

Asian Urbanization Futures: Nine Practitioner Recommendations¹

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Introduction

Much has been written about rapid urbanization in Asia by scholars, academics, and theorists, alongside volumes about how Asian cities are handling this unprecedented population surge. The majority of Asia's population, close to 2 billion, are now urban dwellers. But what is on the mind of local urban planners, mayors, and provincial leaders who must manage this challenge daily? To learn more about their realities, the U.S. Agency for International Development (USAID) partnered with UN-Habitat, UNDP and UN-Global Pulse to hold a two-day practitioner's workshop in Bangkok in late 2014. Local Asian experts voiced concerns about challenges in institutional capacity, governance, accountability, and local decision-making, but at the same time saw that tools like futures analysis, visualization, private-sector financing schemes, mobile devices, and data analytics hold great promise to build more resilient and sustainable cities. Effective technological solutions, quickly adopted and applied, can help Asian cities thrive.

Urbanization and Climate Change: Why Asia?

By 2025, nearly 2.5 billion Asians will live in cities, accounting for almost 54 percent of the world's urban population. Urbanization is one of the greatest challenges and one of the greatest opportunities facing Asia. Urbanization concentrates not just people and their assets,

but their demands; municipal governments face the daunting challenge of producing and equitably delivering a wide range of good and services to their residents, particularly the urban poor. Income inequalities and social exclusion, as well as ineffective governance frameworks, mean that the most vulnerable populations often do not have access to the basic services they need. Further, storms, floods, and other climate-related disasters all exacerbate existing stresses on infrastructure, supply chains, and communities. This nexus of factors – the growing economic prominence of Asia; rapid urbanization creating intense localized stresses on resources; high levels of inequality and the consequent presence of very vulnerable populations manifested as “slums” particularly in peri-urban areas; and the effect of climate change is exacerbating existing vulnerabilities. All this, occurring in a highly disaster prone region, makes the sustainable development of urban Asia critically important.

Workshop Goals

The Workshop had four goals. The first was to listen, absorb, and reflect on how bi- and multi-lateral donor organizations like USAID, UN-Habitat, and UNDP could further collaborate to provide demand-driven support to local urban practitioners throughout Asia. The second goal was to highlight some of the latest futures analysis approaches that could be applied in an urban planning context. Next, the workshop planning team sought to strengthen linkages among practitioners by showcasing local best practices and recognizing awardees² of the Urban Resilience Competition -- designed to share innovative home-grown approaches to build Asian urban resilience. The competition is discussed in more detail later. The final goal was to bring together a broad range of stakeholders, partners and service providers (private sector, foundations, development labs, universities, and futurists) who might not otherwise see a common, reciprocal, and synergetic way ahead to address persistent and emerging urban challenges together.

Why A Practitioner Outlook?

Much has been written about rapid urbanization in Asia by scholars, academics, and theorists. Companion volumes have also been released about how Asian cities are trying to manage this unprecedented population surge. However, nothing in Asia’s past, nor among that of Western countries, has adequately prepared local governments and city planners for the speed, scale and complexity of urbanization in this region (Dahiya, 2012, 2014). As a consequence, city dwellers face profound challenges in accessing basic needs and services such as jobs (livelihoods), infrastructure, housing, and transportation along with electricity/water provision, health/education opportunities, food security, and local governance. The workshop was centered on practitioner’s experiences and viewpoints. In the end, these practitioners together with policy makers, will be the ones to make the fundamental and lasting changes needed to make existing and future cities more productive, safe, inclusive, sustainable and prosperous. They will also be the ones to make cities a welcome location for all inhabitants -- including the poor, women, marginalized, and those with disabilities – and it is critical that their voices be heard.

Workshop Participants

With those challenges and opportunities in mind, the workshop brought together urban practitioners from nearly a dozen countries in Asia, including city planning specialists, municipal mayors, national, provincial and district officials, architects, policy advisors, environmentalists, and futurists. A diverse group of approximately 100 people attended the two-day, Bangkok-based workshop including elected municipal officials, civil society organizations, the private sector (e.g., Swiss Re and Microsoft), foundations with regional expertise (e.g., The Rockefeller Foundation), academic institutions, (e.g., Chulalongkorn and Singapore Universities), public service think tanks such as UNDP's Global Center for Public Service Excellence, futurist groups (Pardee Center at Denver University, Zeroth Labs, and Futurescaper LLC) along with the Washington-based USAID Futures Team, USAID Missions across Asia, and UN partners.

Workshop Sponsors

USAID, UN-Habitat, UNDP and UN Global Pulse were *natural allies* to join together to achieve the workshop's four goals. All were uniquely positioned to engage Asian urban planners, city mayors, and provincial leaders to get their first-hand experiences and to ignite productive dialogue. Each organization has been actively exploring practical solutions to address the nexus of urbanization and climate change-related stresses in Asia for some time. For example, USAID's Regional Development Mission Asia (RDMA), located in Bangkok, works to expand opportunities for cooperative problems solving among Asian countries, especially challenges that cross national boundaries. The U.S. Global Development Lab, within USAID Washington, houses the Agency's new *data analytics team*, which is heavily focused on futures analysis applications. UN-Habitat -- a mandated UN agency promoting socially and environmentally sustainable cities and human settlements throughout Asia -- is known for its highly regarded flagship reports and its Global Urban Economic Dialogue Series (UN-Habitat, 2011). UNDP's Bangkok hub continues a decades-long mission to reach out to the Asian community to build lasting partnerships, widely share applied knowledge, and promote regional capacity-building initiatives. Finally, UN Global Pulse Jakarta, is a leader in Southeast Asia in actively engaging government and non-government players to explore the power of cutting edge digital and real-time analysis techniques to improve planning. It didn't hurt, of course, that Jakarta is a megacity -- and reported to be the most Internet-connected one in the region, possibly in the entire world³.

Futures Analysis Focus

From workshop inception, futures analysis was seen as a valuable tool that could be utilized by city planners and other local practitioners -- architects, managers, engineers, and program designers -- to generate a more solid *evidence-base* for decision-making, enabling them to more successfully grapple with high-stakes urban challenges. Use of futures analysis techniques such as scenario planning, strategic foresight, and horizon scanning could enable local institutions to better address not only today's mounting urban challenges, but trends 5, 10, and 15 years out.

Increasingly, futures analysis -- long the domain of the private sector and the

military -- is being harnessed for development (Gale and Jackson, 2014). Workshop partners sought to build on the growing momentum to use futures analysis for development by scheduling an entire workshop afternoon to explore traditional trend analysis and forecasting (Herr and Schneiderman, 2012; Gale, 2014), the latest crowd-sourced and participatory futures approaches (Radford, 2014), and cutting edge methods that blend anthropology, data, locality, and design to understand complex urban drivers. The focus on futures analysis was both an acknowledgment of the mounting significance of understanding global trends for development (National Intelligence Council, 2012) and recognition that city future planning was emerging as a discipline in its own right (Cruz and Villanueva, 2014).

Through the workshop sessions, event organizers sought to empower city officials by sharing with them several approaches to provide data and analysis in order to inform local urban policies, initiate and phase-in needed urban activities, and to develop over-the-horizon strategies that could serve as blueprints for tracking trends and securing much needed country-level funding. Similarly, we sought to introduce urban planners to a suite of futures tools that could enhance planning and decision-making, not to conduct detailed analyses, or claim superiority for one approach over another.

Four different futures tools were presented: international trend-driven futures analysis by the University of Denver, the crowd-sourced approach of Futurescaper, big data analytics by UN Global Pulse, and a community-based approach favored by Zeroth Lab. The nature of the data - including the extent to which the data was quantitative, qualitative, or a mix of the two, as well data size and complexity, drove the analyses. As a futures “analytic tool suite”, these four approaches collectively helped planners more systematically consider upcoming certainties and uncertainties challenging their communities.

A strength of the *international futures approach* was the use of large global datasets, often multi-year, which allowed practitioners to look at single or multiple trends over time, to better understand patterns, and to see emerging relationships. This approach, it was noted, is heavily reliant on dataset quality and on consistency in how international partners collect and assemble data. Appropriate datasets to utilize an international futures approach do not always exist, though when they do, it was agreed that this can be a very powerful approach.

Like international futures, the *big data approach* also draws on existing datasets, but from a more diverse set of collection platform to include social media, remote sensing devices, and wireless sensor networks. Big data are inherently larger, more complex, and less conventionally structured than data typically used in the international futures approach. The growing availability of big data however, makes this approach analytically attractive. At the same time, these data are also essentially opportunistic, and the population for which the data exists may not be representative of the population as a whole. Though as technology increasingly permeates all aspects of our modern life, this bias may be reduced. An additional issue around which there was vibrant discussion was that of privacy, and how to balance rights of citizens with public good.

In contrast to these two approaches, *Futurescaper's crowd-sourced* and *Zeroth Lab's community approach* to futures analysis share a participatory focus. This too may introduce selection bias it was pointed out. Futurescaper, an online platform for crowdsourcing data, seeks to understand how trends -- and drivers of trends

-- are perceived by stakeholders. One strengths of this online approach is that it can be implemented quite quickly and cheaply, and in principle, can gather input from a large number of people. Limitations of the analysis depend on how the data collection is structured -- for instance a Futurescaper survey can be targeted towards a group of known experts or can be made fully open.

Finally, the Zeroth Lab approach focused on understanding decision-making in small communities (~100 people). In the study presented at the workshop, interview data from community residents were used to developed a systems-map to understand decision pathways. They then facilitated a community process to design solutions to identified challenges. Of the four approaches considered, this one provided the highest level of textured detail about a particular system. However, to be successful this approach requires a willing community of a manageable size and complexity. Additionally, results from a single such community-focused analysis would not be easily generalizable elsewhere.

Workshop participants eagerly welcomed the diversity of approaches and no one single tool emerged as the “gold standard” for futures analysis nor did any approach generate a preferred scenario. Rather, participants saw value in each approach, depending on the current planning challenges they faced, available lead-time for analysis, and funding level to support the analysis. Planners were encouraged to understand and experiment with a variety of methodologies to find what works best in their context.

Showcasing Innovative Solutions

The primary workshop objective -- to focus on the region’s growing vulnerability and urban risks -- the *Urban Resilience Competition* was designed to showcase new and innovative work already being undertaken in the field of urban resilience that offers transformative solutions; combines multi-disciplinary perspectives; and builds partnerships in a bottom-up participatory manner of design and implementation. Three winning projects, the International Centre for Environmental Management (ICEM), Solo Kota Kita, and Mahila Housing DEWA Trust, are each briefly described below. Collectively they show how to tackle critical issues facing urban Asia, such as disaster vulnerability, poor infrastructure, inadequate urban planning, and water and sanitation delivery shortfalls.

ICEM’s “*Green Infrastructure as a Foundation for Resilience in Mekong Towns*,” engages key stakeholders in rapidly urbanizing towns in Cambodia, Laos and Vietnam. The project informs community members of the impacts of climate change and the need for adaptation. It promotes clean, resilient development in order to reshape urban infrastructure. This work underscores the necessity of integrating future climate scenarios into current urban infrastructure planning, and demonstrates the value of green infrastructure to create healthier and more resilient urban environments. The town technical core groups, established through this project, also illustrate the importance of harnessing local creativity and knowledge to help shape locally relevant and sustainable solutions.

Solo Kota Kita’s “*Vulnerability Reduction through Participatory Design of the Public Realm in Indonesia*” aims to reduce water-related vulnerability in riverfront settlements in Banjarmasin, Indonesia. The project works both at the community level to raise awareness on water-related health and safety problems and, at the local government level, to encourage city planners to incorporate public input into their

development strategies. This project illustrates the importance of *simultaneously addressing* multiple dimensions of sustainability. The activities enhanced through project-created public space, were designed to augment economic opportunities, which in turn are incentives to maintain the space and generate additional social, health, and environmental benefits.

Mahila Housing DEWA Trust's program, "*Building the Capacities of Slum Women to use Global Positioning Systems (GPS) for Democratic Urban Planning Systems*," is based in Ahmedabad, Gujarat, India and works to improve city services like sanitation, storm water drainage and water supply. The project trains women to use GPS technology to identify service coverage gaps and report problems. By using GPS technology to track services, vulnerable community members in urban slums have direct, scientific and verifiable input into the city development and planning process. Putting GPS-technology directly in the hands of women empowers them, and is an efficient means of gathering on-the-ground data to improve the management and operations of urban services.

These innovative projects – as well as others highlighted at the workshop – demonstrate that importance of directly engaging with those whose lives and livelihoods are impacted in charting a sustainable path forward.

Conclusions

The authors are immensely thankful to event practitioners who found the time to join us and incalculably indebted to them for sharing their wisdom and insights. A general consensus about the pressing issues facing an urbanizing Asia -- and several proactive recommendations -- emerged across a broad range of topics by the close of Day 2. This "sense of the community" around *nine crucial issues* was a remarkable outcome in light of the diverse range of participant's experience, varied organization affiliations, and distinctive geographies.

Planning Now is Vital and Urgent for Asian City Success

Cities have been the epicenter of development and economic growth historically (UN-Habitat, 2011). Yet, there was a clear workshop consensus that past history was no guarantee that tomorrow's Asian cities will thrive economically. Opportunities for better urban outcomes must be seized now and urgently, local practitioners reiterated throughout both workshop days. It was pointed out that more than half of the land areas that will become major cities have not yet been built, so there is still ample time for better urban planning. Cities must plan for their future and not postpone it, as the pace of Asia urbanization is unheralded (Dahiya, 2012). Participants were not unmindful that up-front urban planning costs can be substantial. But at the same time, participants consistently made the case that planning ahead of the urban surge is ultimately less costly, less disruptive, and yields better individual and community outcomes. Retrofitting cities later, to accommodate the influx of residents, was seen as extremely costly and risky, but in some cases inevitable.

Under-Appreciated Urban Demographic

It was agreed that aging city populations will exacerbate today's urban challenges in Asia. Belinda Yeun, from the Lee Kuan Yew Center for Innovative

Cities, discussed the growing and mostly underappreciated “aging trend” in some parts of Asia with 60% of people living 60 years or longer -- compared to just 25% globally. Fifty-three percent of the Asian population, she noted, already resides in cities compared with 60% worldwide, but the gap is lessening. The workshop consensus was that aging is already creating enormous pressure on demand for -- and access to -- infrastructure, housing, jobs, and energy. Older city dwellers will have specialized access needs including transportation and health. None of these age-related challenges are being adequately addressed today in most Asian cities. Moving towards compact cities provides opportunities and solutions for these groups -- but they must be seized. The needs of a “greying or silver urban population” in Asian cities are critical and should be on the drawing boards of today’s urban planners.

Increasing Focus on Resilience

Building Asian cities without a focus on weather and climate change patterns -- along with other urban shocks and stresses -- will dramatically undercut long-term urban prosperity and security. Over 50% of the cities in this region are located along coastal areas or beside rivers. While the concept of resilience⁴ is not entirely new, there was overall agreement that a city’s ability to withstand climate and other shocks is integral to its ability to thrive and prosper. The devastation from the 2011 Bangkok floods was cited as recent proof of the link between weather and severe economic and social consequences (Nair, Wen, and Ling, 2014). Risk mitigation and risk coping strategies were discussed and data presented to show that nine of the top 10 most at-risk countries in terms of flooding are in Asia. Cities unprepared for climate change and other non-avoidable shocks and stresses, it was pointed out, place their citizens and their future livelihoods at extraordinary risk. As cities become larger, populations and productive assets become more concentrated, and the consensus among urban researchers is that risk exposure rises dramatically. Worse yet, participants noted, the most risk-prone vulnerable areas of cities are often settled by those with the least capacity to rebuild (i.e., the urban poor and marginalized groups).

Strengthening Local Institutions Remains Key

There was unanimous agreement that local institutions are key for addressing the majority of challenges posed by urbanization and climate change in Asia. Only a relatively small number of Asian cities however are able to effectively plan, finance, coordinate and develop appropriate urban strategies because, we were told, the trained people and skills needed are not sufficient. Adequately funding local institutions remains a chronic and pervasive problem. Local level organizations need to link people, governance, and the latest innovations while sharing practical knowledge and experience (UN-Habitat, 2012). To succeed, practitioners told us that urban strategies must be highly attuned to the social realities of their local communities. A number of workshop presentations highlighted the importance of developing a shared vision for solving urban problems among all stakeholders. However, this shared planning was rarely achieved.

Asia’s Farming and Rural Future Remain Unclear

Rural and urban areas have long shared a symbiotic relationship (Tacoli, 2003).

In Asia, the future of farming, the preservation of rural and natural ecosystems, and other reciprocal rural-urban issues are increasingly being put to the test in order to feed growing cities. Participants noted that rural-to-urban migration continues to create enormous economic, environmental, and social upheaval in the countryside and peri-urban areas. In most Asian countries land reform, it was pointed out, has been sluggish and land fragmentation remains generally high (Niroula and Thapa, 2005). The consensus was that the future of traditional farming in Asia still remains unclear and city planners will need a better handle on how urban food needs will be met and price stability maintained. Sustainable land-use management will require a balance which maximizes the density of the urban area while retaining the surrounding agricultural areas' ecosystems.

Urbanization of Poverty Grows: An Urban Divide

By far, the urbanization of poverty received the liveliest discussion at the workshop. Slums or informal settlements -- where one or a group of urban individuals live under the same roof but lack adequate living areas, access to water/sanitation services, or secure land tenure -- have persisted ever since cities existed. But, the speed of Asian urbanization is exceptional, leading to growing slums in many cities -- now estimated at over 500 million dwellers (UN-ESCAP, 2013). A number of factors contribute to the slum growth, it was pointed out, including resident's low incomes, affordable housing shortages, high-priced goods, and recurring rural migration -- along with a high concentration of marginalized people. The Asian slum population overall continues to rise. To address this problem, there was general agreement that steps need to be taken by municipal leaders to bring basic services across all sectors to the urban poor employing their active engagement at every step. Solutions to improve and upgrade existing urban slums -- and prevent new ones from forming -- must address land tenure and access, governance, community infrastructure, and reclassification and re-zoning as needed.

New Citizen-Based Tools Hold Promise

A number of workshop presentations spoke about the growing use of affordable information and communications-focused tools that could improve the lives of urban dwellers. Sensors to monitor water, sanitation, and electricity, along with real-time information on traffic flows and smog alerts from cell phones could all play a vital role to enhance the livability of expanding cities. Participants and workshop presenters alike noted that the rapid adoption and use of mobile devices, social media, and other technological innovations have great potential to bring about systemic changes in urban service delivery and in local governance. It was agreed that such technologies can empower even the smallest communities to swiftly communicate their needs to governments and to better hold officials accountable. These tools also present attractive incentives for governments by enabling scarce urban resources to be focused where they are most needed. At the same time, however, considerable caution was voiced that simply garnering citizen input through mobile phones or sensors on urban-related issues does not mean such feedback will be utilized. Yes, these tools create more opportunities for citizen engagement and allow for a greater degree of transparency participants said, but only if local governments value the feedback and take positive action.

More Private Sector Engagement Needed

The workshop welcomed private-sector presentations on innovative insurance and non-insurance schemes to manage weather-induced risks (UN-FCCC, 2008) and the latest technology-based megatrends to support city governments. This ranged from logistics planning, to pandemic tracking, to crime prevention, to employment analysis. The presentations and ensuing discussions focused on a range of pioneering insurance schemes that are already providing cost-effective ways to cope with the devastating financial impacts of many climate change events. This includes improved risk estimation and spreading out risk among the public and private sector. Working with the private sector to categorize and estimate major urban risks also shows promise. Beyond insurance, a number of lessons were shared on how cities are expanding the suite of information-centric tools to help plan for and cope with growing urban stresses. The presentations also touched briefly on the latest “smart city” technologies. Future cities stand to profit from private sector expertise in data sharing, sensor development, and other digital technology. Yet, the practitioner consensus was that private sector engagement was still under-valued and under-utilized in Asian urban planning circles. And the modest engagement to date, has mainly focused on established -- but still growing -- larger cities like Beijing and Jakarta. To be successful, it was pointed out that the private sector must be recognized as an important partner and must, in turn, be willing to participate early on.

Scaling up Required

Practitioners were eager to share their individual success stories formally at presentations and throughout the planned workshop networking opportunities. What emerged was a growing sense of accomplishment but at the same time, concerns surfaced as to how best to scale up efforts in the region. There was widespread agreement that widening the circle of Asian cities using the core set of practices discussed over the 2-day event was vital. A number of well-established non-profit consortia and foundations (e.g., Rockefeller Foundation, 2015) are successfully working with Asian cities to help them develop and implement climate change resilience strategies, strengthen urban governance, and take the longer view to address urban problems. And, a surprising number of Asian cities, though mostly in well-developed countries, are successfully undertaking efforts on their own. Yet the reality remains that too many Asian cities, according to participants, still remain focused on today’s demanding challenges and lack the capacity and support to plan for the future.

Next Steps

This workshop was intended as a *call to action*. Three major areas around which actions are needed are (i.) piloting and evaluating innovative approaches to building resilience, including the use of futures analysis; (ii.) facilitating knowledge sharing and learning among cities to accelerate change; and (iii.) improving access to innovative forms of finance, from both private and public sources, which will ultimately be critical for implementing many resilience approaches at scale.

To capitalize on the engagement and ideas generated at the workshop, UNDP announced that they would be initiating a *Prototyping Prize* in 2015 to support the application of futures analysis tools to urban problems in Asia. Working with the

futures thinkers who participated in this event, UNDP's Bangkok Hub will support the transformation of promising ideas into functional prototypes, and will work with prize winners to scale up their prototypes for wider application across the region. UNDP will also continue to support resilience and urban poverty alleviation programs region wide, working with partner governments and local NGOs.

Event recommendations will also inform further thinking about the *Global Resilience Partnership*, supported by USAID, the Rockefeller Foundation, and the Swedish Development Cooperation Agency. This is a new model that seeks to solve today's complex and interrelated resilience challenges by better aligning humanitarian and development planning; developing new models for accessing, and integrating, and using data and information; advancing evidence-based tools and approaches to help prioritize and scale up the most promising resilience investment and innovations; and connecting civil society and governments with private sector resources and expertise.

The *Global Resilience Challenge*, part of the Global Resilience Partnership, is a multi-phase resilience design challenge, focused on bringing together people and organizations from across sectors to collaborate on bold and innovative solutions to the toughest resilience challenges in the South and Southeast Asia, the Horn of Africa, and the Sahel. The Challenge is a catalyst for multi-sectoral teams to collectively research and diagnose problems, and develop locally driven high-impact solutions that can build resilience at scale.

On the policy front, a number of excellent ideas generated by the event will contribute to the thinking and preparation already underway to support Habitat III -- *The Third UN Conference on Housing and Sustainable Urban Development* -- to be held in Quito in 2016. Those ideas will also help UN-Habitat provide needed technical assistance and policy support to national and local governments to help them meet and monitor progress towards achieving urban development goals.

Insights from the workshop will instruct USAID's regional activities in support of urban resilience aimed, in large part, at helping cities access financing and improve city wide and sectoral planning processes, including the application of data and analytics. USAID continues to support the *Urban Climate Change Resilience Trust Fund (UCCRTF)* in partnership with the Asian Development Bank, Rockefeller Foundation, and UK's Department for International Development. This Fund is aimed at supporting city-level engagement to build resilience to the effects of climate variability and climate change within medium-sized cities in Asia. Finally, workshop ideas will provide insights for *USAID Asia-Pacific Project (ADAPT Asia-Pacific)*, which provides technical assistance and capacity building support as well as networking opportunities for countries to access funding for climate change adaptation projects, including those in the urban sphere.

While all of these are important next steps, there is still much more to be done. We hope that all of the organizations and individuals who participated in the Urban Futures Workshop are moving forward with new and reinvigorated actions and collaborations to help build a sustainable and prosperous future for urban Asia. Success will ultimately depend on our collective and timely action.

One Final Thought

The UN, governments, and many aid organizations have made extreme poverty eradication the greatest global development challenge facing the world today. As

the Post-2015 Sustainable Development Goals take shape, there is already a solid commitment by the UN Open Working Group to tackle the challenges facing today's cities and human settlements (i.e., SDG Goal 11). That will be no small feat by 2030. Gaps range widely from the provision of safe and affordable housing and basic services, to providing convenient and reasonably-priced transportation, to strengthening links between urban, peri-urban and rural areas, and to establishing national urban policies and plans to mitigate and adapt to climate change. Workshops like this one are pivotal to hear, and share first-hand information, with those who will be asked to fill those gaps and who strive day-in and day-out to advance urban planning locally.

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Notes

- 1 The views expressed are those of the authors and not necessarily those of their organizations.
- 2 Dharmistha Chauhan from the Mahila (India) Housing DEWA Trust; Michael Haggerty from the Harvard University Graduate School of Design, and Jeremy Carew-Reid from the International Centre for Environment Management.
- 3 Estimates indicate there are now over 74 million internet users in Indonesia, with numbers forecasted to reach at least 100 million in 2015.
- 4 USAID defines resilience as “the ability of people, households, communities, countries and systems to mitigate, adapt to, and recover from shocks and stresses in a manner that reduces chronic vulnerability and facilitates inclusive growth.

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