



A tale of two cities: comparing alternative approaches to reducing the vulnerability of riverbank communities in two Indonesian cities

JOHN TAYLOR

John Taylor is Director of the Indonesian NGO Yayasan Kota Kita, or Our City Foundation in English. Over the last 15 years he has worked in Latin America, Africa and Asia on a range of urban planning issues, in particular promoting participatory approaches to urban development.

Address: Jl. Tamblingan 75A, Sanur, Denpasar, Bali, 80288, Indonesia; e-mail: indojota@gmail.com; Twitter: <https://twitter.com/kotakitaorg>; website: www.kotakita.org

1. Revi, A, D E Satterthwaite, F Aragón-Durand, J Corfee-Morlot, R B R Kiunsi, M Pelling, D C Roberts and W Solecki (2014), "Urban areas", in C B Field, V R Barros, D J Dokken, K J Mach, M D Mastrandrea, T E Billir, M Chatterjee, K L Ebi, Y O Estrada, R C Genova, B Girma, E S Kissel, A N Levy, S MacCracken, P R Mastrandrea and L L White (editors), *Climate Change 2014: Impacts, Adaptation, and Vulnerability Part A: Global and Sectoral Aspects Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pages 535–612.

ABSTRACT This paper describes initiatives in two Indonesian cities to reduce flood risks for those living in informal riverbank settlements. In Solo, the mayor encouraged dialogue with riverbank households, which evolved into government grants available to households prepared to relocate so that they could choose and purchase land sites in safer locations and build their homes. The government provided services and, where needed, official identity cards to those who moved. As a result of this process 993 households relocated – another 578 with legal tenure of their riverbank plots have not moved and are seeking higher compensation. In Surabaya, the mayor also encouraged dialogue with riverbank communities but no agreement was reached on tenure or alternative accommodation and compensation for those who were to move. Although neither initiative was a response to climate change, both highlight the importance of development solutions that increase resilience and that work with those most at risk from flooding and other risks that climate change is likely to create or exacerbate in Indonesia.

KEYWORDS climate change adaptation / Indonesia / informal settlements / floods / riverbank settlements / urban resilience / vulnerability

I. INTRODUCTION

As in many Asian countries, cities in Indonesia face multiple threats from climate hazards, among them sea level rise, flooding and coastal abrasion. In struggling to respond to these challenges, as well as the effects of rapid urbanization, some Indonesian city governments have developed interesting policy innovations that offer lessons about vulnerability reduction.

People living in informal settlements along riverbanks are among the most vulnerable in Indonesia's urban centres. Without legal land tenure, people in these communities face the constant threat of eviction, and without legal recognition of their residency, their social vulnerability is increased, as they cannot access basic services. This is compounded by the threat of flooding that hits every wet season and that is intensifying along with heavier rainfall patterns.⁽¹⁾

This article, based on research by the Indonesian not-for-profit organization Kota Kita, looks at case studies from two Indonesian cities to highlight how local urban development approaches have contributed to reducing vulnerability to climate change, even though they were not

designed with climate change adaptation in mind. It considers government responses to riverbank settlements in the cities of Solo and Surabaya, and their impact on climate change resilience. What the cases show are that the response to riverbank communities living in areas of risk is inextricably linked with these communities' development needs, such as housing, public services and security. Communities will not relocate if it means they become worse off or more vulnerable. Therefore, the most successful strategies have presented communities with alternatives that meet their needs, give them options and, in turn, reduce their vulnerability.

The cases of Solo and Surabaya are truly a tale of two cities — the Solo city government was able to relocate a riverbank community through a peaceful participatory process, while in Surabaya, although an inclusive approach was attempted, the city has had less success, unable to negotiate an agreement with residents to ensure their basic needs are met. The research contributes to efforts to document lessons about policy design and implementation and provides conclusions about why these policies have been successful in bolstering resilience and reducing vulnerability.

II. BACKGROUND

Riverbank communities and other informal settlements have been a longstanding issue in Indonesia, and the business-as-usual way of dealing with them to date has been to use the military or police to force communities out without compensation. This leaves them with few, if any, alternative places to live and without access to basic services.

This happened in 2014 in the capital, Jakarta. People from informal communities who left the city to spend time with their families in their home villages, to celebrate the end of the Islamic fasting month of Ramadan, returned to find their homes flattened on the orders of Jakarta Governor Basuki Tjahaja Purnama. He is a celebrated reformist but is also known for his hard-handed policies.⁽²⁾

Although the idea was to offer the communities public housing, this housing was not always in practical areas or suitable for everyone. These communities *already* have poor access to services, like clean water and sanitation. Without alternatives in areas that work for them, they may find themselves with no housing at all and no access to services at all, leaving them more socially vulnerable.

Climate change events only exacerbate the problem – widespread flooding in Jakarta in February 2013 left more than 14,300 people displaced, and approximately US\$ 1 billion in losses were estimated.⁽³⁾ With sea level rise, flooding and coastal abrasion continuing to pose threats to many cities throughout the country, Indonesian local governments are being asked by the national government to take responsibility for developing solutions to reduce their vulnerability to this increasingly frequent threat. As cities grow rapidly in Indonesia, they are urgently seeking policy-based solutions that address by-products of rapid urbanization, such as informal settlements, and build resilience to climate change impacts.

This is all occurring as Indonesia continues with its process of decentralization, through which powers are devolved to local administrations. The process, which began in 1998, has opened up opportunities for improved urban resilience to climate change and good governance in dealing with informal settlements at the city level, making Indonesian urban centres a

2. Pearl, Harry (2014), "Eviction Effort by Basuki Leaves E. Jakarta Residents Resentful", *The Jakarta Globe*, 31 July, available at <http://thejakartaglobe.beritasatu.com/news/jakarta/eviction-effort-basuki-leaves-jakarta-residents-resentful>.

3. Jarvie, Jim, Ratri Sutarto and Intan Asmara (2013), "Government and Business Should Join Hands to Combat Jakarta Woes", *The Jakarta Post*, 6 April, available at <http://www.thejakartapost.com/news/2013/04/06/govt-businesses-should-join-hands-combat-jakarta-flood-woes.html>.

promising setting for policy-based initiatives. Some city governments have been able to take advantage of decentralization and have crafted social policies that respond to the specific context of their citizens and needs.

But decentralization has also been a murky process at times, and has caused confusion with overlapping jurisdictions and some unclear legislation. Decentralization is not evenly applied throughout the country, so opportunities are varied, and it is unclear whether good practice and innovation are transferable in other local contexts, given the dependence on local political conditions.⁽⁴⁾ This is relevant to resilience because large-scale impacts of climate change require action at many different levels of government; such administrative issues continue to frustrate attempts at coordinated action.

In many Indonesian cities, such as the capital, Jakarta, some at-risk informal riverbank settlements have been threatened with eviction; others have been largely ignored. But the cases of Solo and Surabaya are rare examples in which solutions have been developed with the involvement of the communities in question. They both present alternative approaches to vulnerability, but contrast in terms of methods employed: in Surabaya, the policy favours in-situ renovation, while in Solo the approach favoured relocation.

III. METHODOLOGY

This research was conducted through interviews with government officials, community residents, civil society leaders and the staff of non-governmental organizations, as well as through the analysis of government documents, data, local regulations and newspaper articles. In Solo, I conducted a total of 10 interviews or focus group discussions. Four focus group discussions were held with two *Kelompok Kerjas* (working groups, as described below) at the *neighbourhood* level, and two at the *sub-neighbourhood* level with residents from the riverbank communities of Pucangsawit and Sewu, where many informal settlers had lived prior to relocation. Six interviews were conducted with representatives from three different households that had undergone relocation, and three with representatives from the city government departments – Integrated Planning, Public Works and Urban Planning. In Surabaya, I conducted three focus group discussions with members of the civil society organizations Paguyuban Warga Strenkali, the advocacy group Urban Poor Consortium, and the Kali Jagir community group, and four interviews with residents, the Director of the East Java Province Water Department, and community leaders, such as Gatot Subroto.

These two cases were chosen because they present distinct and comparable approaches to resolving problematic issues of riverbank settlements, but also mark a departure from traditional policies to evict them without consultation. The two cities are distinct in that their leaders have become recognized and politically successful, due to their introduction of a more participatory and open governance approach, one that has opened dialogue and engaged with marginalized groups, such as informal riverbank settlers. The political trajectories of both leaders demonstrate their importance. For instance, Solo Mayor Joko Widodo, who served from 2005–2012, later became the governor of Jakarta, Indonesia's largest city, between 2012 and 2014, and went on to win the Indonesian presidential election in July 2014. Mayor Tri Rismaharini rose

4. Aspinall, Edward and Greg Fealy (2003), "Introduction: Decentralisation, democratisation and the rise of the local," in Edward Aspinall and Greg Fealy (editors), *Local Power and Politics in Indonesia: Decentralisation and Democratisation*, Institute of Southeast Asian Studies, Singapore.

from a civil servant position in the City of Surabaya's Department of Parks and Hygiene, to become the mayor of the second-largest city in Indonesia in 2010; she is still serving today.

IV. THEORETICAL FRAMEWORK

Vulnerability is a multi-dimensional term, defined in both physical and social measures. Physical vulnerability refers to the amount of potential damage that can be caused to a system by a particular hazard.⁽⁵⁾ Social vulnerability on the other hand is determined by factors such as poverty, inequality, marginalization, access to health and housing quality.⁽⁶⁾ For many urban inhabitants these two conditions are closely linked; for example, many poor rural migrants are not able to afford land or have few economic networks they can draw upon to seek jobs, resulting in a more precarious existence in the city. As a result they may be forced to seek housing in places that are closer to centres of employment, and these may be in high-risk areas, such as hillsides or the banks of rivers that flood. Those who live in these dangerous areas may also be occupying land with no legal tenure. During interviews in these communities, people complained that if they were evicted, they would be forced to seek other housing and would potentially lose all the capital they had invested in their current home. Their physical vulnerability is thus connected to a social vulnerability.

One of the important factors contributing to social vulnerabilities that compound the physical vulnerability of living along rivers that flood is land tenure. In Indonesia having secure land tenure refers to the possession of a legal certificate proving ownership of the land a resident lives on. Without legal land tenure, residents are subject to eviction and have little basis to negotiate their right to remain or for compensation. Government policies can make social vulnerability more acute by, for example, evicting socially vulnerable households from their homes without compensation, on the basis of their not having land tenure. Efforts to reduce physical vulnerability can also have an impact on social vulnerability, in some cases, reducing it, and in others, exacerbating it. The best approaches to riverbank communities consider these social vulnerabilities.

Resilience is defined by the Intergovernmental Panel on Climate Change as "*the ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt to stress and change*".⁽⁷⁾ In this sense, resilience is defined in terms of the behavioural changes and the mobilization of capacities within communities and systems. These capacities could be to collect and gather money or to negotiate with governments, for example. An emphasis is placed on what communities can do for themselves and how their capacities can be strengthened, rather than concentrating on their vulnerabilities to specific hazards, or individual/community needs in an emergency.⁽⁸⁾ Community or system resilience, from this perspective, can therefore be understood as:

1. Capacity to absorb stress or destructive forces through resistance or adaptation.
2. Capacity to manage or maintain certain basic functions and structures during disastrous events.
3. Capacity to recover or "bounce back" after an event.⁽⁹⁾

5. Allen, K (2003), "Vulnerability reduction and the community-based approach", in Mark Pelling (editor), *Natural Disasters and Development in a Globalizing World*, Routledge, London, pages 170–184.

6. Blaikie, P, T Cannon, I Davis and B Wisner (1994), *At Risk: Natural hazards, people's vulnerability and disasters*, Routledge, London.

7. Intergovernmental Panel on Climate Change (2007), "Glossary", *Climate Change 2007: Synthesis Report*, available at https://www.ipcc.ch/publications_and_data/ar4/syr/en/annexessglossary-f-z.html.

8. Twigg, J (2007), "Characteristics of a Disaster-Resilience Community: A Guidance Note", DFID Disaster Risk Reduction Interagency Coordination Group, August.

9. See reference 8.

10. Campanella, T J (2006), "Urban resilience and the recovery of New Orleans", *Journal of the American Planning Association* Vol 72, No 2, pages 141–146.

11. Da Silva, J, S Kernaghan and A Luque (2012), "A systems approach to meeting the challenges of urban climate change", *International Journal of Urban Sustainable Development* Vol 4, No 2; also Brown, A, D Dayal and C Rumbatis del Rio (2012), "From practice to theory: emerging lessons from Asia for building urban climate change resilience", *Environment and Urbanization* Vol 24, No 2, pages 531–556.

12. See reference 11, Da Silva et al. (2012) and Brown et al. (2012).

13. Hardoy, Jorgelina and Regina Ruete (2013), "Incorporating climate change adaptation into planning for a liveable city in Rosario, Argentina", *Environment and Urbanization* Vol 25, No 2, pages 339–360.

14. Ministry of National Development Planning (Bappenas) (2012), *National Action Plan for Climate Change Adaptation*.

15. See reference 1.

Beyond the community level, resilience is also defined in terms of the functioning of social networks and public service systems of a city.⁽¹⁰⁾ As this research focuses on urban resilience, it draws upon urban-specific frameworks that have been studied in a number of Asian cities,⁽¹¹⁾ with a particular focus on three components of urban systems: knowledge networks, institutional networks and infrastructure networks.⁽¹²⁾ These "socio-technical" networks shape the functioning of an urban area. The authors of that research go on to identify characteristics of a resilient system. Of particular relevance to the case studies presented in this paper are: flexibility (ability to change and adapt), redundancy (capacity to accommodate increasing demand), resourcefulness (capacity to mobilize resources), responsiveness (ability to reorganize and re-establish functions) and capacity to learn (ability to internalize experiences and learn from them). This paper will examine the two cases in Indonesia taking these characteristics of a resilient system into consideration.

This paper seeks to contribute to the existing literature⁽¹³⁾ about the way that city governments are dealing with climate hazards and adaptation policies by offering examples of factors that might contribute to successfully managing vulnerability along riverbanks.

V. VULNERABLE RIVERBANK SETTLEMENTS

a. Background

Riverbank communities in Indonesia are physically vulnerable – the increasing volume of rainfall and shorter, more intense rainy seasons mean that flooding is becoming more frequent and severe.⁽¹⁴⁾ But they are also socially vulnerable – rapid population growth in cities, caused in part by migration from rural areas, and a lack of access to land or affordable housing mean that many of the poor are unable to find an adequate place to live or access basic services. One significant impact of continued urbanization is now widely recognized to be increasing vulnerability of urban poor communities because they are having to settle in areas that are more exposed to climate hazards than other groups.⁽¹⁵⁾

Urban riverbank communities across Indonesia also struggle for recognition as legitimate residents of cities and for legal tenure of the land they occupy. Indonesian authorities only recognize those with an official identity card as citizens. To prove legal residency in Indonesia requires a national identity card, known as a KTP. The card states that you are from a certain neighbourhood within that city; without one it is not possible to access basic services, such as health care and education within the public school system, and even employment is severely restricted. Many poor migrants are considered illegal residents even when they have an identity card from a neighbouring municipality, regardless of how long they have lived in the city, and they are often poorly treated by authorities. Dwellings without legal land tenure (known as *sertifikat tanah*), are considered illegal, and this makes urban waterway settlements vulnerable to eviction without compensation.

The migrant poor and urban labourers often settle along riverbanks because the land is state-owned and usually easier to occupy than private land, and as a result it is uncommon for riverbank settlers to have land tenure. These settlements rarely have public services and are more difficult

to consolidate, and thus can become zones with a high concentration of poverty because of this insecurity of land tenure. Often, state-owned land that has been occupied is in areas of risk, for example along railway lines, steep slopes and rivers.

Policy responses of local governments are crucial in addressing the urgent issue of flooding that results from rapid urbanization, exacerbated by flooding due to increased rainfall. In many cases, relocation of those settlements is deemed necessary, especially where flooding is seasonal and can cause serious damage to houses and claim human life.⁽¹⁶⁾ The decision to relocate communities demands sensitivity, as such a process in Indonesia brings to mind memories of government use of force during the Suharto dictatorship. Hadi Sutrisno, the head of the Sewu community working group in Solo, explains: *"In the beginning, people rejected the relocation programme because they were traumatized from the Suharto regime, when evictions were common and there was no compensation."* Local governments have to consider this violent history and recognize that attempts to engage with communities require building trust, dialogue and understanding.

The two city cases discussed in this paper are notable because they demonstrate instances in which the local government has publicly acknowledged the existence of informal riverbank communities and engaged in dialogue with them. But they differ, as noted, in their approaches. The case from Solo in Central Java Province demonstrates a situation in which relocation was well handled by local government and where the displaced population was generally satisfied with the outcome.⁽¹⁷⁾ Understanding how the government introduced and implemented this policy can help shed light on the different facets and approaches necessary to ensure that this type of process is successful. The other case, however, presents mixed results. In Surabaya, conflicting city and provincial policies resulted in community resistance; the community is still vulnerable and, despite raised hopes, the government is unsure how to proceed.

b. Case 1: Solo relocation programme

The city of Solo, also known as Surakarta, is a secondary city with a population of around 600,000 inhabitants in Central Java Province. Due to its location on the banks of the Bengawan River, the longest river in Java, the southern part of the city floods regularly. Seasonal rains threaten poor riverbank communities whose residents have little means to build their homes with robust materials and who have occupied this public land because their resources are too limited to buy land on higher ground. Given Solo's strategic importance as a political and economic centre of the region, many people are attracted to the area, and this creates crowding in dense riverbank settlements, which are often the destination for newcomers.

In November 2007, seasonal rains brought large-scale flooding to the Bengawan River, resulting in damage to 6,368 homes.⁽¹⁸⁾ Given the high cost of providing emergency services and the more than US\$ 27,000,000 in damage caused by the flooding,⁽¹⁹⁾ Mayor Joko Widodo decided to attempt to relocate those in areas of high risk to safer locations. Since such flooding had repeatedly caused damage for a number of years, it

16. In the 2007 floods in Solo, 6,368 houses were impacted, 25 per cent of which were located on riverbanks. Government of Surakarta (2012), *Paparan Bantuan Relokasi Pasca Banjir tahun 2007 Sungai Bengawan Solo Kota Surakarta [Presentation on Post-Flooding Recovery Assistance 2007 on the Bengawan Solo River, Surakarta]*.

17. Interviews with Sukir and Hendi, members of the Sewu Solo sub-neighborhood working group. Interview with Sukir, Pucang Sawit, Mipitan Mojosongo, 15 January 2013 and 21 February 2013. Interview with Hendi, sub-working group leader of Pucang Mojo, 22 February 2013.

18. See reference 16, Government of Surakarta (2012).

19. Firdaus, Huhammad (2009), *Analysis of the 2007 Flooding Damage in Surakarta*, Universitas Sebelas Maret.

20. Personal interview with Hasta Gunawan, Head of the Department of Community Empowerment, Child Protection & Women's Empowerment of the City Government of Solo, March 2013.

21. Gutierrez, Catalina, Pierella Paci and Beom S Park (2010), "Understanding the Impact of Economic Shocks on Labor Market Outcomes in Developing Countries: An application to Indonesia and Mexico", World Bank Policy Research Working Paper 5283.

22. Majeed, Rushda (2014), *Defusing a Volatile City, Igniting Reforms: Joko Widodo and Surakarta, Indonesia, 2005 – 2011*, Princeton University Innovations for Successful Societies.

23. *Nguwungke Uwong* is a Javanese term literally meaning "humanize humans" and is understood as a way of treating all people, especially the poor, with dignity and respect.

was decided that moving settlements out of harm's way would be the safest option. This relocation programme has been considered a success, as nearly 1,000 houses have been relocated and families that have moved generally feel satisfied with their new locations and living situation.⁽²⁰⁾

At the time, Mayor Joko Widodo was recognized for his different, more inclusive approach to resolving urban issues in Solo compared to the city's previous mayors. Early in his tenure, he achieved national recognition for the removal of street vendors to purpose-built markets. Street vendors had become an issue in Solo following the 1997–1998 Asian financial crisis.⁽²¹⁾ The closure of factories and economic upheaval that caused unemployment to rise pushed many to seek livelihoods through informal sector activities, such as street vending. These activities were expanded further following the global financial crisis of 2007–2008. From 1998, a central public space called Banjarsari Park became the focus for informal vendors in the city, amassing by 2005 an estimated 1,000 vendors.⁽²²⁾ Many citizens complained of property damage, public disorder and criminal activity, and the unsuccessful response by previous governments had been to disperse the vendors by force.

In August 2005, Mayor Joko Widodo, soon after beginning his first term, initiated a series of public meetings with the vendors. He sought to establish dialogue and invited them all to meetings at his residence, where he offered food and drink, more than 50 times. Together with his government, he took advantage of these meals to convince the vendors of his plans. He employed a people-centred approach, referred to as *Nguwungke Uwong*,⁽²³⁾ to engage with the vendors, building rapport and trust. He was able to convince them that moving to a purpose-built market facility would be beneficial to them, with a more secure and improved location to sell their products. After almost a year of negotiations they agreed and in July 2006 he led a procession of the 1,000 vendors from the Banjarsari Park to relocate to the Klithikan Notoharjo market in the neighbourhood of Semanggi. Further government interventions ensured that access streets to the market would be paved, new signage created and public transportation connected. By 2009, the original Banjarsari vendors reported revenue increases. This event is relevant because it demonstrates that Mayor Joko's approach was consultative and patient and sought win-win solutions.

Relocation of the riverbank dwellers was a complicated policy for Mayor Joko and the Solo government to implement because settlers were reluctant to sacrifice their often strategic locations for ones at a distance from their jobs, particularly if they actually possessed title to the land. The cost of doing so was also prohibitive for households. The national government had agreed to transfer a limited amount to support resettlement but it was far below what was needed. In addition, some were not Solo residents but migrants from outside the city, which made it difficult for the mayor to convince the local parliament to spend the additional funds needed on their relocation. But the mayor was convinced of the need for a comprehensive policy to fold the poor, including informal riverbank dwellers and migrants, into the city's social welfare programmes (such as free education and healthcare for the poorest), and to extend these city services to them by expediting the process for them to become officially recognized. For example, one policy called *KTP Dalam Satu Jam* (KTP in an Hour) was set in place to expedite the process of obtaining an official ID card to access basic services.

Mayor Joko and other officials engaged in a process of outreach to build social trust and listen to the concerns of riverbank residents. They met in neighbourhood community centres over the course of 24 separate meetings. Through such extensive outreach the mayor listened to locals and also set up a multi-tiered community engagement approach (at the city, neighbourhood and sub-neighbourhood levels), forming working groups, or *Kelompok Kerja*. These working groups consisted of community representatives who collected and disseminated information, verified community data, looked for alternative lots of land and presented their opinions to government. This effort strengthened local institutional networks.

The government's strategy was to convince households that it was worth trading their riverbank locations for legal land tenure, access to social welfare policies that included education and public services, and the chance to live in safety. Eventually, a standardized compensation measure was agreed upon through which households that owned houses in the riverbank areas would be given cash grants to buy new land (equivalent to US\$ 1,200), build new houses (US\$ 800) and contribute to building public infrastructure (US\$ 150).⁽²⁴⁾ In total, 1,571 homeowners were offered the compensation, 993 of whom did not have legal land tenure. Only approximately 40 per cent of the cost was covered by national government transfer to assist the communities affected by flooding. The mayor had to convince local parliament of the importance of releasing the remainder from the city's funds. Many argued that the resources would be best spent on Solo residents only.

The compensation scheme encouraged riverbank community members to take the cash grant and use it to find their own plots of land and negotiate the cost. They were encouraged to create their own working groups of neighbours and to strategize for the move together, which would allow them to maintain a sense of continuity and social stability by preserving their networks. Perhaps the most significant offer made by the city government was the guarantee to expedite land tenure for these new plots. Usually a lengthy and costly process, undertaken through the Badan Pertanahan Nasional (the National Land Agency), the local government ensured that it would cover the costs involved and prioritize their claims. But buying land and moving to sites within Solo was not the only option available to the riverbank residents. The cash grant offer also meant they could move outside of Solo to other municipalities, or even to public housing available in the city.

Those who did have land tenure, and were considered legal dwellers, believed that the compensation being offered was too low and decided to hold out. Many of these 578 legal dwellers are still located in the same riverbank areas to this day, and are still at risk. Those riverbank dwellers who did not *own* their houses, but just occupied and rented them, were deemed ineligible for the compensation. While they received disaster aid, they did not receive compensation.

The Solo government followed up the relocation with complementary investments to ensure the relocation site was integrated into the city. Most of the people who moved found lots of land within the city boundaries in the northern area of Mojosongo. At this time, Mojosongo was sparsely populated with few roads or services, which helped to lower the costs of land. The city government agreed to continue to support the resettled population by extending electricity, water supply, sewer pipes

24. See reference 16, Government of Surakarta (2012).

and roads at no additional cost. Interestingly, it was the working groups again that had to be proactive about connecting with government and ensuring that these further services were extended; they organized, for example, for relocation and negotiated the purchase of lots of land. Those communities where the *Kelompok Kerja* were passive sometimes ended up without electricity.

c. Case 2: *Strenkali*, Surabaya

Surabaya is Indonesia's second-largest city, with a population of more than three million. It is the capital of East Java, which is itself the country's second most populous province. A vibrant trading centre and port city, Surabaya swelled in population during the 20th century, attracting workers to its factories and warehouses. Over the last 20 years, many newcomers, unable to find land for housing, decided to settle along the banks of the Wonokromo River, or *Strenkali*, as riverbanks are known in the local dialect.⁽²⁵⁾ But part of the problem in dealing with this area is that the riverbanks of Surabaya fall under the jurisdiction of the provincial water department, although they are managed by the city government. This is one example of murky law in the decentralization process that has caused more problems than it has solved. As a result, it is unclear which government is technically responsible for the area.

Some 1,600 households, or approximately 8,000 people, live along *Strenkali*, and are grouped into six riverbank communities. The research focused largely on the community of Bratang, which has 350 households of low-income earners, many of whom pick trash and collect rags for a living.

Paguyuban Warga Strenkali (PWS), or the Strenkali People's Movement, is a civil society organization made up of various community groups and residents' associations united by their desire to continue living along the banks of the Wonokromo River. The experience described below is a story in two parts: the first of successful negotiation and collaboration between citizens' groups and government; the second of a standoff and miscommunication. The case documents the community's struggle and interaction with government, and offers a precautionary example of how governments may mismanage relations with such riverbank communities.

In May 2002, the then-mayor Bambang Dwi Hartono and the Municipal Government of Surabaya sent an eviction notice to the people of the Bratang community – approximately 250 households at that point, or a little under 2,000 inhabitants. The eviction notices claimed that riverbank communities were contributing to the pollution of the river, resulting in rising water levels and potential flooding. In response, the communities along the river in similar locations that lacked legal tenure decided to organize themselves into the civil society organization PWS. Emboldened by contacts with other NGOs, they approached the Minister of Public Works and were successful in setting up a joint body with a university and an NGO to study possible alternatives to eviction.⁽²⁶⁾ The resulting study was heralded as a breakthrough, and the report on alternative schemes to limit pollution and avoid relocation was disseminated to provincial parliament and the community.

While the municipal government maintained that national legislation stipulated that dwellings on riverbanks had to be located at least 12 to

25. Rulli Pratiwi Setiawan (2010), *Pengusuran Permukiman Liar di Stren Kali Jagir: Sebuah Tinjauan dari Sisi Hukum dan Humanisme* [Eviction of squatters on Jagir River: a review from a legal and humanist perspective].

26. Some, Wawan, Wardah Hafidz and Gabriela Sauter (2009), "Renovation not relocation: the work of Paguyuban Warga Strenkali (PWS) in Indonesia", *Environment and Urbanization* Vol 21, No 2, pages 463–475.

15 metres back from the water's edge, the new PWS report proposed moving the settlement to only 3 to 5 metres back. This would allow the construction of an access road, the installation of septic tanks to prevent river pollution from the riverbank settlements, and tree planting along the river's edge to protect against erosion. The provincial parliament, which claimed jurisdiction over the riverbank, reviewed both plans and concluded that the social costs of evicting the estimated 1,600 *Strenkali* households, or 8,000 inhabitants, would be too high. Instead it supported the "people's model" — the PWS report. As a result, the provincial parliament drafted a by-law, or *perda*, to govern the riverbank settlements in October 2007. This stipulated that the community members move their homes back from the water's edge, install sanitation infrastructure and septic tanks for each home, and replant on the riverbanks to prevent further erosion. It also required the government to dredge the river and implement other river maintenance measures. This was an encouraging step for the riverbank community and something of an anomaly in terms of community collaboration with provincial government. As Whisnu Sakti Buana, a member of provincial government, said:

There was a special difficulty in trying to come to an agreement between the government and the villagers, but we had faith it could happen if we directly involved the villagers. This is the first time in Indonesia that we made a regulation with the villagers. This is the first time we made a regulation with three parties — it is usually just government and parliament.⁽²⁷⁾

While the new policy brought the community together in the spirit of collaborative action, or *gotong royong*, the government was not so forthcoming with action.⁽²⁸⁾ In fact, the city government was never behind the *perda*, and in April 2009 issued another call for eviction, based upon an earlier regulation. In the city officials' minds, this was a city government matter, not a provincial matter. This is another example of how decentralization has failed to clearly assign responsibilities to certain levels of government.

Despite further attempts to bring different stakeholders to the table and the fact that the communities upheld their end of the agreement, the city government held firm, and continued to press for the eviction of these communities. In April 2009, there was a meeting that brought together the East Java Province Department of Water, NGOs and provincial government officials in order to reject the city government's notice. But days later, the city government disavowed this meeting, and ignored the requests of the community and the provincial legislature.

In 2010, the election of the new mayor, Tri Rismaharini (Risma), promised a brighter outlook for the *Strenkali* communities as she pledged a more open and inclusive form of governance. Mayor Risma is a hands-on reformer who rose through the ranks as the Head of the Department of Hygiene and Parks to become the mayor, an unusual feat in Indonesia, given that many mayors are required to spend their own money to finance campaigns. She has since been prolifically active in improving public spaces and parks, and famously resisted the construction of a toll road through the middle of the city. Mayor Risma has since met on several occasions with the *Strenkali* community, creating an open channel of

27. See reference 26.

28. Interview with Gatot Subroto, Member of PWSS, 7 March 2013.

communication and offering support in a number of ways. For example, she has promised to expedite the process to legalize their citizenship status to be recognized as KTP holders in the city, thereby helping them to access public services, such as healthcare and education. She has also helped them to plant vegetation and trees on the riverbanks to avoid erosion and flooding.

But the status of the community remains in limbo to this day. Most of the riverbank community is without legal land tenure and few options have been proposed by the local government to provide compensation or a viable alternative. For example, plans are on hold to relocate *Strenkali* community members to public housing, as negotiations are being held up by disputes over the payment of monthly rent. The riverbank settlers contend that they should be able to live in public housing units for free, while the government insists upon a monthly rent. In addition, the units being offered are far from the city, without adequate public transportation facilities to allow those who move to maintain jobs and economic opportunities in the city. As a result, there has been little change in terms of improving their conditions or extending additional basic services such as sanitation or piped water. The community continues to struggle for rights to the land and permanent recognition.

The community members still feel uneasy about their future: *"We have gotong royong for improving our environment, and we have spent our own money. Mayor Risma recognized that, but we still feel uncertain. When will it be over? We've been struggling for more than 10 years and we are tired."*⁽²⁹⁾ This constant siege mentality and the variability of the political and legal situation has resulted in an inconsistent dialogue over the last 10 years that has not yielded a viable alternative. While dialogue is now open and Mayor Risma has brought hope, there is still no concrete change on the ground, and the resilience of these communities in the face of flooding and possible eviction is still in doubt.

VI. LESSONS LEARNED FROM VULNERABLE RIVERBANK SETTLEMENTS

A comparison of the two cases offers some interesting lessons about the values of citizenship rights and land tenure, community engagement, and the confusing situation of overlapping political jurisdictions in reducing vulnerability and enhancing resilience in cities. The following section examines some of the factors that contributed to the success, or failure, of policies to reduce physical and social vulnerability. It should also be mentioned that while the city of Solo chose to adopt a relocation strategy, this is not always the best or only option; in many instances, residents accept and have adopted means of living with a degree of risk. In some cases, relocation may increase the vulnerability of households in other ways, for example by breaking social ties and moving people away from their income sources. Below are a few of the lessons learned from these two cases.

Governments can have greater success when they address the basic needs of the most vulnerable and their desire to achieve legal status and tenure. In Solo, government efforts to reduce vulnerability, despite the difficulty of moving residents from their homes, were successful due to their desire to be a part of the government's social welfare programmes

29. Focus group discussion with the Barata Jaya community in *Strenkali* in Barata Jaya, Surabaya, 7 March 2013.

and obtain legal tenure – to become legitimate members of the city. Thus, the government was able to successfully negotiate with them by prioritizing the needs of the most vulnerable and offering to address their immediate needs. A range of government policies were necessary to bring this about, such as facilitating the approval of their legal status, or KTP (identity card), subsidizing and expediting land tenure, and connecting basic services and roads to new settlements to ensure that their new residence would be a part of the city. Such follow-up and complementary interventions demonstrate that the process of reducing vulnerability cannot consist simply of removing people from harm's way, but that such people are motivated by and respond positively to having their basic needs met. In the context of social programmes for the poor, this means extending social services and ensuring that they receive them. This was also demonstrated through the successful transfer of vendors, as well as the follow-up improvements made to the Klitikan Market and surroundings to ensure its commercial success.

In Surabaya, the community programme has taken a different route, with residents preferring a more autonomous process in raising money and providing their own services and upgrading. Their choice is based upon a different set of circumstances and opportunities presented to them by their local and provincial government, making comparison difficult. But today their condition, in terms of basic services and tenure, is little improved, which suggests that a lack of collaboration with government programmes risks leaving too much of a burden upon the poor to improve their own situation. Certainly purchasing land and basic infrastructure, not to mention connecting that infrastructure to larger city networks, is a considerable cost that may be impossible to meet if citizens have no further financial or institutional support from the government or other entities. Therefore, if governments offer to collaborate by prioritizing the basic needs of the poor and their recognition as legal citizens, and make efforts to extend full rights such as tenure, this can be an effective way of ensuring collaboration and success.

Good governance that empowers citizens as active subjects in their struggle for development can help ensure success. Both cases demonstrate the importance of governance approaches that encourage citizens to be proactive and collaborate with local or provincial government. In Surabaya, the initiative of local communities to organize themselves, together with a local university, and then reach out to provincial government demonstrates that such efforts can have successful outcomes. The community members proposed an alternative solution and volunteered their own time, resources and energy to implement it themselves. In Solo, the neighbourhood and sub-neighbourhood working groups were a vital component in the relocation strategy, which facilitated the compensation process. The community groups then were empowered by the cash grants to seek and negotiate land on their own. It can be argued that such an ambitious programme would not have been possible had such groups not taken on this task themselves. Doing so allowed them to find information and react to it quickly, taking advantage of opportunities in the land markets of Mojosoongo. Local governments themselves would likely have moved much more slowly and this could have jeopardized the success of the programme.

Thus a factor in the success of the initiatives was the degree to which the community felt empowered to act in its own interests, and the support of government institutions for it to do so. In both of these cases, each

party was responsible in part for implementing the relocation, which promoted resourcefulness, the capacity to learn and flexibility. These qualities contributed to there being large-scale action and collaboration from both sides.

Flexible and iterative planning processes help ensure that solutions can be found. Governments and communities find greater success when they seek flexible solutions to relocation processes, seeking compromise and integrating community ideas. Conversely, when local governments prescribe only one possible outcome, there is less chance that the two sides will reach an agreement. In the Solo and Surabaya cases, significant gains were made when riverbank communities were involved in finding creative solutions. In Solo, the government recognized that it was best to allow the community members themselves to choose where they wanted to move, and with whom, and to empower them with cash grants and agency over their own relocation. In this case, a willingness by the mayor and government to engage in dialogue and adopt flexible solutions contributed to reducing the vulnerability of at-risk populations. Finding additional resources to support the cost of the relocation also demonstrates the resourcefulness of the government in implementing these solutions.

In the Surabaya case, we see the conflict between the provincial government's willingness to be flexible and the city government's rigidity and inflexibility. The refusal of the community to accept this position resulted in protests, sometimes with violent results. Government inflexibility can lead to community inflexibility too.

Civil society organizations and NGOs played key roles in both processes to help mobilize community participation and raise awareness. These organizations can provide communities with technical and legal support that helps them to better negotiate outcomes. Positive institutional networks, where possible, can therefore contribute to more resilient housing systems.

Many of the poorest and neediest are left out of policies to reduce vulnerability, and are left with few options other than illegal occupation in places such as riverbanks. It is significant that while the relocation programme in Solo was considered successful, about a third of households located on the riverbanks of the Bengawan in areas of risk remain there. As owners with land tenure, they have not been able to come to an agreement on the compensation and have rejected the government's offer. In addition, those households that were merely renting homes, as opposed to having built them, were left with no compensation at all. These groups remained either in areas of risk or with no housing alternative once their housing was removed. Likewise, in Surabaya there has been no agreement over the compensation amount, and as a result the 1,600 households are in a state of limbo over their future. With no compensation, households are left with little option but to remain in place as their capital is mostly tied to their existing homes. Another consideration is that relocation might have been possible in Solo due to the smaller size of the city and the availability of land in a remote and undeveloped part of it. In Surabaya, a sprawling and built-up metropolitan region, such land would be very difficult to come by at such a low price. This suggests that it is difficult to compare the two cities in a meaningful way.

A more general point can be made about the difficulty that migrants face in formalizing their new residence and attaining legal status in the

city. Many are arriving in the city for temporary work, while others may not possess papers at all. Certainly there are many reasons that they may choose not to seek a formal KTP. What is notable, yet little known, is how many people remain in this group; some estimates indicate that nearly 30 per cent of Jakarta's population, some four million people, are not legally registered. Thus, while government programmes may be effective in reaching the poor, they are clearly missing many people who are without legal status. A lack of access to the social benefits of legal status compounds vulnerability, as it means that the poor are unable to seek medical services and education and may be discriminated against in employment.

VII. CONCLUSIONS: BUILDING RESILIENCE TO CLIMATE CHANGE

The role played by institutions and government is pertinent to each case, but so are infrastructure networks, institutional networks and knowledge networks. Among the resilience characteristics identified, flexibility, responsiveness, resourcefulness and a capacity to learn are especially important to the Indonesian context, given the particular nature of how communities function, the governance opportunities offered by decentralization, and the social challenges faced in urban areas.

While vulnerability has an obvious physical aspect, it should be addressed through a range of different dimensions. The people who are vulnerable to climate change are often the urban poor living and working in situations of physical *and* social vulnerability; as such, their needs are substantial and immediate. In the context of seeking responses to riverbank communities living in areas of risk, the cases indicate that alternatives that prioritize the vulnerable and offer to meet their development needs (such as housing, public services and security) are an important feature of successful strategies, and help provide tangible results that are meaningful to people.⁽³⁰⁾

In the same way that providing development opportunities helps to reduce vulnerability, so does adopting inclusive and participatory governance approaches. This requires city governments to be responsive, flexible and resourceful. The cases indicate that in instances when city governments adopted a more inclusive approach, involving citizens through making information publicly available, engaging in community outreach, and even taking steps to legalize migrants, there were more successful resilience outcomes.

Another feature of successful institutions and communities in building resilience is the capacity to adapt and display resourcefulness. The cases indicate that when governments and communities are willing to be creative in finding and adopting solutions, this can lead to enhanced climate change resilience.

Finally, decentralization is an important factor in creating opportunities for improved governance and resilience, but it is not without its shortcomings. In Indonesia, local government capacity to institute flexible and innovative policies stems from decentralization laws that localize decision-making. Decentralization allows for responsive policies as local leaders emerge who are able to use creative methods and better respond to popular needs. However, decentralization is not a finished process; different levels of government create the possibility of competing

30. Forsyth, Tim and Jessica Ayers (2009), "Community Based Adaptation to Climate Change: Strengthening Resilience through Development", *Environment* Vol 51, No 4, pages 22–31.

institutional agendas, overlapping jurisdictions, and thus a political impasse. Further research would be needed to determine whether or not these cases are emblematic of what is going on throughout Indonesia. It is unlikely that decentralization is occurring evenly throughout the country, but it is likely that local politics always affects the success of implementing policies that build resilience.

While an urban resilience framework can aid our understanding of what characteristics contribute to building resilience in urban areas in Indonesia, it is too early to determine whether such characteristics have been institutionalized or can be generalized for other cities beyond the cases cited above. This framework's emphasis on flexible and participatory approaches to policymaking, resourceful and responsive city governments, rather than those adopting top-down, one-size-fits all approaches, and the contributions of civil society actors, is well suited to Indonesia's current decentralized context.

It is less clear, however, how national-level government approaches to climate change hazards, such as the use of the military to respond to Jakarta's emergency flooding conditions, would fare in building local resilience, when considered through the lens of these characteristics. This would be an area for further research in order to strengthen our understanding of the socio-technical networks shaping resilient urban systems.

REFERENCES

- Allen, K (2003), "Vulnerability reduction and the community-based approach", in Mark Pelling (editor), *Natural Disasters and Development in a Globalizing World*, Routledge, London, pages 170–184.
- Aspinall, Edward and Greg Fealy (2003), "Introduction: Decentralisation, democratisation and the rise of the local," in Edward Aspinall and Greg Fealy (editors), *Local Power and Politics in Indonesia: Decentralisation and Democratisation*, Institute of Southeast Asian Studies, Singapore.
- Blaikie, P, T Cannon, I Davis and B Wisner (1994), *At Risk: Natural hazards, people's vulnerability and disasters*, Routledge, London.
- Brown, A, D Dayal and C Rumbatis del Rio (2012), "From practice to theory: emerging lessons from Asia for building urban climate change resilience", *Environment and Urbanization* Vol 24, No 2, pages 531–556.
- Campanella, T J (2006), "Urban resilience and the recovery of New Orleans", *Journal of the American Planning Association* Vol 72, No 2, pages 141–146.
- Da Silva, J, S Kernaghan and A Luque (2012), "A systems approach to meeting the challenges of urban climate change", *International Journal of Urban Sustainable Development* Vol 4, No 2.
- Firdaus, Huhammad (2009), *Analysis of the 2007 Flooding Damage in Surakarta*, Universitas Sebelas Maret.
- Forsyth, Tim and Jessica Ayers (2009), "Community Based Adaptation to Climate Change: Strengthening Resilience through Development", *Environment* Vol 51, No 4, pages 22–31.
- Government of Surakarta (2012), *Paparan Bantuan Relokasi Pasca Banjir tahun 2007 Sungai Bengawan Solo Kota Surakarta [Presentation on Post-Flooding Recovery Assistance 2007 on the Bengawan Solo River, Surakarta]*.
- Gutierrez, Catalina, Pierella Paci and Beom S Park (2010), "Understanding the Impact of Economic Shocks on Labor Market Outcomes in Developing Countries: An application to Indonesia and Mexico", World Bank Policy Research Working Paper 5283.
- Hardoy, Jorgelina and Regina Ruete (2013), "Incorporating climate change adaptation into planning for a liveable city in Rosario, Argentina", *Environment and Urbanization* Vol 25, No 2, pages 339–360.
- Intergovernmental Panel on Climate Change (2007), "Glossary", *Climate Change 2007: Synthesis Report*, available at https://www.ipcc.ch/publications_and_data/ar4/syr/en/annexes/glossary-r-z.html.
- Jarvie, Jim, Ratri Sutarto and Intan Asmara (2013), "Government and Business Should Join Hands to Combat Jakarta Woes", *The Jakarta Post*, 6 April,

- available at <http://www.thejakartapost.com/news/2013/04/06/govt-businesses-should-join-hands-combat-jakarta-flood-woes.html>.
- Majeed, Rushda (2014), *Defusing a Volatile City, Igniting Reforms: Joko Widodo and Surakarta, Indonesia, 2005 – 2011*, Princeton University Innovations for Successful Societies.
- Ministry of National Development Planning (Bappenas) (2012), *National Action Plan for Climate Change Adaptation*.
- Pearl, Harry (2014), "Eviction Effort by Basuki Leaves E. Jakarta Residents Resentful", *The Jakarta Globe*, 31 July, available at <http://thejakartaglobe.berita.satu.com/news/jakarta/eviction-effort-basuki-leaves-jakarta-residents-resentful>.
- Revi, A, D E Satterthwaite, F Aragón-Durand, J Corfee-Morlot, R B R Kiunsi, M Pelling, D C Roberts and W Solecki (2014), "Urban areas", in C B Field, V R Barros, D J Dokken, K J Mach, M D Mastrandrea, T E Bilir, M Chatterjee, K L Ebi, Y O Estrada, R C Genova, B Girma, E S Kissel, A N Levy, S MacCracken, P R Mastrandrea and L L White (editors), *Climate Change 2014: Impacts, Adaptation, and Vulnerability Part A: Global and Sectoral Aspects Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pages 535–612.
- Rulli Pratiwi Setiawan (2010), *Pengukuran Permukiman Liar di Stren Kali Jagir: Sebuah Tinjauan dari Sisi Hukum dan Humanisme [Eviction of squatters on Jagir River: a review from a legal and humanist perspective]*.
- Some, Wawan, Wardah Hafidz and Gabriela Sauter (2009), "Renovation not relocation: the work of Paguyuban Warga Strenkali (PWS) in Indonesia", *Environment and Urbanization* Vol 21, No 2, pages 463–475.
- Twigg, J (2007), "Characteristics of a Disaster-Resilience Community: A Guidance Note", DFID Disaster Risk Reduction Interagency Coordination Group, August.