub-district has scored less in the average of urban air quality during the day and water quality. It is reflected in poor implementation of mitigation policies to reduce air pollution (mostly CO<sub>2</sub> from the traffic emissions).

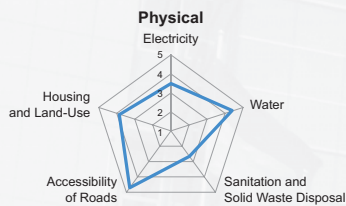


## Kecamatan 18

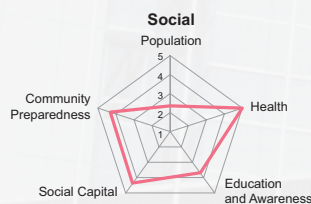
# Batununggal



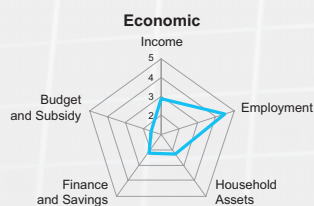
Sub-district 18, Batununggal has the most wards of all (8) and is located at the central part of Bandung City with an area size of 5.03 km<sup>2</sup> and a population of around 123,392 in 2008. The population density is 24,531.21/km<sup>2</sup>, which is very dense compared to other sub-districts. This area is mainly for residential purposes with some commercial and service functions in between. A military-academy compound is well-known for this area. Initially, 40 years ago, this area was an agricultural field. The overall resilience indicates in the diagram is below the average, especially in the economic and natural dimension.



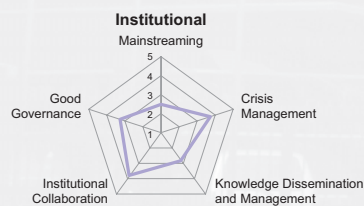
Up to 100% of the households have access to electricity and potable water supply. Up to 75% of the population has access to sanitation, but up to 25% of the solid waste is treated before dumping and up to 75% of the solid waste is recycled; both in formal and informal ways. More than 20% of the area's land is used as transportation network. Only 70% of the area is accessible by paved road and more than half of roads remained are accessible during normal flooding in affected areas. Almost all the roads have roadside covered drain. Less than 10% of the houses are built with non-permanent structure, however less than 10% of the buildings are constructed following the building code. This area is not a hazardous area, whereas none of the population are living in the proximity to polluted industries or dumping grounds.



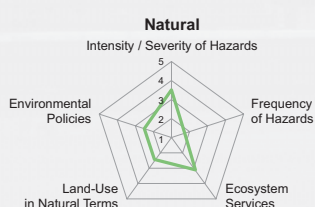
The population growth is ranged between 1-1.9%, and less than 25% of its population is under age 14 or over 64 years old. There are almost no population suffer from neither water-borne nor vector borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and sub-district authority organizes once a year a disaster drill. Almost half of the population is participated in community activities and could blend well with other ethnic groups. The people are prepared for a disaster (logistics, materials, and management) and there is support from the NGOs/CSOs after a disaster.



Up to 20% of the population lives below the poverty line, but the income is only come from one source. Unemployment in the formal sector is less than 6%, which is the same percentage for the youth unemployment rate as well. Almost all the population has television but only up to 60% has the telecommunication devices. However, less than 50% of the households have furniture to secure the key items (money, important documents, etc.) for during disaster. Only up to 10% of the people are practicing saving and only up to 10% of the households are under any sort of insurance scheme. There is few support or access of credit facility during disaster for urban poor or low-income group. There is no annual budget available targeting disaster risk management, neither subsidies/incentives for residents to receive an alternative livelihood and health care that are available during a disaster.



The mainstreaming of DRR and CCA in this area is not yet established, the same applies for the community participation in their development plans and preparation process, as well as the inclusion of disaster management plan into their development planning. Additionally, the capacity for dissemination of disaster awareness programs (books, leaflets, manpower, campaigns, etc. for disaster education) is poor. This sub-district depends on external institutions/support during a disaster.



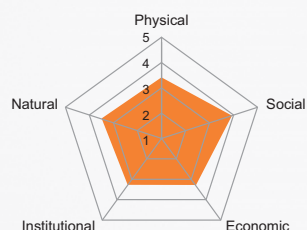
The natural aspects of this area are focusing on the frequency of occurring natural hazards, although it was not severe according to the records. The floods are occurring more than once per year. Due to maximum urban population density at day time and the occupation of motorized vehicles, the average of urban air quality is poor. It was reflected in the poor environmental conservation regulations reflected in development plans, efficient waste management system, as well as poor implementation of mitigation policies to reduce air pollution (mainly CO<sub>2</sub> from the traffic emissions).



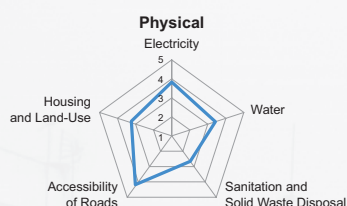


## Kecamatan 19

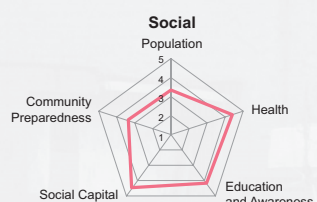
# Kiaracondong



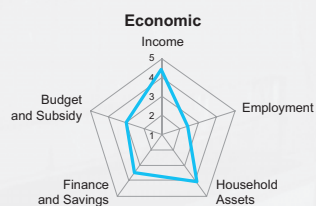
Sub-district 19, Kiaracondong has 6 wards and is located at the central part of Bandung City with an area size of 6.12 km<sup>2</sup> and a population of around 129,623 in 2008. The population density is 21,180.23/km<sup>2</sup>, which is dense compared to other sub-districts. Although this area is mainly for settlements purpose, however a large gun industry for military purpose is established since two decades ago. The overall resilience indicates in the diagram is above the average, mainly in the social dimension.



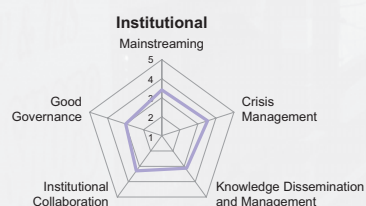
Up to 100% of the households have access to electricity and up to 95% have access to potable water supply. Up to 60% of the population has access to sanitation, but up to 25% of the solid waste is treated before dumping and up to 50% of the solid waste is recycled; both in formal and informal ways. More than 20% of the area's land is used as transportation network. Only 70% of the area is accessible by paved road. A slightly more than half of roads remained are accessible during normal flooding in affected areas, but only up to 45% of the roads have roadside covered drain. Up to 29% of the houses are built with non-permanent structure, however only up to 20% of the buildings are constructed following the building code. Since a large gun industry is existed in this area and all the population is living in the proximity to polluted industry and dumping ground, thus they are exposed to hazardous substances.



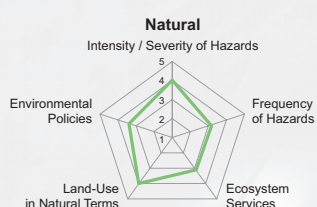
The population growth is quite high, up to 3.9% and up to 46% of the population is under age 14 or over 64 years old. On the contrary, there are almost no population suffer from neither water-nor vector borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and sub-district authority organizes once a year a disaster drill. Almost half of the population is participated in community activities and could blend well with other ethnic groups. The people are prepared for a disaster (logistics, materials, and management) and there is some support from the NGOs/CSOs after a disaster.



Less than 11% of the population lives below the poverty line and they have more than 3 sources of income. Unemployment in the formal sector is up to 18%, which is the same percentage for the youth unemployment rate as well. Almost all the population have television and telecommunication device, and up to 80% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. More than 50% of the people are practicing saving and half of households are under any sort of insurance scheme. There is some support or access of credit facility during disaster for urban poor or low-income groups. And there is some annual budget targeting disaster risk management available up to 3%. In addition, some subsidies/incentives for residents to receive an alternative livelihood and health care are available during a disaster.



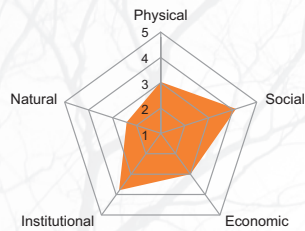
The institutional issues; such as mainstreaming DRR and CCA, effectiveness of sub-district's crisis management framework, knowledge dissemination and management, and good governance are running properly. Except the availability and frequency of regular disaster training programs for emergency workers is not available. In addition, the existence of disaster drills at the sub-district's level is only held less than once every two years.



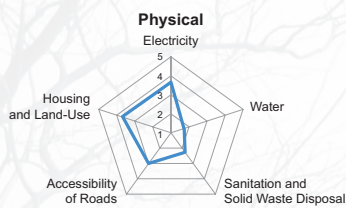
The frequencies of the natural hazards, such as floods are occurring more than once per year. The ecosystem service of this area, such as the average of urban water quality is poor, although the implementation of mitigation policies to reduce air pollution (such as CO<sub>2</sub> from the traffic emissions) is good.

## Kecamatan 20

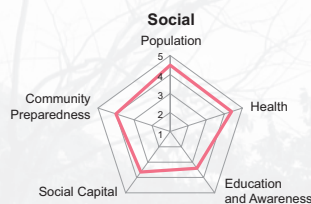
# Arcamanik



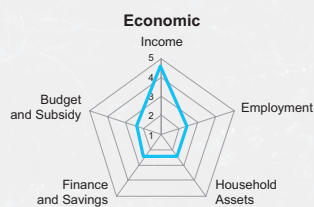
Sub-district 20, Arcamanik is consisted from 4 wards and located at the eastern part of Bandung City with an area size of 5.87 km<sup>2</sup> and a population of around 57,869 in 2008. The population density is 9,858.43/km<sup>2</sup>, which is not dense compared to other sub-districts. This area is mainly composed for residential purpose, with green spaces in between. This area could be distinguished from the large horse racing tracks in the city and a large compound of state prisoner facilities. The overall resilience indicates in the diagram is below the average, mainly in the physical, economic, and natural dimension.



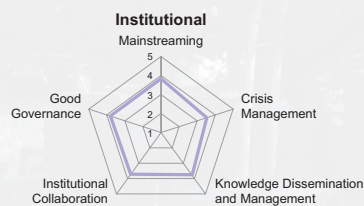
Up to 95% of the households have access to electricity and only up to 50% have access to potable water supply. Up to 75% of the population has access to sanitation and the solid waste is not treated at all before dumping and only up to 25% of the solid waste is recycled; both in formal and informal ways. More than 20% of the area's land is used as transportation network. Only up to 60% of the area is accessible by paved road. A half of roads remained are accessible during normal flooding in affected areas, but only up to 30% of the roads have roadside covered drain. Less than 10% of the houses are built with non-permanent structure, however up to 30% of the buildings are constructed following the building code. Although this area is not a hazardous area, up to 12.5% of the population are living in the proximity to polluted industries or dumping grounds.



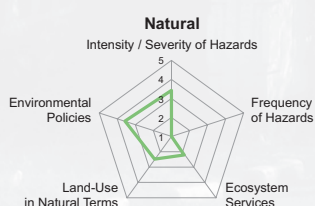
The population growth is quite high, up to 5.9 and up to 32% of the population is under age 14 or over 64 years old. There are almost no population suffer from neither water-nor vector borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and sub-district authority organizes once a year a disaster drill. Almost half of the population is participated in community activities and they have good social integration among different ethnic groups. The people are prepared for a disaster (logistics, materials, and management) and there is some support from the NGOs/CSOs after a disaster.



Less than 11% of the population lives below the poverty line and the majority of the people have 2 sources of income. The unemployment rate in the formal sector is less than 6%, which is less than the percentage for the youth unemployment (up to 12%). The women who are working in the formal sector are just a few (less than 20%). Almost all the population have television and telecommunication device, however less than 50% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. Although more than 50% of the people are practicing saving, only up to 10% of the households are under any sort of insurance scheme. There is some support or access of credit facility during disaster for urban poor or low-income groups. And there is also annual budget targeting disaster risk management available less than 1%. Subsidies/incentives for residents to receive an alternative livelihood and health care during a disaster are uncertain.



The institutional issues; such as mainstreaming DRR and CCA, effectiveness of sub-district's crisis management framework, knowledge dissemination and management, as well as institutional collaboration with other organizations and stakeholders, and good governance are running properly. Except when it comes to a disaster, this sub-district is still dependent on external institutions/support.

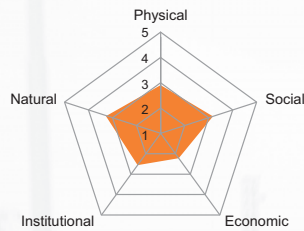


The floods, both inundated and riverine as well as storms and drought or water scarcity (during the dry season) occurred frequently (more than once per year). The ecosystem services, such as the average of urban air and water quality as well as urban groundwater are in poor condition. It is reflected in the large loss of urban green spaces due to development of infrastructure and housing over the last 50 years.

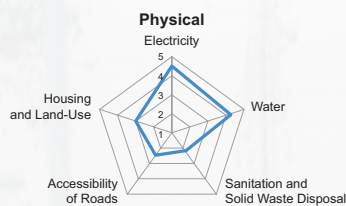


## Kecamatan 21

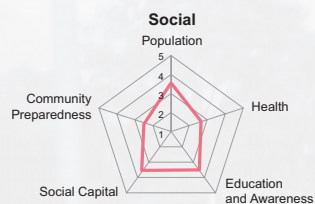
# Cibiru



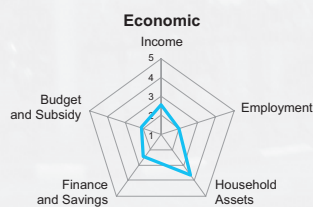
Sub-district 21, Cibiru is consisted of 4 wards and located at the eastern end and forms a border of Bandung City with an area size of 6.32 km<sup>2</sup> and a population of around 60,001 in 2008. The population density is 9,394.82/km<sup>2</sup>, which is not dense compared to other sub-districts. This area is located on the slope of a mountain (Manglayang) and is prone to landslides. The landuse is mostly composed by settlement with a provincial largest Islamic state university mix within the area. The overall resilience indicates in the diagram is below the average, particularly in the institutional, economic and natural dimension.



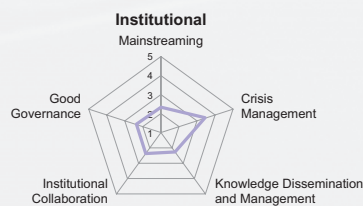
Up to 100% of the households have access to electricity and up to 95% have access to potable water supply. Up to 75% of the population has access to sanitation, but up to 25% of the solid waste is treated before dumping and only up to 10% of the solid waste is recycled; both in formal and informal ways. Up to 20% of the area's land is used as transportation network. Only 60% of the area is accessible by paved road. A slightly more than half of roads remained are accessible during normal flooding in affected areas, but only up to 30% of the roads have roadside covered drain. Less than 19% of the houses are built with non-permanent structure, however less than 10% of the buildings are constructed following the building code. Although this area is not a hazardous area, up to a quarter of the population are living in the proximity to polluted industries or dumping grounds.



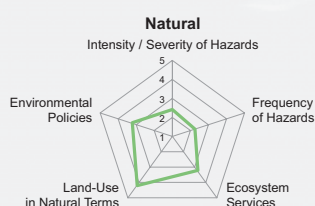
The population growth is ranged between 2-3.9% and less than 25% of the population is under age 14 or over 64 years old. Up to population 17% suffer from water-and vector borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and sub-district authority organizes once a year a disaster drill. Only up to 30% of the population is participated in community activities and they could blend among different ethnic groups. The people are poor in preparing disaster preparedness (logistics, materials, and management), although there is some support from the NGOs/CSOs after a disaster.



Up to 30% of the population lives below the poverty line, although the income comes from two sources. Unemployment in the formal sector is more than 25%, which is the same percentage for the youth unemployment as well. Almost all the population have television and telecommunication device, and up to 70% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. Although up to 20% of the people are practicing saving, only up to 10% of the households are under any sort of insurance scheme. There is some support or access of credit facility during disaster for urban poor or low-income groups. And there is annual budget targeting disaster risk management available for less than 1%. But there are no funds for climate change related DRR measures.



Up to 30% of the population lives below the poverty line, although the income comes from two sources. Unemployment in the formal sector is more than 25%, which is the same percentage for the youth unemployment as well. Almost all the population have television and telecommunication device, and up to 70% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. Although up to 20% of the people are practicing saving, only up to 10% of the households are under any sort of insurance scheme. There is some support or access of credit facility during disaster for urban poor or low-income groups. And there is annual budget targeting disaster risk management available for less than 1%. But there are no funds for climate change related DRR measures.

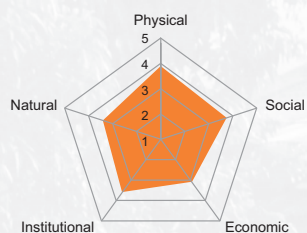


There is no significant intensity and frequency from the natural hazards, such as floods, only the drought or water scarcity occurred often, mostly more than once per year. The ecosystem service for this area scored a quite good condition.

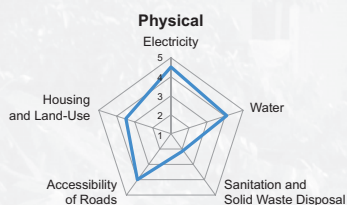


## Kecamatan 22

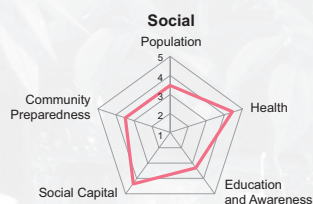
# Antapani



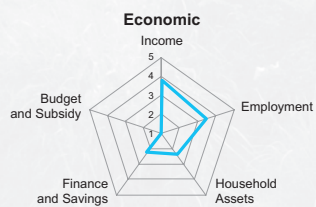
Sub-district 22, Antapani is consisted from 4 wards and located at the central part of Bandung City with an area size of 3.79 km<sup>2</sup> and a population of around 59,929 in 2008. The population density is 15,812.40/km<sup>2</sup>, which is quite dense compared to other sub-districts. This area is mainly a residential area only, with some area is used for commercial purpose, such as shopping mall and shops. The overall resilience indicates in the diagram is above the average, although in the economic dimension, this sub-district tends weaker as the other.



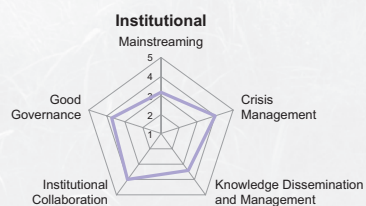
Up to 100% of the households have access to electricity and potable water supply. Up to 75% of the population has access to sanitation, but the solid waste is not treated at all before dumping and only up to 10% of the solid waste is recycled; both in formal and informal ways. Up to 15% of the area's land is used as transportation network. All the area is accessible by paved road and up to 70% of roads remained accessible during normal flooding in affected areas. But only up to 45% of the roads have roadside covered drain. More than 30% of the houses are built with non-permanent structure, however only up to 20% of the buildings are constructed following the building code. This area is not a hazardous area, whereas none of the population are living in the proximity to polluted industries or dumping grounds.



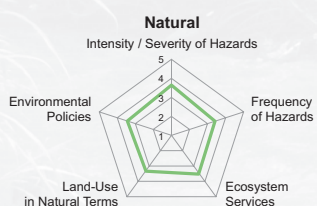
The population growth is less than 0.9%, and more than 45% of the population is under age 14 or over 64 years old. There are almost no population suffer from neither water-nor vector borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and sub-district authority organizes once in every 5 years disaster drill. Almost half of the population is participated in community activities and the social ethnic integration runs smoothly. The people are prepared for a disaster (logistics, materials, and management) and there is some support from the NGOs/CSOs after a disaster.



Less than 11% of the population lives below the poverty line and the income is coming from 2 sources. Unemployment in the formal sector is up to 24%, which is the same percentage for the youth unemployment rate as well. Almost all the population have television and telecommunication device, however less than 50% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. Only 30% of the people are practicing saving and up to 24% of the households are under any sort of insurance scheme. There is no support or access of credit facility during disaster for urban poor or low-income groups. And there are no available annual budget targeting disaster risk management, nor the availability of subsidies/incentives for residents to receive an alternative livelihood and health care during a disaster.



Although this area has a good mainstreaming of DRR and CCA and community participation in their development plans and preparation process, as well as the promptness of the sub-district's body in disseminating emergency information during a disaster; the capacity (logistics, materials/technical issues) to produce development plans is poor.

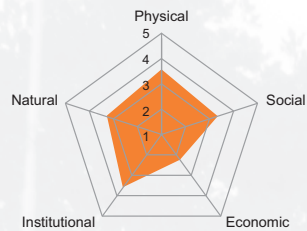


From the natural dimension point of view, significant effects on the intensity and frequency of the natural hazards are not available. The ecosystem service and environmental policies are in good condition. However, for the land-use in natural term, the average intensity of land-use-urban morphology (built area) has consumed up to 90% of land. This is in line with the 40% loss of urban green spaces.

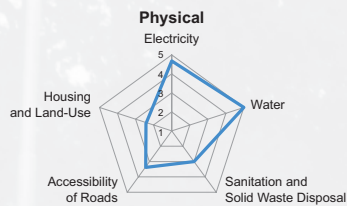


## Kecamatan 23

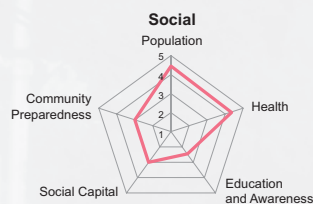
# Ujung Berung



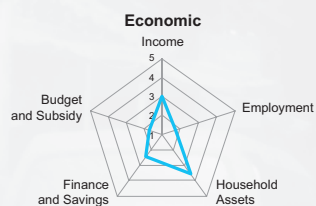
Sub-district 23, Ujung Berung is consisted of 5 wards and is located at the north-east of Bandung City with an area size of 6,40 km<sup>2</sup> and a population of around 61,579 in 2008. The population density is 9,621.72/km<sup>2</sup>, which is not dense compared to other sub-districts. This area is lying on the foot of a mountain (Manglayang), the same as for the sub-district no. 21 (Cibiru). This area is for residential purpose only. The overall resilience indicates in the diagram is below the average, especially in the economic and natural dimension.



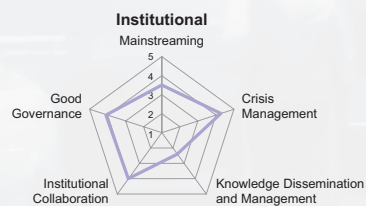
Up to 100% of the households have access to electricity and potable water supply. Up to 75% of the population has access to sanitation, but the solid waste is not treated at all before dumping and up to 75% of the solid waste is recycled; both in formal and informal ways. Only up to 10% of the area's land is used as transportation network and 80% of the area is accessible by paved road. Less than 40% of roads remained accessible during normal flooding in affected areas, but only up to 45% of the roads have roadside covered drain. Up to 29% of the houses are built with non-permanent structure, however less than 10% of the buildings are constructed following the building code. This area is not a hazardous area, whereas none of the population are living in the proximity to polluted industries or dumping grounds.



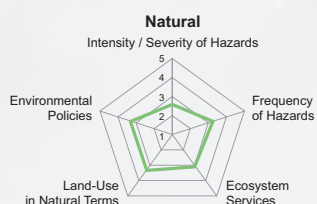
The population growth is less than 0.9% and less than 25% of the population is under age 14 or over 64 years old. There are almost no population suffer from neither water-nor vector borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and sub-district authority organizes once in every two years a disaster drills. Only up to 30% of the population is participated in community activities; however they might face some difficulties in the social ethnic integration. The people are prepared for a disaster (logistics, materials, and management) and there is some support from the NGOs/CSOs after a disaster.



Less than 11% of the population lives below the poverty line, but the income is only came from one source. Unemployment in the formal sector is more than 25%, which is the same percentage for the youth unemployment rate as well. Almost all the population have television and telecommunication device, however less than 50% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. Only up to 20% of the people are practicing saving and only up to 10% of the households are under any sort of insurance scheme. There is some support or access of credit facility during disaster for urban poor or low-income groups. In addition, there is annual budget targeting disaster risk management available less than 1%. But there are no subsidies/incentives available for residents to receive an alternative livelihood and house renovation incentives after a disaster.



The institutional issues; such as mainstreaming DRR and CCA, effectiveness of sub-district's crisis management framework, institutional collaboration with other organizations and stakeholders, and good governance are running properly. Except when it comes to knowledge dissemination and management; a disaster training programs for emergency workers is not available yet.

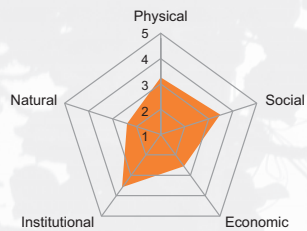


Since this area is lying on the mountain's foot, it is prone to rainfall-induced landslides, which occurs more than once a year. The ecosystem service, such as the average of urban water quality is poor and up to 90% of the land is built up. It caused a huge amount loss (40%) of green spaces in this area.

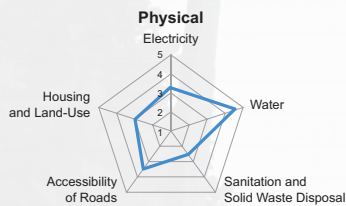


## Kecamatan 24

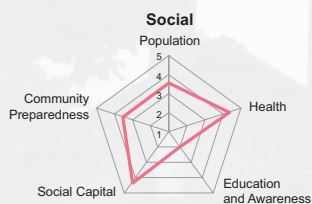
# Rancasari



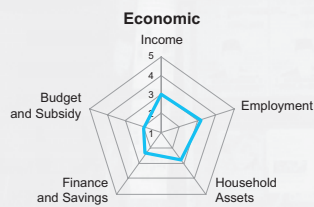
Sub-district 24, Rancasari is consisted from 4 wards and located at the south-east of Bandung City with an area size of 7.33 km<sup>2</sup> and a population of around 68,864 in 2008. The population density is 9,394.82/km<sup>2</sup>, which is not dense compared to other sub-districts. There are two rivers flowing through this area (Cidurian and Cipamokolan). This area was previously agricultural land and since more than 2 decades ago changed its functions to residential area with health and shopping facilities. The overall resilience indicates in the diagram is below the average, mainly in the economic and natural dimension.



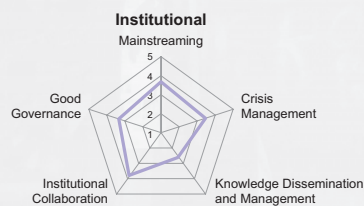
Up to 100% of the households have access to electricity and potable water supply. Up to 75% of the population has access to sanitation, but up to 25% of the solid waste is treated before dumping and up to 100% of the solid waste is recycled; both in formal and informal ways. More than 20% of the area's land is used as transportation network, with up to 80% of the area is accessible by paved road. However, less than 40% of roads remained accessible during normal flooding in affected areas, and up to 60% of the roads have roadside covered drain. More than 30% of the houses are built with non-permanent structure, however less than 10% of the buildings are constructed following the building code. This area is not a hazardous area, whereas none of the population are living in the proximity to polluted industries or dumping grounds.



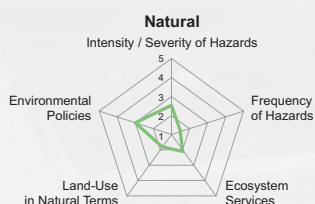
The population growth is up to 5.9% with up to 32% of the population is under age 14 or over 64 years old. There are almost no population suffer from neither water-nor vector borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and sub-district authority has not yet organizes disaster drills until now. Almost half of the population is participated in community activities and does not face difficulties in the social ethnic integration. The people are prepared for a disaster (logistics, materials, and management) and there is some support from the NGOs/CSOs after a disaster.



Up to 30% of the population lives below the poverty line, with one source of income only. Unemployment in the formal sector is up to 18%, which less in percentage compared to the youth unemployment rate (up to 24%). Almost all the population have television and telecommunication device, however less than 50% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. Although more than 50% of the people are practicing saving, only up to 10% of the households are under any sort of insurance scheme. Although there is no credit facility in the sub-district's financial institutions to prevent or face disaster, some support or access of credit facility during disaster for urban poor or low-income groups is available. But there is no available annual budget targeting disaster risk management. However, there are some subsidies/incentives available for residents to receive an alternative livelihood and health care during a disaster.



The institutional issues; such as mainstreaming DRR and CCA, effectiveness of sub-district's crisis management framework, institutional collaboration with other organizations and stakeholders, and good governance are running properly. Except when it comes to knowledge dissemination and management; a disaster training programs for emergency workers is not available yet. The same applies for disaster drills at the sub-district's level.

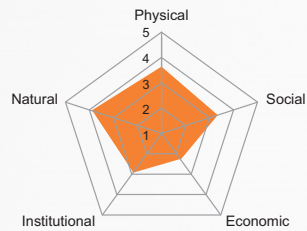


The frequency of natural hazards, such as floods (inundated and riverine floods) is occurring more than once year, as the intensities become severe. All the ecosystem services, such as the average of qualities of urban biodiversity, soil, air, water and groundwater are poor. In addition, more than 50% of the settlements are located on flood prone areas. It is reflected in the minimum usage of sub-district level hazard maps in development activities.

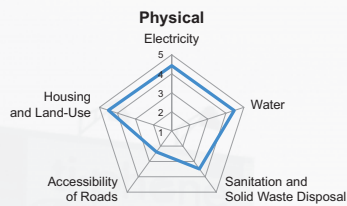


## Kecamatan 25

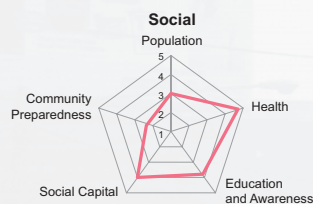
# Buahbatu



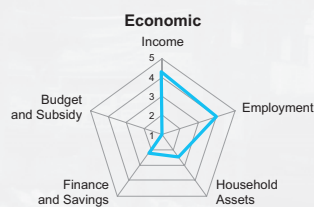
Sub-district 25, Buahbatu is consisted of 4 wards and located at the southern part of Bandung City with an area size of 7.93 km<sup>2</sup> and a population of around 95,256 in 2008. The population density is 12,012.11/km<sup>2</sup>, which is quite dense compared to other sub-districts. This area is fully settlements area for middle and low income families. The overall resilience indicates in the diagram is below the average, particularly in the economic, institutional and natural dimension.



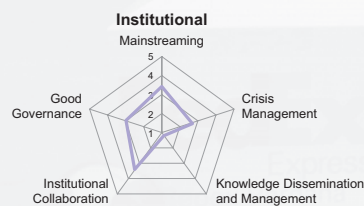
Up to 100% of the households have access to electricity and potable water supply. Up to 75% of the population has access to sanitation, but up to 25% of the solid waste is treated before dumping recycled; both in formal and informal ways. Up to 15% of the area's land is used as transportation network and less than 50% of the area is accessible by paved road as well as remained accessible during normal flooding in affected areas. But only up to 30% of the roads have roadside covered drain. Less than 10% of the houses are built with non-permanent structure with more than 50% of the buildings are constructed following the building code. This area is not a hazardous area, whereas none of the population are living in the proximity to polluted industries or dumping grounds.



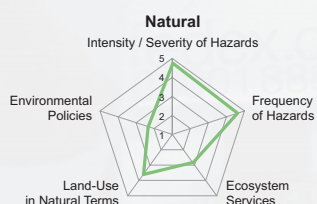
The population growth is up to 5.9%, with less than 25% of its population is under age 14 or over 64 years old. There are almost no population suffers from neither water-borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and sub-district authority organizes once a year a disaster drill. Almost half of the population is participated in community activities; however they might face some difficulties in the social ethnic integration. The people are prepared for a disaster (logistics, materials, and management).



Less than 11% of the population lives below the poverty line, with the income coming from 2 sources. Unemployment in the formal sector is up to 18%, which is the same percentage for the youth unemployment rate as well. Almost all the population have television and telecommunication device, however less than 50% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. Although up to 30% of the people are practicing saving, only up to 24% of the households are under any sort of insurance scheme. There is no support or access of credit facility during disaster for urban poor or low-income groups. And there is no annual budget targeting disaster risk management available, nor availability of subsidies/incentives for residents to receive an alternative livelihood and health care during a disaster.



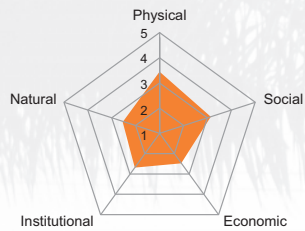
The institutional issues; such as mainstreaming DRR and CCA, effectiveness of sub-district's crisis management framework, institutional collaboration with other organizations and stakeholders, and good governance are running properly. Except when it comes to knowledge dissemination, there is no capacity for carrying the disaster education programs; because there is no feedback on the satisfaction level of disaster awareness programs from the community. In addition, there are no evacuation centers available, since this area has not been yet experienced disasters.



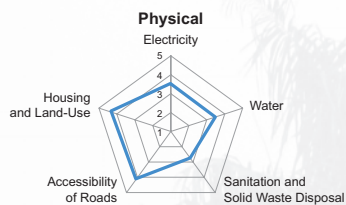
In term of natural dimension, the intensity/severity and frequency of natural hazards have not significantly affected this area. Only in the environmental policies, especially the minimum usage of sub-district level hazard maps in sub-district development activities.

## Kecamatan 26

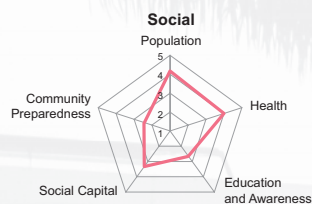
# Bandung Kidul



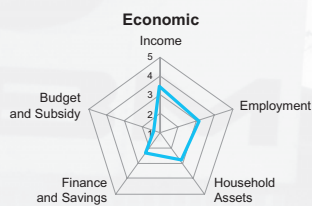
Sub-district 26, Bandung Kidul is consisted of 4 wards and located at the southern part of Bandung City with an area size of 6.06 km<sup>2</sup> and a population of around 51,968 in 2008. The population density is 8,575.58/km<sup>2</sup>, which is not dense compared to other sub-districts. This area was previously agricultural land and swamps back 20 years ago and turn recently into settlement areas for middle and low income families. One main river (Cikapundung) and two others (Cikapundung Kolot and Citepus) are flowing through this area. The overall resilience indicates in the diagram is below the average, mainly in the economic, institutional and natural dimension.



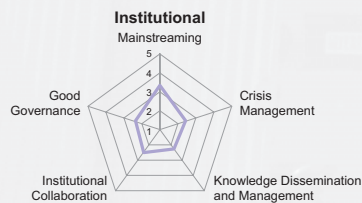
Up to 100% of the households have access to electricity and up to 80% have access to potable water supply. Up to 60% of the population has access to sanitation, but up to 25% of the solid waste is treated before dumping and up to 10% of the solid waste is recycled; both in formal and informal ways. More than 20% of the area's land is used as transportation network. Only 70% of the area is accessible by paved road. A slightly more than half of roads remained are accessible during normal flooding in affected areas, but only up to 45% of the roads have roadside covered drain. Up to 29% of the houses are built with non-permanent structure and more than 50% of houses are constructed following the building code. This area is not a hazardous area, whereas none of the population are living in the proximity to polluted industries or dumping grounds.



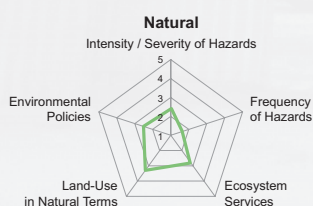
The population growth is ranged between 2-3.9%, with less than 25% of its population is under age 14 or over 64 years old. Up to 11% of the population suffer from water-and vector borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and sub-district authority organizes once in two years disaster drill. Almost half of the population is participated in community activities and could blend well with other ethnic groups. The people are not yet prepared for a disaster (logistics, materials, and management), but there is some support from the NGOs/CSOs in case of a disaster.



Up to 20% of the population lives below the poverty line, with the 2 sources of income. Unemployment in the formal sector is up to 24%, which is the same percentage for the youth unemployment rate as well. Almost all the population have television and telecommunication device, only up to 70% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. More than 50% of the people are practicing saving and up to 24% of the households are under any sort of insurance scheme. There is some support or access of credit facility during disaster for urban poor or low-income groups. And there is no annual budget targeting disaster risk management and no subsidies/incentives for residents to receive an alternative. However, there are some incentives for health care during a disaster.



Although this area has a good mainstreaming of DRR and CCA and community participation in their development plans and preparation process, as well as the promptness of the sub-district's body in disseminating emergency information during a disaster; the emergency team during disaster is poor. In addition, the dissemination of knowledge and management issues is poor as well (disaster education programs and sub-district's capacity). The same applies for the institutional collaboration with other organizations and stakeholders; the sub-district is heavily dependent on external institutions/support during a disaster.

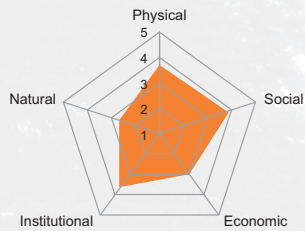


In term of natural hazard, this area suffers from rainfall-induced landslides and storms, which are occurring more than once per year. In addition, the impacts of riverine floods and landslides are severe, making this sub-district vulnerable to disasters. This leads to poor average of urban water quality, adding up that the implementation of efficient waste management system (reduce, reuse, recycle) is poor as well.

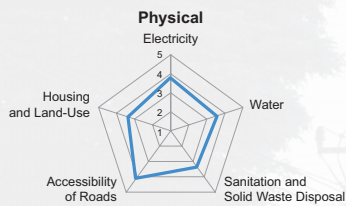


## Kecamatan 27

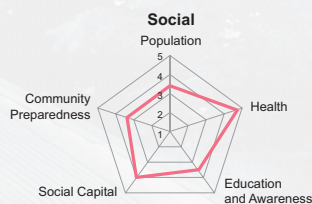
# Panyileukan



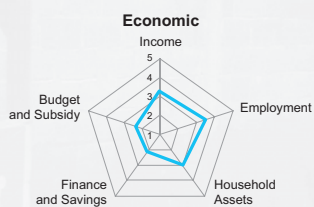
Sub-district 27, Panyileukan is consisted of 4 wards and located at the eastern of Bandung City with an area size of 5.10 km<sup>2</sup> and a population of around 34,621 in 2008. The population density is 6,788.43/km<sup>2</sup>, which is not dense compared to other sub-districts. Four rivers are flowing through this area. In addition, this area is the expansion of the settlement area, of which the city government intended to distribute the residential areas equally through Bandung City. Previously, this area was a large agricultural land, where some parts are still visible and cultivated. The overall resilience indicates in the diagram is slightly above the average, especially marked by the high score in the physical, social, and institutional dimension.



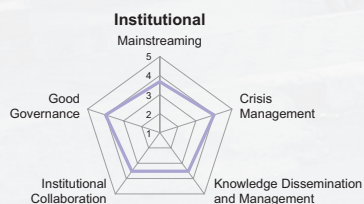
Up to 100% of the households have access to electricity and up to 80% have access to potable water supply. Up to 75% of the population has access to sanitation, but up to 25% of the solid waste is treated before dumping and up to 75% of the solid waste is recycled; both in formal and informal ways. More than 20% of the area's land is used as transportation network and up to 80% of the area is accessible by paved road. A slightly more than half of roads remained accessible during normal flooding in affected areas and more than 60% of the roads have roadside covered drain. Up to 19% of the houses are built with non-permanent structure, however less than 10% of the buildings are constructed following the building code. This area is not a hazardous area, whereas none of the population are living in the proximity to polluted industries or dumping grounds.



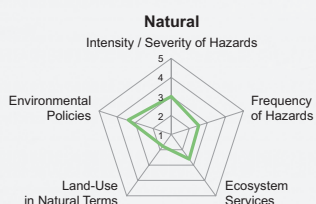
The population growth is ranged between 2-3.9%, with less than 45% of its population is under age 14 or over 64 years old. There are almost no population suffer from neither water-borne nor vector borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and sub-district authority organizes once a year a disaster drill. Almost half of the population is participated in community activities and they integrated well with different ethnic groups. The people are prepared for a disaster (logistics, materials, and management) and there is some support from the NGOs/CSOs after a disaster.



Less than 11% of the population lives below the poverty line, with the income coming from 4 sources. Unemployment in the formal sector is up to 18%, more than the percentage of youth unemployment rate (up to 12%). Almost all the population have television and telecommunication device, however less than 50% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. Only up to 20% of the people are practicing saving and up to 32% of the households are under any sort of insurance scheme. There is no support or access of credit facility during disaster for urban poor or low-income groups as well as an annual budget targeting disaster risk management and subsidies/incentives for residents to receive an alternative livelihood, but there are some subsidies for health care during a disaster.



Although this area has a good mainstreaming of DRR and CCA and community participation in their development plans and preparation process, as well as the promptness of the sub-district's body in disseminating emergency information during a disaster; but there is no network yet established for a collaboration with neighboring sub-district, in case a disaster occurs, which make them heavily dependent on external institutions/support during a disaster.

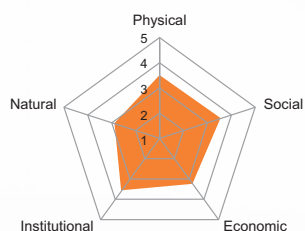


Since many rivers are flowing through this area, floods (inundation and riverine) are occurring more than once per year, with severe impacts. This reflects in the poor average of urban water and groundwater quality. Additionally, the land-use in natural term has shifted, such as large loss of green spaces due to intensive use of built area.

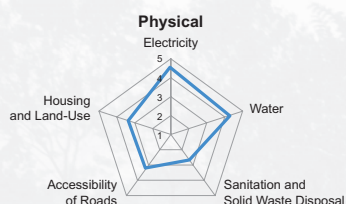


## Kecamatan 28

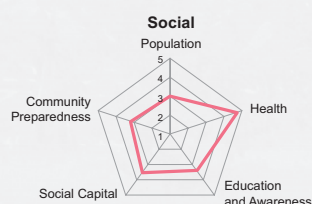
# Cinambo



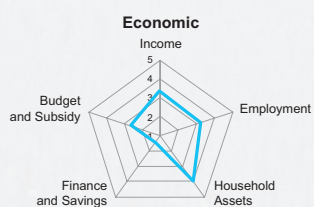
Sub-district 28, Cinambo is consisted of 4 wards and located at the eastern part of Bandung City with an area size of 3.68 km<sup>2</sup> and a population of around 23,695 in 2008. The population density is 6,438.86/km<sup>2</sup>, which is not dense compared to other sub-districts. This area is characterized by the existence of industries as well as storehouses and some containers depot. The overall resilience indicates in the diagram is just on the average, of which all the resilience of the dimension could be equally enhanced.



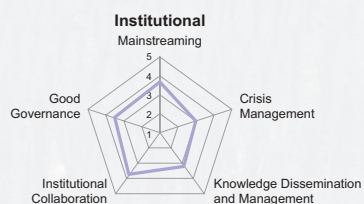
Up to 100% of the households have access to electricity and potable water supply. Up to 60% of the population has access to sanitation, but none of the solid waste is treated before dumping and only up to 50% of the solid waste is recycled; both in formal and informal ways. More than 20% of the area's land is used as transportation network. Only 10% of the area is accessible by paved road. More than half of roads remained accessible during normal flooding in affected areas, but only up to 60% of the roads have roadside covered drain. Up to 19% of the houses are built with non-permanent structure, however less than 10% of the buildings are constructed following the building code. Only up to 60% are built above the plinth level. It might due to industries, up to 25% of the population live on polluted grounds.



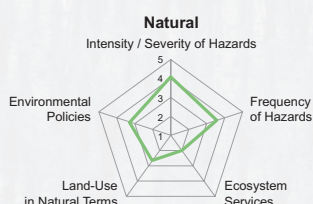
The population growth is up to 1.9%, with up to 39% of its population is under age 14 or over 64 years old. There are still people up to 49% are living in informal settlement. However, there are almost no population suffer from neither water-nor vector borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and sub-district authority organizes once a year a disaster drill. Almost half of the population is participated in community activities and they integrate very well with other ethnic groups. The people are prepared for a disaster (logistics, materials, and management) and there is some support from the NGOs/ CSOs after a disaster.



Up to 20% of the population lives below the poverty line, with 2 sources of income. Unemployment in the formal sector is up to 18%, which is the same percentage for the youth unemployment rate as well. Almost all the population has television and telecommunication device, however up to 60% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. Although more than 20% of the people are practicing saving, only up to 16% of the households are under any sort of insurance scheme. The support or access of credit facility during disaster for urban poor or low-income groups is poor. But there are some available annual budget targeting disaster risk management up to 1.2%. There are no subsidies/incentives available for residents to receive an alternative livelihood but for subsidies health care during a disaster.



Although this area has a good mainstreaming of DRR and CCA and community participation in their development plans and preparation process, as well as the promptness of the sub-district's body in disseminating emergency information during a disaster; there is limited number of regular disaster training programs for emergency workers.

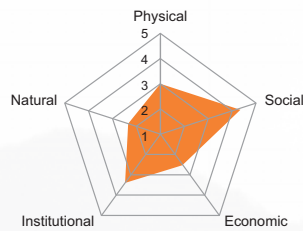


Natural issue that is pointed out for this sub-district is the ecosystem service, of which the average of urban water and urban air quality and groundwater quality are very poor. The loss of the green space is almost 40% from the total land-use. In addition, the implementation of efficient waste management system (reduce, reuse, recycle) is poor.

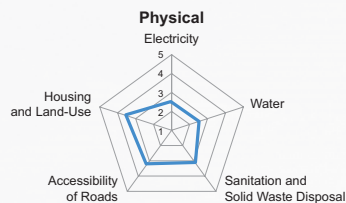


## Kecamatan 29

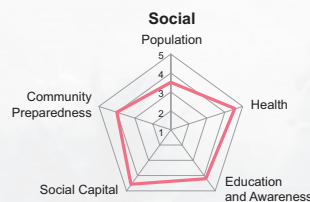
# Mandalajati



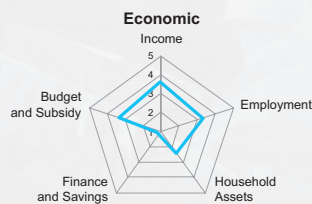
Sub-district 29, Mandalajati is consisted of 4 wards and located at the north-east of Bandung City with an area size of 6.67 km<sup>2</sup> and a population of around 57,265 in 2008. The population density is 8,585.46/km<sup>2</sup>, which is not dense compared to other sub-districts. This area is located on the highland and has 3 rivers flowing through it (Cisanggarung, Cikilay, and Cipamolakan). This area is located on the steep slope and mainly for settlement only. Some small amount of land is deforested, thus is prone to floods and rainfall-induced landslides. The overall resilience indicates in the diagram is below the average, mainly in the physical, economic and natural dimension.



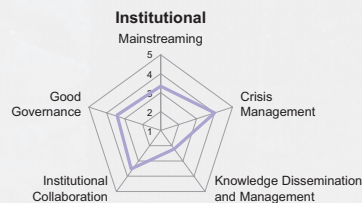
Up to 100% of the households have access to electricity and up to 80% have access to potable water supply. Up to 75% of the population has access to sanitation, but none of the solid waste is treated before dumping and only up to 10% of the solid waste is recycled; both in formal and informal ways. Up to 20% of the area's land is used as transportation network and less than 25% of the area is accessible by paved road. A slightly more than half of roads remained accessible during normal flooding in affected areas, but only less than 15% of the roads have roadside covered drain. Less than 10% of the houses are built with non-permanent, and up to 50% of the buildings are constructed following the building code. Almost half of the population is living on hazardous ground (waste dumping ground).



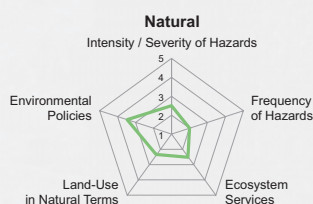
The population growth is ranged between 1-1.9%, with up to 32% of its population is under age 14 or over 64 years old. There are up to 11% of the population suffer from water- and vector borne diseases every year, however, up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and sub-district authority organizes once a year a disaster drill. Almost half of the population is participated in community activities and blend very well with other ethnic groups. The people are prepared for a disaster (logistics, materials, and management) and there is some support from the NGOs/CSOs after a disaster.



Up to 20% of the population lives below the poverty line, but the income is only come from one source. Unemployment in the formal sector is up to 18%, which is less compared to the youth unemployment (more than 25%). Almost all the population have television and telecommunication device, however less than 50% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. Only 20% of the people are practicing saving and only up to 10% of the households are under any sort of insurance scheme. There is no support or access of credit facility during disaster for urban poor or low-income groups. But there is annual budget targeting disaster risk management available up to 3%. There are no subsidies/incentives available for residents to receive an alternative livelihood; however, there are some incentives for health care during a disaster.



Although this area has a good mainstreaming of DRR and CCA and community participation in their development plans and preparation process, as well as the promptness of the sub-district's body in disseminating emergency information during a disaster; there capacity for dissemination of disaster awareness programs (books, leaflets, manpower, and campaigns for disaster education) is poor. In addition, there is no regular disaster training programs for emergency workers. In addition, in term of institutional collaboration with other organizations and stakeholders, this sub-district is heavily dependent on external institutions/supports during a disaster.

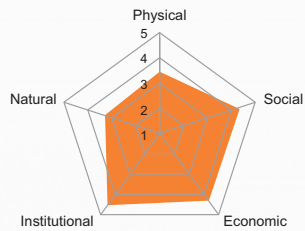


This area suffers from severe rainfall-induced landslides and storms, where they occur at least once a year. During the dry season, water scarcity is occurring. In term of ecosystem service, the average of urban water and groundwater quality of this sub-district is poor and experiences almost 40% land loss of the green spaces.

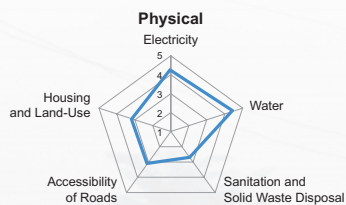


## Kecamatan 30

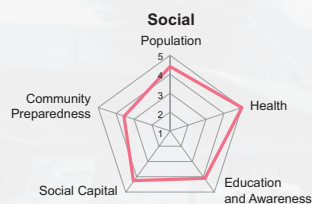
# Gedebage



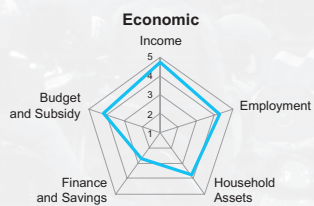
Sub-district 30, Gedebage is the youngest sub-district among all, consisted of 4 wards and located at south-eastern end of Bandung City with an area size of 9.58 km<sup>2</sup> and a population of around 31,230 in 2008. The population density is 3,259.92/km<sup>2</sup>, which is not dense compared to other sub-districts. This area entails 70% of land for agricultural activities and the rest is divided into the settlement and containers depot. A main by-pass road heading west-east is through this area, making more accessible for shipping goods to and outside Bandung City. The overall resilience indicates in the diagram is above the average, especially in the social, economic, and institutional dimension.



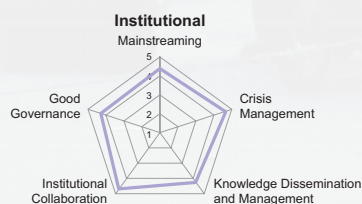
Up to 100% of the households have access to electricity and potable water supply. Up to 75% of the population has access to sanitation, but none of the solid waste is treated before dumping and recycled; both in formal and informal ways. More than 20% of the area's land is used as transportation network. But less than 50% of the area is accessible by paved road and less than 40% of roads remained accessible during normal flooding in affected areas, but less than 15% of the roads have roadside covered drain. More than 30% of the houses are built with non-permanent structure and more than 50% of the buildings are constructed following the building code. And more than half of the sub-district population lives on the hazardous area (dumping ground).



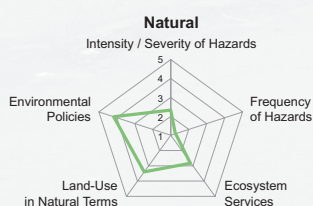
The population growth is ranged between 1-1.9%, with less than 25% of its population is under age 14 or over 64 years old. There are almost no population suffer from neither water-borne nor vector borne diseases every year and up to 90% of the population has access to primary health care facility. In case of emergency and before disaster, the health facilities are well provided and able to serve the community. Less than 50% of the people are illiterate and sub-district authority organizes once every two years a disasters drills. Almost half of the population is participated in community activities and they could integrate well with other ethnic groups. The people are prepared for a disaster (logistics, materials, and management) there is some support from the NGOs/CSOs after a disaster.



Less than 11% of the population lives below the poverty line with 3 income sources. Unemployment in the formal sector is up to 12%, which is the same percentage for the youth unemployment as well. Almost all the population has television and telecommunication device, however only up to 70% of the households has furniture to secure the key items (money, important documents, etc.) for during disaster. Although up to 30% of the people are practicing saving, only up to 10% of the households are under any sort of insurance scheme. There is some support or access of credit facility during disaster for urban poor or low-income groups. And there are some annual budget targeting disaster risk management available up to 1.2%. There are subsidies/incentives available for residents to receive an alternative livelihood and health care during a disaster.



This area has a good mainstreaming of DRR and CCA and community participation in their development plans and preparation process, as well as the promptness of the sub-district's body in disseminating emergency information during a disaster. In addition, the good governance and the institutional collaboration with other organizations and stakeholders are in good shape.



In natural term, the frequency of the floods, storms and water scarcity (during dry season) occurring more than once per year with sometimes severe impacts. It leads to poor average of groundwater quality of this sub-district.



## Next Steps and Way Forward

The outcome of this study shall support the Government of Bandung City to address the sectors where improvement is needed most to plan for future city development. The aim of this study is to enhance the resilience by targeting the sectors, among physical, social, economic, institutional, and natural; which are least resilient.

As the results, CDRI serves as a planning tool for the Government of Bandung City and also for the future Bandung Metropolitan development plan. Bandung City Development and Planning Agency as the lead Agency in Bandung City will also take the results into account impacts from climate-related disasters into planning and policy decision-making processes. This initiative study can also serve as the take off platform of Government of Bandung City's main development priority for Bandung as a resilient city.

Currently, a study based on this Bandung Kecamatan CDRI Profile, of effective communication strategies for enhancing climate-related disaster resilience in Bandung is carried out. The objective of this study is to develop an appropriate disaster risk communication framework for Bandung communities. By engaging Community-Based Organizations (CBOs) such as Women Welfare Associations, Youth Unions, and Faith-Based Groups, it is expected the community capacities to cope with climate-related disasters through the CBOs resilience activities, will be enhanced.

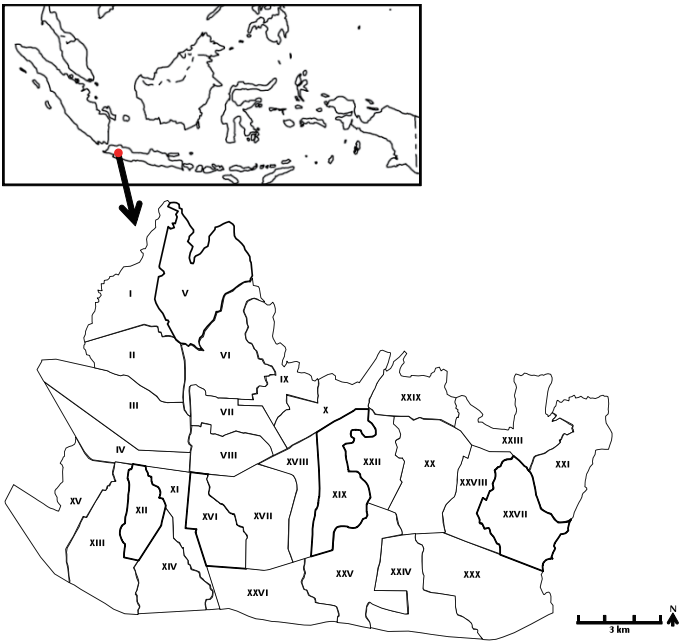


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- Bandung City Development and Planning Agency (2009) Bandung City Mid-Term Development Plan 2009-2013, Bandung.
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# About the Initiative

The Climate and Disaster Resilience Initiative (CDRI) is an umbrella of Kyoto University, funded by the Global Center of Excellence (GCOE) Program “Human Security Engineering for Asian Megacities” , which has research, education, training, and implementation components. The current program was developed in cooperation with the Government of Bandung City, City Development and Planning Agency (Bappeda Kota Bandung) and Institut Teknologi Bandung. The Sub-districts data were collected through questionnaire survey. The cooperation and inputs from all the sub-districts listed here are highly appreciated.



No.	Sub-district	No. wards	Area (km <sup>2</sup> )	Total Population	Population Density
1.	Sukasari	4	6,27	77.218	12.315,47
2.	Sukajadi	5	4,30	101.065	23.503,49
3.	Cicendo	6	6,86	103.532	15.092,13
4.	Andir	6	3,71	106.201	28.625,61
5.	Cidadap	3	6,11	53.934	8.827,17
6.	Coblong	6	7,35	126.450	17.204,08
7.	Bandung Wetan	3	3,39	31.741	9.363,13
8.	Sumur Bandung	4	3,40	40.035	11.775,00
9.	Cibeunying Kaler	4	4,50	69.011	15.335,78
10.	Cibeunying Kidul	6	5,25	111.094	21.160,76
11.	Astanaanyar	6	2,89	70.554	24.409,69
12.	Bojongloa Kaler	5	3,03	120.894	39.899,01
13.	Babakan Ciparay	6	7,45	142.309	19.101,88
14.	Bojongloa Kidul	6	6,26	81.045	12.946,49
15.	Bandung Kulon	8	6,46	125.350	19.404,02
16.	Regol	7	4,30	86.500	20.116,28
17.	Lengkong	7	5,90	71.983	12.200,51
18.	Batununggal	8	5,03	123.392	24.531,21
19.	Kiacondong	6	6,12	129.623	21.180,23
20.	Arcamanik	4	5,87	57.869	9.858,43
21.	Cibiru	4	6,32	60.001	9.394,82
22.	Antapani	4	3,79	59.929	15.812,40
23.	Ujung Berung	5	6,40	61.579	9.621,72
24.	Rancasari	4	7,33	68.864	9.394,82
25.	Buahbatu	4	7,93	95.256	12.012,11
26.	Bandung Kidul	4	6,06	51.968	8.575,58
27.	Panyileukan	4	5,10	34.621	6.788,43
28.	Cinambo	4	3,68	23.695	6.438,86
29.	Mandalajati	4	6,67	57.265	8.585,46
30.	Gedebage	4	9,58	31.230	3.259,92

## Team Members

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## Acknowledgements

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# About the Organization

## Bandung City Government

In 1906, Bandung was given the status of *gemeente* (municipality) and then later as *stadsgemeente* (city municipality) in 1926. The city area in 1906 was 19.22 sq. kilometers and by 1987 it was 167.2965 km<sup>2</sup> The city administration is divided into 30 sub-districts (*Kecamatan*) and 155 wards (*Kelurahan*). A mayor (*Walikota*) leads the city administration. Since 2008, the city residents directly voted for a mayor, while previously mayors were nominated and selected by the city council members or known as the Regional People's Representative Council (DPRD). After the Indonesian Independence in 1945, Bandung was determined as the capital of West Java province and the country's third largest city. After Indonesian independence, from 1945 onwards, the city experienced a rapid development and urbanization that has transformed Bandung from a town into a dense 14,275/km<sup>2</sup> city area, a living space for over 2 million people. The government of Bandung City has been taking efforts to establish a “safe” place to live for its citizen.

## Institut Teknologi Bandung

In 1920, *Technische Hogeschool* (TH) was established in Bandung, which for a short time, in the middle forties, became *Kogyo Daigaku*. Later time, on 2nd March 1959, the present Institut Teknologi Bandung or Institute of Technology Bandung was founded by the Indonesian government as an institution of higher learning of science, technology, and fine arts, with a mission of education, research, and service to the community. The present ITB main campus is as well the site of earlier engineering schools in Indonesia. Carrying its mission, ITB shall guide development and changes and be responsive to global development and local challenges through innovative and quality education, research and community services. With the support of Research Center for Disaster Mitigation, ITB contributes in creating safer Indonesian communities.

## Kyoto University

International Environment and Disaster Management Laboratory of Kyoto University Graduate School of Global Environmental Studies targets to reduce the gap between knowledge and practice through pro-active field level, community based project implementation in the field of environment and disaster risk management. Key research areas: climate change adaptation, urban risk reduction, environment and disaster education. GCOE program of Kyoto University targets education and research excellence of Human Security Engineering in Asian Megacities, with focus to city governance, infrastructure management, health risk management and disaster risk management.