

Informality and Resilience: Denpasar City

Purpose Statement

This city specific problem statement presents an overview of the current situation of informal settlements and analyses their vulnerability through a climate lens. It intends to generate discussion that will enable the formulations of solutions aimed at more inclusive decision making.

Rationale

Informal settlements are situated in highly vulnerable locations and the conditions of its residents are worsened by their inability to adequately meet the basic needs due to their socioeconomic status. Their informal status makes it difficult for them to gain access to government services. This reality does not only aggravate their situation to cope with daily survival but also deprives them of the opportunity to enhance their capacity to respond to the potential impacts of climate change in their areas. They are thus the

Box 1: Within the context of this study the following are the definitions that have been adopted

Informal Settlements are residential areas where 1) inhabitants lack security of tenure 2) the neighbourhoods usually lack, or are cut off from, basic services and city infrastructure and 3) the housing may not comply with current planning and building regulations, and is often situated in geographically and environmentally hazardous areas¹.

Slums are heavily populated urban informal settlement characterized by poverty and large agglomerations of dilapidated housing often located in the most hazardous urban land².

The term '**Climate Resilience**' describes the ability of a system to bounce back or recover from a climate imposed hazard³. The resilience of an informal settlement increases and the risk of disruption decreases if it has benefited from investment in robust infrastructure that is adapted to local conditions and built to anticipate future climate threats⁴.

most vulnerable section requiring the most support. Building resilience within Informal Settlements will raise the city bottom line which will in turn lead to a more comprehensive city development.

Approach

The study adopted a mix of qualitative and quantitative techniques to capture data. Secondary review of literature, Key Personnel interviews, Participatory Learning Appraisals in the settlements and collection of primary data from the municipality was conducted.

Informal Settlements in Indonesia and their Context within the Policy Framework

As of 2014 an estimated 34.3 million or 21% of the urban population in Indonesia lives in slums (UN Data, 2014; Indonesia's Ministry of Public Works, 2014) or spontaneous informal settlements called Kampung. Kampung generally comprise substandard infrastructure, small land areas and low quality building materials⁵. Since the fall of the New Order regime, a new provision of housing was introduced as per the Amendment of 1945 Constitution, Article 28H (August 2000) stating that every Indonesian citizen is entitled to housing in a decent and healthy community. The new Housing and Settlement Areas Law was enacted in January 2011 and replaced the Housing and Settlement Areas Law of 1992. It provided a legal framework to advance the housing provision for low-income residents⁶ by stipulating housing subsidies and assistance for low-income residents.

Indonesia has been implementing three self-help housing policies including the Kampung Improvement Programme (KIP) launched in 1969, the Community-based Housing Development program (P2BPK), and the Self-help Housing Assistance (BSPS)⁷.

The KIP was the world's first urban slums upgrading project and funded by the World Bank until 1982 to ensure the retention and improvement of existing housing stock and to provide serviced sites for poor families for constructing new housing for themselves

1. Derived from UN-Habitat (2003), The Challenge of Slums; UN-Habitat (2013), The State of the World Cities Report 2012/13. Refer to Issue Paper No. 9 on Land for 'security of tenure' definition.
2. World Bank (2008), Approaches to urban slums; UN-Habitat (2015), Streets as tools for urban transformation in slums; Cities Alliance (2010), Building Cities; Cities Alliance, World Bank and UN-Habitat (2002), Cities without Slums
3. Holling, Crawford Stanley (1973), "Resilience and stability of ecological systems", Annual Review of Ecology and Systematics Vol 4, pages 1-23
4. Seeliger, Leanne and Turok, Ivan (2013), 'Averting a downward spiral: building resilience in informal urban settlements through adaptive governance'. Environment & Urbanization, International Institute for Environment and Development (IIED). Vol 26(1): 184-199. DOI: 10.1177/0956247813516240
5. Tunas, Devisari and Andrea Peresthu. 2010. 'The Self-help Housing in Indonesia: The Only Option for the Poor?' Habitat International, 34: 315-322
6. Mungkasa, Oswar. 2013. 'CatatanKritis tentang Hunian Berimbang'. HUD Magazine 4: 18-21.
7. <http://indonesiurbanstudies.blogspot.in/2015/09/the-transformation-of-indonesian.html>
8. Silver, Christopher. 2008. 'Planning the Megacity: Jakarta in the Twentieth Century'. New York: Routledge

using self-help methods⁸. In the 1980s, the KIP was reconfigured into the Community Infrastructure Program as part of the Integrated Urban Infrastructure Development Programme (IUIDP). The community-based housing development or Pembangunan Perumahan Bertumpu pada Komunitas (P2BPK) is a housing provision program that promotes informal and community-based housing delivery. This program encourages active participation of communities in mobilizing resources including finance and labor to lower housing costs. The Ministry of Public Housing launched the Self-help Housing Assistance, known as BSPS for initials in Bahasa Indonesia, in 2006⁹. The BSPS is aimed to assist low-income households in urban and rural areas in Indonesia. BSPS includes the development of new houses, the improvement of house quality, and the development of public infrastructure and utilities.

Following a National Housing Workshop in 1974, the Government of Indonesia established three key institutions to address housing problems including the National Housing Authority (Badan Kebijakan Perumahan Nasional) which is responsible for formulating the national housing policy, the PERUMNAS Corporation which is responsible for providing low-cost housing in Indonesian urban areas; and the State Savings Bank¹⁰.

In early 2010, the Indonesian National Government established the 'National Team For The Acceleration of Poverty Reduction (TNP2K)' through Presidential Regulation no. 15/2010 in response to the increasing rate of poverty and increasing number of slum areas

across Indonesia especially in urbanized area. As a follow up to this Presidential order a Ministerial Decree was issued in the same year on the institutionalization of structure and the establishment of Local Poverty Reduction Coordination teams whose responsibility is to execute the tasks, activities at a city and regency level¹¹.

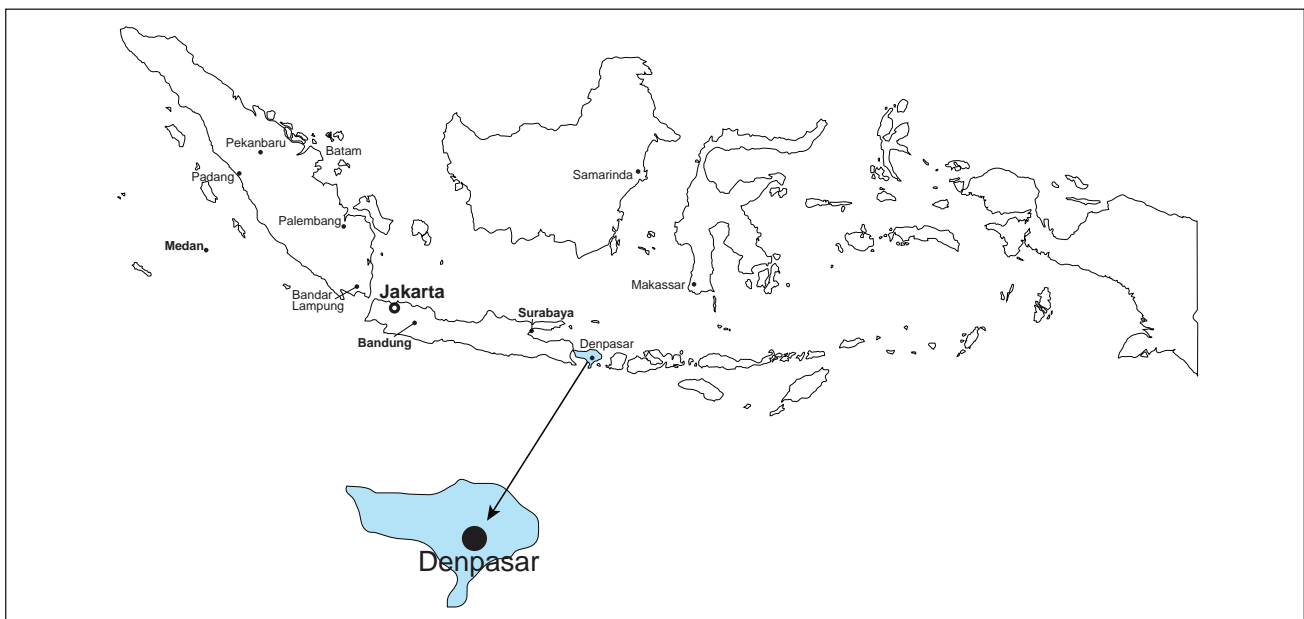
City Introduction: Denpasar

The city of Denpasar is the capital of the Bali Province, the island's largest urban centre and the capital of its major tourist area- the Badung Regency. It is the primary economic node that integrates government, commercial and tourism activities. Denpasar's urban core has a population of around 492,000 people and covers an area of 77.9 square kilometres. The city is divided into 4 districts- North, East, South and West Denpasar. According to Denpasar Mayor Decree Number: 188.45/509/HK/2012, there are thirty-five slums points in Denpasar spread in four Kecamatan/ sub-districts. North Denpasar, East Denpasar and West Denpasar sub-districts have 9 slums points each while South Denpasar sub-district has 8 slums points which is predicted to keep growing.

Situation Analysis

Two slums were surveyed in Denpasar, both situated on privately owned land which is leased out to the residents.

Banjar Pekambangan Renon Desa Dauh Purih Kec is located on the banks of the Badung river in Denpasar Barat or West Denpasar sub- district and



9. <http://indonesiaurbanstudies.blogspot.in/2015/09/the-transformation-of-indonesian.html>

10. UN Habitat, 2003. Slums of the world: the face of urban poverty in the new millennium? UN Habitat, Nairobi, Kenya.

11. Diagnosing the Indonesian economy: Toward Inclusive and Green Growth, 2013. Eds Hill, H., Khan M. E., Zhuang J. Published by ADB and Anathem Press.

comprises of 201 households. Settlers are primarily migrants from surrounding areas like Lombok, Bali, Java Island and East Java who moved to Denpasar in search of better economic opportunities and education facilities. Services like water supply, sewerage, solid waste management are generally sourced from private companies rather than the local government and are taken up as initiatives of the community themselves. In some cases, residents depend on already present infrastructure provided by the land owners themselves. Relocation of residents from houses to government subsidized flats has met with limited success due to traditional practices, religious beliefs and socio cultural aspects which support dwellings in houses and not flats.

Banjar Yang Batu Kangen Kelurahan Dangin Puri Klod Kec is located near a temporary waste disposal site in Denpasar Timur or East Denpasar sub- district. Like Banjar Pekambangan Renon Desa Dauh Purih Kec., this slum too exists on privately owned land, leased out to the occupants each of who pay approximately 2-3 million Rupiahs per year. Residents are migrants from Java and West Nusa Tenggara. As the slum is in close proximity to a temporary waste disposal site, the health of the residents is poor and is exacerbated by extreme rainfall events. The extent of municipal services like sanitation, storm water drainage, water supply and electricity depends on the proactiveness of the communities themselves and their engagement with the local government.

Despite living in houses made of poor construction material and having poor sanitary facilities, the residents feel that for a city like Denpasar, the current rent they pay is affordable and they can also access more important benefits like Education and Economic opportunities. The major limitation is their economic situation and the fact that government schemes like upgradation of houses cannot percolate within these localities due to the fact that the residents are tenants and not home owners. Services like sewerage



connections, piped water supply can be availed from the government, but residents choose to take matters into their own hands, procuring some of these services from private organizations as they feel it is more economically viable to do so. Wells are dug to access ground water, toilets are self constructed without any appropriate sewerage collection system, and houses are erected from materials that are easily available. Overall, the residents in both slums surveyed were satisfied with the level of services they could avail and their quality of life.

Institutional Support

The different programmes and policies that are currently applicable to informal settlements in Denpasar city are summarized below.

- City of Denpasar Poverty and Slum Alleviation Strategy 2015 - 2019: This will focus on provision of technical assistance and capacity building for the local government institution, the local community and local facilitators, experts and consultants in order to improve program planning, implementation, monitoring and evaluation, to enable the community to live a hygienic and healthy life and improve the overall capacity in alleviating and preventing slum settlements. The strategy will also focus on land regularization for the urban slum settlement area and Community Cash Transfer Program as a stimulant to improve community's self resilient, quality of settlement, and livelihood¹².
- Housing Quality Improvement program (P2KKP): This particular program includes providing 100% access to clean water, reduction slum to 0%, and 100% access to clean sanitation by 2019, improving housing in slum area by providing 2700 USD per household (the city has include a 48.461 USD on yearly basis) to make homes more healthy and affordable in term of access to water and sanitation.

With regards to the slums selected, there are significant obstacles in the outreach of these programs given that the ownership of the land is private and therefore the onus of the improvement to basic facilities in the slums lies on these private landowners and their level of engagement with city officials.













Looking at informal settlements through lens of climate change

Past Hazards

Settlement-dense Denpasar is prone to several types of natural hazards, including floods, fire, tsunami,

12. http://www.bappenas.go.id/files/bluebook_dan_greenbook/DRPLN%20-%20JM%202015-2019/drpln-jm-2015-2019-2nd-book.pdf

Figure 1: Current scenario of Denpasar Informal Settlements

CURRENT							
		Banjar Pekambangan Renon Desa Dauh Purih Kec. Denpasar Barat	Banjar Yang Batu Kangen Kelurahan Dangin Puri Klod Kec. Denpasar Timur				
 Social	Population	 1442	 82	 Physical	Housing	Semi-perman	
	Health	 Diarrhoea and Dengue commonly occur			Water Supply	Water for ho from wells/ to water is purcha wells are eit owner or the le land leased. In share a well. water from the Company (P	
	Education	 Most of the adult population has been educated up to middle school. Literacy rates are quite high ranging between 90% - 96%			Sanitation	Every house b emptied and	
	Crime	 Very low crime rates due to dominant role of traditional tribe leader	 Relatively safe with strict punishment meted out to transgressors by the community itself		Solid waste Management	Waste is collect cleaning of from where the transport disposal facilit The entire slum per mon	
	Addiction	 Restricted to alcoholism, however, addiction is negligible due to strong religious sentiments	 Palm wine consumed, but low instances of alcoholism		Storm Water Drainage	Though drain	
	Leadership	 Traditional tribe leader holds a dominant position within the community	 Traditional tribe leader called the Kelian holds a dominant position within the community and ensures that the law is upheld		Electricity	Residen	
	Voting rights	National identity documents and comprehensive voting rights for all	National identity document- Kartu Tanda Penduduk (KTP) is held by all		Connectivity	Good connecti the distance be public utility Roads are eith	
					Health	Puskesmas (s situ	
					Education	Access to ec	

SCENARIO








































<p>Banjar Renon Desa Dauh Purih Kec. Denpasar Barat</p>	<p>Banjar Yang Batu Kangen Kelurahan Dangin Puri Klod Kec. Denpasar Timur</p>			<p>Banjar Pekambangan Renon Desa Dauh Purih Kec. Denpasar Barat</p>	<p>Banjar Yang Batu Kangen Kelurahan Dangin Puri Klod Kec. Denpasar Timur</p>
 <p>Permanent structures taken on rent</p>	 <p>Land is leased at Rp 2,000,000/ year on which a semi-permanent structure is built. Houses can be rented in the area for a rental fee of Rp. 300,000/month</p>	 <p>Economic</p>	<p>Workforce</p>	 <p>Majority of the residents are employed in the informal sector as construction workers, motorcycle and taxi drivers, domestic help and scavengers</p>	
 <p>Household purposes is sourced from tube wells. However, drinking water is purchased at Rp 5000 per 15L. These wells are either constructed by the land owner or the lessee depending on the type of land leased. In some cases, several families share a well. There is an option of availing water from the city through the State Water Company (PDAM), but residents do not prefer this</p>	 <p>Water for household purposes is sourced from wells/ tube wells. However, drinking water is purchased at Rp. 5000 per 15L. These wells are either constructed by the land owner or the lessee depending on the type of land leased. There is an option of availing water from the city through the State Water Company (PDAM), but residents do not prefer this</p>				
 <p>Residents have a concrete/brick open bottom toilet and septic tank. Septic tanks are rarely used. The sewerage often gets discharged directly into the drains and then the river without any form of treatment</p>					
 <p>Waste is collected by a community appointed cleaning officer into a community bin. The government organizes the transportation of the waste to a waste transfer station located 5km from the slum. The slum pays 1,000,000- 1,500,000 Rp. per month to the cleaning officer</p>	 <p>Waste is collected by a community appointed cleaning officer who dumps it at the temporary waste disposal site without any form of segregation. This is then transported by the local authorities to a dump yard. The entire slum pays 1,000,000- 1,500,000 Rp. per month for the collection of waste</p>				
  <p>Drains exist, sewerage mixes with the storm water and is let into rivers through the drains</p>					
 <p>Residents have access to electricity provided by PLN (State electricity company)</p>					
<p>Connectivity to the rest of the city with roads between the settlement and the city region being around 500m. Roads are either made of asphalt or concrete.</p>	<p>Public facilities are situated within a short distance from the slum (20-150m) and can be accessed by foot or motorcycle. Roads are either made of asphalt or concrete.</p>				
 <p>A community health center is situated near the slum</p>	 <p>Puskesmas (community health center) is situated 200m from the slum</p>				
 <p>Education is good. Elementary and middle schools are situated within a radial distance of 2-3km from the settlements.</p>					

Figure 2: Future projections and vulnerabilities of Denpasar Informal Settlements

SOCIAL		PHYSICAL				
	Increased population will put additional pressure on resources and services.			Increased chances of flooding in proximity to the river and in ter		
	 Increase in spread of water and vector borne diseases			Increased chances of plywood h where located near waste dispo		
		Increase in incidences of heat stress			Contamination of ground water areas close to the rivers	
				Increased pressure limited water expenditure on water		
					Overflow of sewerage into hous encouraging water and vectorbo	
					Heightened unhygienic conditio vectors and spread of diseases	
						Increased water logging due to channels
						Increased chances of fires in wa located near waste disposal site conditions
				Increase in chances of water log Overflow of mixed water into th overburdening of the infrastruc		
				Increase in pressure on limited l		



ECONOMIC		
houses situated in close temporary houses		 Impact on working duration which is proportional to their income for majority of the residents
housing catching fire especially sal sites		 Poorer productivity rates

due to flooding especially in

sources. Increase in overall

es putting health at risk and borne diseases

ons facilitating breeding of

waste disposal in drainage

ste piles especially where and heightened unhygienic

ging due to poor drainage. he settlement due to ture

health services



earthquakes, strong wind and landslides¹³. Given the population density, Denpasar is also prone to other types of disaster, such as flood-related disease outbreaks and poor sanitation. Slum settlements in the city are particularly vulnerable to fire hazards.

Climate Projections

In the absence of downscaled climate impacts for Denpasar city, the country level projections for Indonesia were reviewed (refer Karmalkar et al, 2006 and Measey. 2010)¹⁴. It was found that the following impacts could be expected:

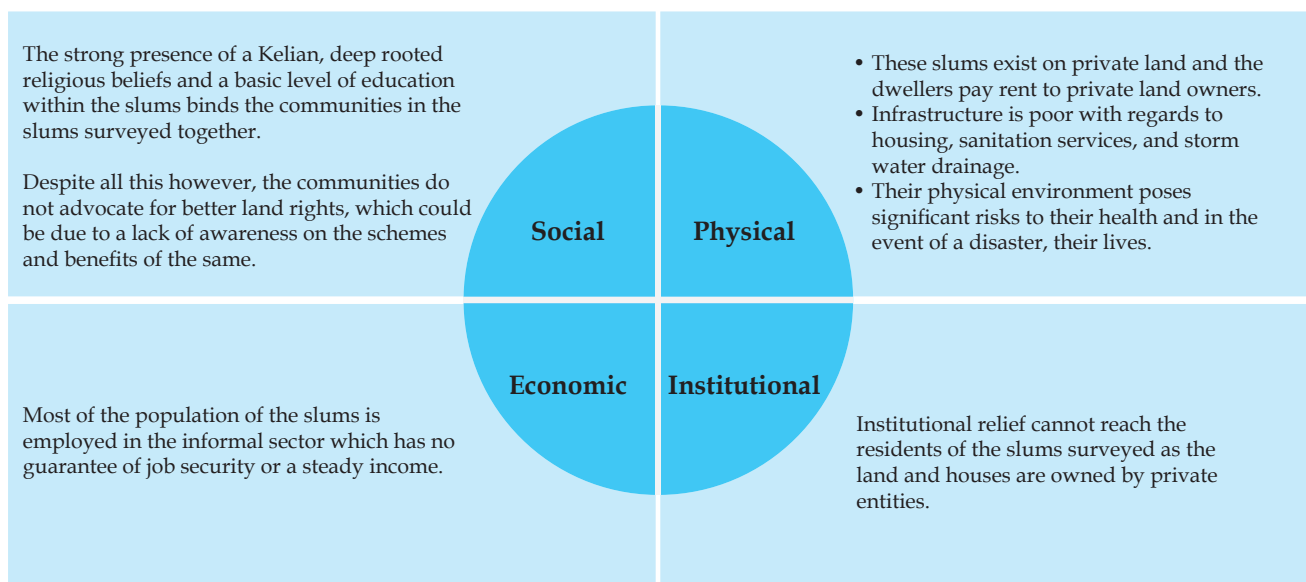
- An increase in the mean annual temperature by 0.9 - 2.2°C by the 2060s
- A variation in rainfall by -12% to +20% by the 2090s
- A sea level rise of 0.18- 0.59 m by 2100

Climate Change and the Informal Settlements

Taking into account the climate projections and the current state of the social, physical and economic systems within the slums, major vulnerabilities are summarized in figure 2.

Problem Statement

Summarizing the situation of Denpasar within the city, the following is the problem statement.



The biggest issue faced by the targeted slums is their economic status and livelihood security. Furthermore, due to the legal status of the land they live on, institutional mechanisms aimed at slum alleviation and better housing cannot reach them. As a result housing and sanitation services are poor having significant impacts on the residents' health. Their physical location further increases their vulnerability to climate change and disaster. The impact of the climate risks identified will only exacerbate the situation unless the residents are able to advocate for better land rights.

13. http://www-wds.worldbank.org/external/default/WDSCContentServer/WDSP/IB/2016/01/29/090224b0841107d6/1_0/Rendered/PDF/CityRisk0diag0Iience0in0Indonesia.pdf

14. Karmalkar, C. McSweeney, M. New and G. Lizcano (2006). UNDP Climate Change Country. Measey M. 2010. Indonesia: A Vulnerable Country in the Face of Climate Change Global Majority E-Journal, Vol. 1, No. 1 (June 2010), pp. 31-45