World Vision®

CITIES PREPARE!

REDUCING VULNERABILITIES FOR THE URBAN POOR

ASIA PACIFIC
DISASTER REPORT

Front cover: These two boys living in a Dhaka city slum represent the face of urban poverty for children in Asia. Both boys are malnourished and often fall sick. Their father left long ago. Now their elderly grandmother cares for them during the day while their mother works in a garment factory.

Rear cover: Children have fun at a World Vision Child Friendly Space set up in response to the Thailand floods, 2010. Safe and stimulating spaces for learning and playing, these are an important part of World Vision's child-centred disaster preparedness planning.

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World Vision is a Christian humanitarian organisation dedicated to working with children, families and communities to overcome poverty and injustice. Motivated by our Christian faith, World Vision is dedicated to working with the world's most vulnerable people. World Vision serves all people regardless of religion, race ethnicity or gender.

Table of contents

Act now for future resilience

A foreword by Laurence Gray,

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Cities Prepare! is a call to leaders to recognise and act on the dangers facing people living on the margins in urban centres across Asia. It follows on World Vision's first Asia Pacific Disaster Report, prompted by the tragedy of the Asia Tsunami that claimed the lives of tens of thousands in low-lying areas in December 2004. Planet Prepare! gave voice and focus to the dangers of extreme weather linked to climate change at a time when the world's leaders gathered in Copenhagen to discuss the impacts of climate change[1].

Cities Prepare! is written at a time of further international negotiation as 2015 will mark the end of two significant international frameworks: the Millennium Development Goals (MDGs) and the Hyogo Framework for Action (HFA). Debate is underway on what should take their place. Global frameworks offer mechanisms which can translate into practical change if applied. This report will not debate the merits of each, but it will underscore the need for decision makers to acknowledge urban hazards and reduce urban risk.

World Vision believes that building a safe environment shows commitment to future generations, and implementing agreed policy by government[2] pays off in practice for the current generation. Resilience reduces loss of life and livelihoods. In 2011 80% of the global disaster-related economic losses occurred in the Asia Pacific region. Over a ten-year period UN ESCAP estimated this to total US$60 billion[3]. Decision makers must act to reduce risks at an early stage rather than incorporate change once a disaster has left its mark. The city, often a symbol of power and prestige, risks being upstaged by pressing human need – quite literally, as populations are bulging at the seams – pushing the limits of city governments to provide services and meet needs. Urban disasters are complex. The social and economic cost of disaster is growing; giving rise to perceptions that inequity experienced by the poor cannot be changed. Opportunities to move from indifference to action are lost.

Difficult choices on resources such as land use, water and sanitation need to be made. Green investment and inclusive cities can be planned and some model settlements[4] are showing how. The need for local government and community involvement, engagement between local authorities, business, and civil society must become the priority moving forward. The need for local involvement of communities and individuals, engagement with the business sector and civil society has to be priority in all contexts. In addition to their own swelling populations in Asia, an estimated 44 million people move to cities every year. According to the UN Population Division, the urban population is expected to increase by 3.1 billion additional urban dwellers by 2050, including 1.8 billion in Asia[5]. An estimated USD 8 trillion investment for urban infrastructure is needed over the next decade[6] The Asia Development Bank estimates poverty and social exclusion in South Asia alone sees 35% of the urban population – 190.7 million people – currently living in slums and squatter settlements, the highest proportion in the Asia region.

World Vision sees the impact of poorly planned settlements and marginalisation in the lives of children and their families. They represent a generation of promise, grappling with risks that can be countered. Poverty is about the gap between choice and dependency between the empowered and powerless. This inequity visible in urban environments should be addressed not only to reduce poverty and risk but also as an investment in the social values reflected in constitutions, conventions and faiths.

World Vision's position on child-focused disaster risk reduction

A statement issued to the Global Platform for Disaster Risk Reduction, Fourth Session, Geneva, Switzerland, 2013

World Vision recognises the strength of the Hyogo Framework for Action (HFA) and its five pillars clarifying what needs to be done to reduce disaster risk and the significant progress made to date in implementing the framework across countries and regions. With only 2 years left to implement the HFA and looking forward at a post-2015 disaster risk reduction framework, we urge governments, NGOs and private sector companies to bring a new focus on *how* to integrate disaster risk reduction into development processes to address underlying drivers of disaster risk. Together we can transform the systems and relations that keep vulnerable people at risk from the devastation of disasters.

Children are particularly vulnerable to disasters; according to WHO, 30% to 50% of fatalities in natural disasters are children. Because of this, children need to be protected before, during and after a disaster, and DRR interventions need to be designed to take children's needs into account. With access to knowledge and skills development, children can contribute to DRR and build the resilience of their communities.

Through World Vision's extensive experience working with vulnerable children and communities around the world we know that:

- Long-term engagement with communities increases trust and accountability in development planning and implementation.
- Children's resilience to disasters is built through an integrated approach to risk reduction education and learning at school and at home.
- Vulnerable communities see risks in a completely integrated way. Whether social or natural, all hazards have the ability to interrupt life and undermine the safety and security of people, their families and their livelihoods.
- Participatory methodologies such as community driven vulnerability and capacity assessments are ensuring delivery of services at the local level.
- Collaborative partnerships with local government and other service providers create a pragmatic platform for integrated risk reduction planning at a local level

With little progress on Pillar Four on Drivers of Risk as well as the missing link of engaging sub-national level government in disaster risk reduction, we see long-term engagement and accountability models through partnerships at the local level as crucial to integrating disaster risk reduction into development plans.

World Vision's work with more than 100 million people in the communities we support demonstrates that by adopting long-term relationships with communities and participatory methodologies, the voices and energy of citizens can influence duty bearers though constructive dialogue for safer and more resilient livelihoods. Building on local knowledge and working together over the long-term, even the poorest communities are able to increase their resilience to changing hazards and transform the relations that keep them insecure.

Children's schoolbooks lie amongst the debris after flooding in Assam, India, 2012.

Based on this experience, World Vision calls for the Post-HFA framework to:

1) Promote specific initiatives that build the disaster resilience of children through a comprehensive approach to risk reduction education, school disaster management systems and safe school facilities and environment.

2) Concentrate more on the How to (and less on the Why and What) by supporting accountability measures that give voice and ownership to vulnerable people such as joint vulnerability and capacity assessments with plans that are implemented through collaborative partnerships at a local level.

3) Expand the scope of hazards to incorporate the impacts of climate change, conflict and other situations of violence in both rural and urban contexts.

4) Promote concrete changes in the Post HFA National reporting mechanisms that include peer-reviews and citizen round tables to enhance accountability and local ownership.

5) Develop a set of indicators that address HFA Priority 4 focussing on the reduction of underlying risk factors. This would include an explicit focus on:

a. Impact of disasters on education;

b. Community participation in DRR including participation of girls and boys;

c. The rights of children to protection from the effects of disasters.

Cities Prepare! Executive summary

- **More than 80% of people affected by disasters 1999-2009 were living in the Asia Pacific region[7]**
- **By 2030 urban populations will represent between 55% and 60% of the total in the Asia Pacific region[8]**
- **The rapidly changing urban context in the region is not being matched by planning, legislation and research to mitigate the impact of future disasters**

At the heart of this report, and at the heart of any discussion or commitment between government emergency services, NGOs and communities, is a simple premise: disaster risk reduction saves lives. Yet despite many national and international agreements to invest in strengthened disaster resilience, the gaps in resilience planning for cities are vast. Unless urgent action is taken to protect urban environments from the impact of disasters, millions of lives and the prosperity of entire nations remain at risk.

Cities Prepare! considers disaster risk reduction from an urban perspective, with a focus on the cities of the Asia Pacific region. It concludes that risk reduction policies and priorities differ not just between nations but also between cities of a single nation, or neighbourhoods of a single city. Very little can be done to reduce the likelihood of disaster, particularly the massive natural disasters to which the region is prone. Instead, taking action to reduce or remove the vulnerability of people, their settlements and their livelihoods to these disasters will result in resilient and prepared communities.

Though all nations recognise this, they have introduced policies and systems with varying degrees of effectiveness. Their efforts are often linked to the economic status of the city and of its people, meaning that the poorest and most under-serviced communities continue to be most at risk from the impact of a disaster.

Hazard plus vulnerability = Risk

Low hazard, low vulnerability = low risk

High hazard, low vulnerability = reduced risk

High hazard, high vulnerability = maximum risk

The costs of disasters in these communities are not just economic. Children are more vulnerable than any other group to harm in a disaster, whether in the initial impact, resulting hazards such as flooding, exposure or disease, or in their attempts to explore and understand a changed and damaged social environment. To lose a child is heartbreaking for any family, but the long-term effects on children who survive must also be recognised – months away from school, the trauma of displacement, or pressure to contribute financially at a young age.

Children have a role to play in disaster risk reduction. Children of all ages bring a different perspective to recognising risk and proposing solutions, to protect themselves, their siblings and their friends. Particularly in developing nations, their inclusion in discussions and planning around hazards, warning and evacuation will save lives. Cities Prepare! contains several stories from children and young people who have been affected by disaster, climate change or social risk, including:

- Dijan, 14, a schoolboy in Kathmandu who knows his house will not survive a severe earthquake
- Noriel, 8, a survivor of flash flooding in Davao City, who could not recognise her house when the family returned
- Albert, 25, a youth volunteer in Port Moresby's crime-ridden district of 8 Mile
- Khokon, 9, whose father saved many lives in a slum fire in Kolkata

Many solutions for disaster risk reduction are simple and cost-effective. Nations have signed on to the importance of increasing resilience and preparation through 2005's Hyogo Framework for Action. Yet despite this, hundreds of millions of children are living at risk of displacement, injury or death in the Asia Pacific region. Hyogo's mid-term review found that the framework's number one priority, empowering local decision making on disaster risk reduction, continued to be the core obstacle for many nations. This is particularly important for urban hubs where massive changes are taking place in terms of size, needs, resources and power structures for citizens.

World Vision has been at the forefront of disaster response in the Asia Pacific region for decades, and is one of several agencies leading the way on instilling preparation and risk reduction rather than response as principles for disaster practitioners. World Vision believes that government, non-government organisations and community groups all have a role to play in creating resilience to disasters, and the best solutions are those devised and delivered locally.

Releasing this report in 2013 is no coincidence. International and regional policies on DRR have never been stronger. Children have released their own demands for child friendly cities, child-focused disaster resilience and a Hyogo Framework for children. The UN MDGs and the Hyogo Framework for Action are to be renewed in 2015, giving a window of opportunity to recognise municipal accountabilities and the rights and values of urban citizens within development goals. This report concludes that the time is right for urban authorities, civil society organisations, local and international NGOs and regional bodies to take up the challenge of Asia Pacific disaster resilience – one city at a time.

Part 1 of this report provides a situation summary of the region's urban children, the factors contributing to their risk, and the ways in which they are participating in their own risk reduction.

Part 2 considers case studies from seven Asian cities in terms of "child friendly cities" and child-focused disaster risk reduction. The cities were chosen as case studies to show a broad spectrum of experiences and challenges, including:

- sub-region (South Asia/South East Asia/Pacific)
- size (1.5 million through to two of Asia's largest megacities)
- wealth discrepancy.

All of them continue to grow, and all house a substantial proportion of their population in under-resourced slum settlements.

Recommendations for governments in Part 3 of this report take into consideration the common gaps and barriers from the case studies above. Many of them are likely to be holding back effective community-based resilience in other urban environments. Recommendations also take into account the agreed goals of the Hyogo Framework for Action and highlight the important linkages between poverty resilience and disaster resilience.

Recommendations for governments

To build sustainable, resilient cities that protect the children of the Asia Pacific region from the impact of disaster, World Vision recommends:

- **Partner through frameworks and networks;** connect effectively with national/international expertise and resources to share the planning and financial burden short-term
- **Consult children;** take policy steps to ensure that children are meaningfully included as stakeholders, advisors and campaigners on local safety issues
- **Call for CSR:** corporate community partnerships that will reduce the negative impact of industry and strengthen local communities
- **Integrate policies;** mainstream disaster risk reduction as a standard community service in local and municipal strategies
- **Invest in communities:** through school and other social structures to strengthen community-led disaster management, risk assessment, first aid, evacuation and mitigation infrastructure
- **Research and report;** in a rapidly changing world, ensure that the hazards are understood, and further increase the body of knowledge on child friendly, safe cities
- **Anticipate accountabilities;** strengthen and align local governance with national accountabilities to reach the most vulnerable

Urban Case Studies

Cities Prepare! examines seven cities of the Asia Pacific region as case studies in disaster vulnerability. The cities were chosen to represent the diversity of the region. Each is unique in its history, its cultural mix, its governance, prosperity, opportunity and poverty. Thus, while many face very similar hazards, the risks and vulnerabilities are markedly different. In each example, progress and solutions are largely in the hands of local government and the communities they represent, who must find ways to move quickly in protecting their cities from the next disaster.

Kathmandu, Nepal – ready for the next earthquake?

The population of the Kathmandu Valley has grown by 500% in the last 50 years with little corresponding investment in planning, services and building codes. The next earthquake is considered not only inevitable but overdue, and likely to have significantly more impact than its predecessors due to population density.

Davao, the Philippines – ready for the next flash flood?

With the smallest population and the largest land size in this study, Davao is considered one of the Philippines' most liveable cities. As such it falls outside the high priority actions of national or provincial government for disaster preparation and early warning. When a flash flood burst river banks in 2011, it took the city by surprise, with devastating results for some of the city's poorest.

Chittagong, Bangladesh – ready for the next landslide?

A secondary city of increasing economic importance, Chittagong continues to prosper and is receiving a makeover to ensure good accessibility via road and sea for trade. At the same time, decades of land clearing on its outskirts have contributed to the regularity and severity of landslides, burying homes and taking lives with little warning.

Port Moresby, Papua New Guinea – ready for greater urban safety?

Papua New Guinea has one of the most rapid rates of urbanisation in the region, placing its already challenged capital city under extreme social stress. Paths to safety and social resilience must be found if the city and its children are to be protected from the effects of violence and fear.

Bangkok, Thailand – ready for the next flood?

The fortunes of Thailand rest largely on the economic stability of its capital, and the floods of 2011 set the nation back an estimated $45.7 billion. This disaster may have been reduced, or its impact mitigated, by collaborative planning between rural and urban counterparts on flood management and disaster risk reduction.

Kolkata, India – ready to mitigate environmental degradation?

Kolkata is home to some of the oldest and most notorious slum communities worldwide. A megacity of over 14 million, Kolkata has the highest air pollution of any city in India. Its children's health is severely challenged by respiratory infection, cholera and diarrhoea.

Jakarta, Indonesia – ready for the effects of climate change?

Consistently making the top five list of cities affected by climate change, Indonesia's overcrowded capital is facing land subsidence into the sea as well as increased storms, flooding and heatwaves. While it responds with expensive protective engineering, it must also take into consideration social obligations, in particular the likelihood of permanent displacement of poor communities.

Introduction

Flooded Malabon City, greater Manila, the Philippines, in August 2012. Over 5,000 families were affected or displaced and many, like this family, lost all they owned.

This report draws attention to urban vulnerabilities, for two important reasons: firstly because city demographics, landscapes and disaster resilience needs are rapidly changing, and secondly because in 2008, it became the case that more of us were living in cities than anywhere else[9]. It focuses on the children of the Asia Pacific region who are living in or moving to large towns and cities, and asks the question: what more needs to be done to create low-risk urban environments?

'From land use planning and zoning, to coordination of emergency services, to regulation enforcement, local Government is the key institutional piece of the puzzle. As the international humanitarian community, we are more used to working with national institutions at the central level and we need to adjust this default setting for the urban disaster context.'

Robert Piper, UN Resident & Humanitarian Coordinator for Nepal

Measuring and reducing disaster risk

In the last ten years, disasters like the 2012 Manila floods, 2011 Japan earthquake, 2010 Russia forest fires and 2005's Hurricane Katrina have served to remind that nobody can be fully prepared for a disaster. Humankind will always struggle to stay one step ahead of earth, water, wind and fire. The shock of human casualties is often the primary focus, but loss of property, economic impact and social and environmental effects of disasters can affect many more people long-term. Some of the world's most significant economies have suffered setbacks in their development and prosperity as a result of disaster; for developing countries most at risk, the cycle of disaster has been crippling.

Disaster risk is measured by combining the hazard (likelihood of a disaster) with the vulnerability (likelihood of impact). While the Richter Scale of a quake or ferocity of a storm does not decrease in developed countries, risk is considered less because vulnerability has been reduced. Levies form a wall from the sea or river flats, constructions are made using earthquake-proof structures in accordance with building regulations, waterways and drains are maintained and anti-erosion measures – in some cases as simple as planting more trees – are taken.

In contrast to this, poor planning and inadequate public spending on disaster risk reduction increases impact on communities – the less prepared, the greater the vulnerability. Thus some of the world's poorest and most disempowered communities also face inequality in their risk from the impact of disasters.

The 2004 Asia tsunami remains the most memorable disaster of its generation, a complex case study spanning five developing nations and hundreds of coastal communities. In its aftermath, the region as a whole has faced the reality that disasters can and do strike more than once, and taken steps towards mitigation and increased disaster preparedness.

In particular, Indonesia, Thailand, and Sri Lanka – the hardest-hit countries – have become leaders in the region in disaster preparedness, mitigation and early warning[11]. These countries have restructured their disaster management institutions, revised their policies and procedures, formalised drills and evacuations and introduced cooperative early warning systems locally, nationally and regionally where previously there was none. Increasingly their policies are recognising the importance of natural resource management to protect against climate-based hazards and delineating areas to remain undeveloped due to disaster risk.

While some events – especially those related to the monsoon season in Asia – can be anticipated, others, including man-made disasters of conflict, land degradation or toxic pollution, emerge in unexpected ways. Science indicates that climate change as a result of global warming is reaching over all continents to change once-familiar patterns of oceans and rainfall. Especially in this volatile landscape, reducing vulnerability is key to reducing risk.

What is changing?

- While developing countries continue to grow their numbers, developed countries are stable or even declining in population. Thus, developing countries are now "younger" demographically than developed countries.
- Traditional livelihoods in rural areas are now unlikely to satisfy the needs of new populations looking for work in low- to middle-income nations.
- The first effects of climate change have been felt, for instance, drought for farmers or rising sea levels for fishing villages.
- The rural-to-urban shift has happened gradualllly and globally over the last century but in Asia and the Pacific, the shift has been more rapid than any other regions[10], from 11% of the population in 1930 to 42.5% in 2010.

What effect is it having?

- Cities are expanding in population and geographic spread.
- While rural populations are ideally net producers, urbanites are net consumers. This creates dependency on local government to plan on behalf of citizens.
- Urban residents with good prospects are able to set new expectations for standards of living including government services; as a result, many cities are 'gentrifying' their safest and most attractive attributes.
- At the other end of the economic spectrum, as populations increase under limited or absent planning people start to make their own arrangements independently of government partnership.
- Migration to cities challenges the cohesion of geographic communities, particularly when there is competition for jobs and services.

Why focus on Asia and the Pacific?

It is well acknowledged that Asia and the Pacific are hotspots for natural disasters. Vast areas of Asia suffer river flooding each year, and the region contends with some of the most active tectonic plates and volcanoes, both under the sea and on land. In addition, the proximity of Asia's settlements to their coastline makes them vulnerable to many of the most immediate effects of global warming including flooding and rising sea levels. The Asia Development Bank projects that 410 million Asian urban residents will be at risk of coastal flooding by 2025[12].

The Asia Pacific region faces another challenge more urgently than any other region – the rapid rate of country-to-city migration, and as a result the race against time to understand and address urban risks. Asia's urban expansion has occurred later than other regions, but it is significantly more volatile. In particular, China and Indonesia have moved from 11% urban to well over 50% in just two or three generations[13]. The percentage of urban dwellers in the region in 2012 is around 40%, but is projected to hit 55% by 2030[14]. Sheer numbers also boost the significance of Asia's urbanisation drift; Asia has about the same number of urban dwellers as the rest of the world combined.

Economically, too, Asia is on the move. Some parts of Asia are experiencing GDP growth rates of more than 10% and import and export growth of more than 20%[15]. Urban Asia generates more than 90% of this wealth; the People's Republic of China (PRC), India, and Japan contribute three-quarters of that; and these three nations also host 9 out of Asia's 12 megacities. For now, at least, this indicates a strong link between urban infrastructure and economic growth in the Asian context. As the national significance of economically successful cities is recognised, more funds often become available to create more efficient, accessible and higher-quality services, usually under cost recovery or privatisation. Therefore, wealthy residents of a wealthy city enjoy a standard of living well above what may be available elsewhere in the country.

However, it does not follow that all large cities experience positive economic growth or that this benefit is passed on to their citizens in terms of improved living conditions. The speed with which towns have become cities, and cities merged to become greater metropolitan areas, has challenged governance structures and public spending in the Asia Pacific region.

Furthermore, as cities expand, boundaries of local government responsibility, as well as that of individual government departments, have sometimes become unclear and conflicting. Involving citizens in decisions around urban land use and resources is not widely practiced; even the concept of citizenship is challenging when applied to cities rather than countries.

By 2030[16]:

- **Around 5 billion people are expected to be living in Asia**
- **Around one-quarter of them will be aged under 18**
- **55% to 60% of them will live in cities**
- **Though there will be several more "megacities" of 10 million or more by 2030, the majority of growth will be in secondary cities**

Absolute risk and real risk: Asia's double disadvantage

According to Maplecroft's 2012 Natural Hazards Relative Economic Exposure Index[17], three out of the four nations most at risk economically from disasters are in the Asia Pacific region – Japan, China and Taiwan.

However, the report identifies these countries based on absolute risk, or the value of the economic loss they could potentially face. All of these countries have shown capacity to recover quickly from massive setbacks because of the size of their economies and the interests and dependencies of trade on their markets. Japan and Taiwan also have high levels of insurance – around 55% of the damage done by the March 2011 earthquake and tsunami in Japan was reimbursed by the insurance industry.

In terms of real risk, or the potential unrecovered loss due to a natural disaster, Bangladesh is considered first in the world, with the Philippines, Myanmar, India, Vietnam and Lao PDR also featuring in the top 10.

Asia's urban wealth inequity remains one of the region's most pressing issues to resolve. The most vulnerable in many cities face active discrimination in terms of denial to services, land tenure and rights for their children. Often they are newly arrived, displaced by poverty or other factors from their previous lives. But they may also be living in generational urban poverty, particularly in the inner city slums of historically poor nations like India, the Philippines or Indonesia.

Rates of malnutrition and preventable childhood illness are higher in some slum settlements than in rural settings or the national average[18]. A significant proportion of the urban poor continue to collect water from external sources, and are often more limited in the volume of water available to them than in rural areas. The poor lack access to affordable housing, basic infrastructure, full-time employment options, health, education and legal protection. They are usually excluded, not just socially, but also in terms of institutional decision-making[20]. In addition, the urban poor who live in overcrowded slums are often exposed to unsafe and degraded environmental conditions resulting in rapidly spreading diseases and other severe health consequences, and are disproportionately affected by stress and depression[21].

Children are a significant and growing proportion of the Asia Pacific region's population. Of any demographic, they are most at risk from hazards of all kinds, and they have a unique perspective on these risks that can help to identify and reduce them. One of the most recognised and accepted models for understanding cities from a children's perspective is through the networks and toolkits of the "Child Friendly City" movement (see summary, p. 19), but this is not specifically applied to disaster risk reduction in all cases. Children in some cities live constantly frightened – of violence, of traffic chaos, of environmental degradation and exposure to pollution, of displacement or loss of possessions. These everyday risks are as important as the calamities of natural disaster but are rarely included in the mix of reporting for disaster risk reduction.

2010 Asia megacities		2025 Asia megacities	
Tokyo, Japan	37,217,000	Tokyo, Japan	38,661,000
Delhi, India	22,654,000	Delhi, India	32,935,000
Shanghai, China	20,208,000	Shanghai, China	28,404,000
Mumbai, India	19,744,000	Mumbai, India	26,557,000
Beijing, China	15,594,000	Dhaka, Bangladesh ↑↑	22,906,000
Dhaka, Bangladesh	15,391,000	Beijing, China ↓↓	22,603,000
Kolkata, India	14,402,000	Karachi, Pakistan ↑↑	20,190,000
Karachi, Pakistan	13,876,000	Kolkata, India ↓↓	18,711,000
Manila, Philippines	11,862,000	Manila, Philippines	16,278,000
Osaka-Kobe, Japan	11,494,000	Shenzhen, China↑↑	15,545,000
Guangzhou, Guangdong, China	10,849,000	Guangzhou, Guangdong, China ↓↓	15,474,000
Shenzhen, China	10,630,000	*Chongqing, China*	13,627,000
TOTAL:	**203,921,000**	*Bangalore, India*	13,193,000
OTHER URBAN ASIA:	**1,594,125,400**	*Jakarta, Indonesia*	12,822,000
		Chennai, India	12,814,000
		Wuhan, China	12,727,000
		Osaka-Kobe, Japan ↓↓	11,494,000
		Tianjin, China	11,934,000
		Hyderabad, India	11,647,000
		Bangkok, Thailand	11,235,000
		Lahore, Pakistan	11,190,000
		TOTAL:	**323447000**
Figures and estimates from: Asian Development Bank, 2012		**OTHER URBAN ASIA (PROJECTED):**	**2,016,858,000**

Mapping hazards in the Asia Pacific region

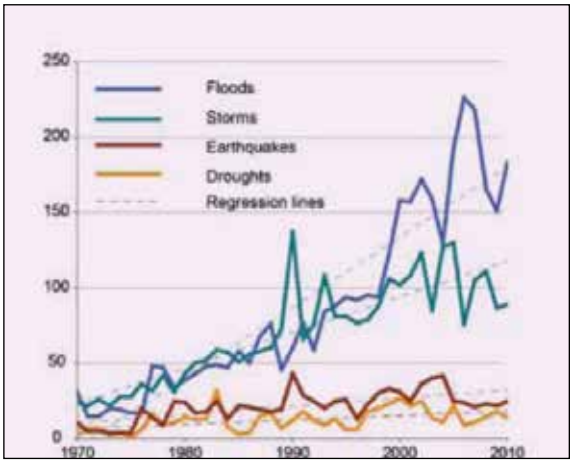


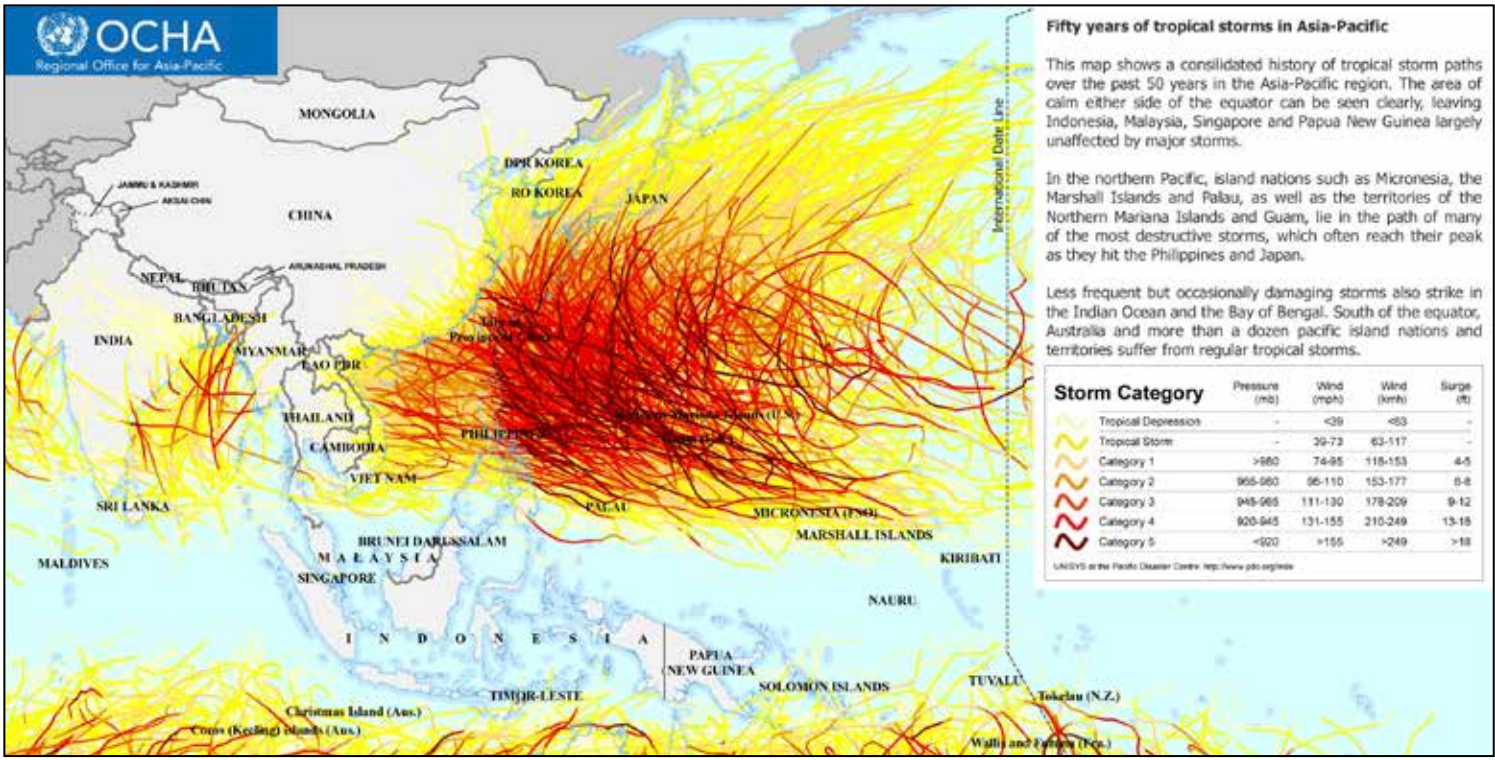
Figure 1: The number of recorded hydro-meteorological disasters is on the rise globally.
Source: EMDAT-CRED, Brussels

Asia tops urban vulnerability charts for climate change

The Maplecroft study of climate change vulnerability for 2013[22] shows that the top seven cities are all in the Asia region:

1. Dhaka
2. Manila
3. Bangkok
4. Yangon
5. Jakarta
6. Ho Chi Minh
7. Kolkata

Figure 2: By mapping the ferocity of tropical storms over 50 years, clear hotspots emerge over the Indian and central Pacific oceans.
Source: UNOCHA Asia Pacific



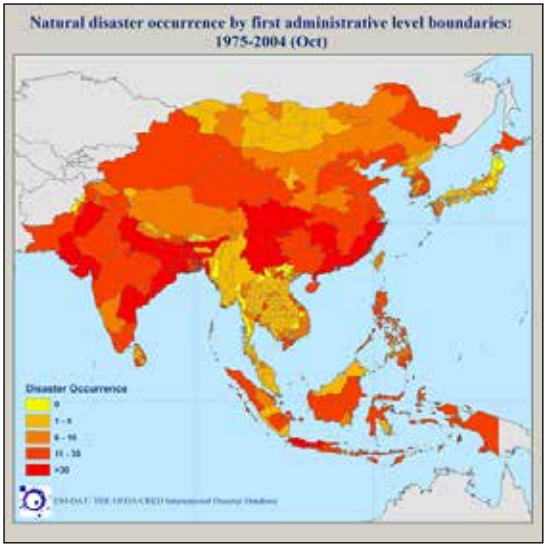


Figure 3: The prevalence of natural disasters should not only be measured by national borders. This map shows that states and provinces within a country, for instance, India or Indonesia, often have different sets and scales of hazards to contend with.
Source: EMDAT-CRED, Brussels

Of the 1,243,480 people killed and 2,695,813,000 affected by disasters between 1999 and 2009, more than 80% were from the Asia Pacific region[23].

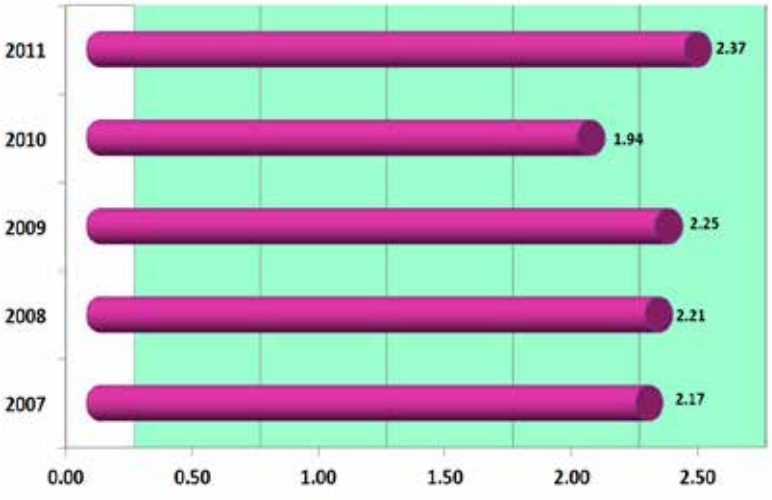


Figure 4: The average number of emergencies reported every week in the Asia Pacific region has increased slightly over the last five years.
Source: World Vision/EMDAT, Asia Pacific

Figure 5:. While most Asian countries are not featured internationally as conflict hotspots, in reality civil unrest is disrupting communities across most of the region.
Source: Economist Intelligence Unit (public domain)

Double impact of disasters on urban stability

With cities increasingly viewed as the economic drivers and political powerhouses of their nation's prosperity, a natural or man-made disaster has a double impact – on the population's well-being, and on the ability of the nation to recover economically. Cities act as national hubs, or transnational hubs for some larger urban centres, that link smaller communities to production, trade, tourism and investment – key sources of GDP for most countries. When a disaster closes down a city, even short-term, the costs to the economy start to add up.

Depending on the scale of a disaster, rebuilding basic infrastructure can take months or years, and the mantra to "build back better" is challenged in developing countries by costs, knowledge and availability of materials as well as many other factors. Between local government, national government and insurance agents, it can be unclear which party has primary responsibility to fund recovery efforts. In the meantime, industry can falter or businesses move elsewhere, further reducing the ability of citizens to drive their own economic recovery at household level. Where the disaster is environmental – for instance, a factory fire or chemical spill – culpability usually moves to the private sector, where action on cleanup and personal damages can be delayed by legal action between government, corporations and individuals.

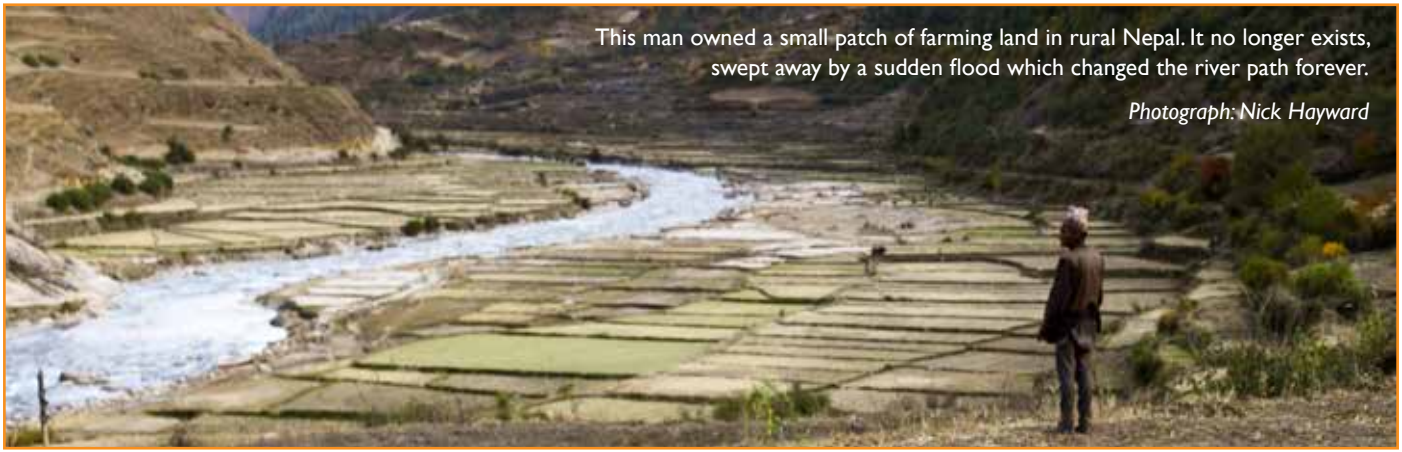
Urban centres also feel the effects of disasters elsewhere in the country, mainly in terms of displacement of rural communities. Cities often need to adapt to a surge of new residents, often arriving with few resources of their own. This could take the form of mass migration after a single rapid-onset disaster but can also emerge more slowly, especially where social unrest or war is occurring elsewhere in the country. Adaptation to this includes the consideration of new social risks, for instance, the introduction of factional violence in a previously peaceful neighbourhood, or competition over jobs which may increase discrimination or ethnic tensions.

"In 2010 I visited Sunsari district, an eastern region of Nepal, which was flooded in August 2008 when the Saptakoshi River, one of the largest rivers in the country, broke its embankment and started flowing directly into human settlements. At that time, 75 per cent of the river's water swept through half a dozen villages, displacing thousands of people, mainly women and children, and killing countless livestock in Nepal and neighbouring India. Now it is unrecognisable. Nothing remains but grey sand where once there was green vegetation, and where cash crops such as sugarcane and jute grew alongside food crops for local populations.

"Often we see what disasters do to humans, but rarely do we see the after-effects on human settlements and the environment. Once-fertile land can be turned into a barren desert in just a matter of time and it may never recover, despite many human interventions. World Vision's recovery project has been implementing nutrition related activities for children and helping children return to school but no human or organisational effort will bring back a lifeless village, a testimony to the scars of disaster.

"Rather than continuing to the place I had planned to spend the day, I found myself interested in stopping to report what lay beyond the sand-filled village, but as far as my eyes could see, there was nothing to capture. Finally I saw a boy hopelessly trying to find a patch of green for his cattle. I asked him where he was from, but he seemed as lifeless as the place itself and just walked away, herding his hungry cattle."

Alina Shrestha, communications specialist, World Vision Nepal



This man owned a small patch of farming land in rural Nepal. It no longer exists, swept away by a sudden flood which changed the river path forever.

Photograph: Nick Hayward

Amidst these considerations, it is worth noting that cities also have the potential for positive impact in terms of national resilience and protection[24]. In fact, a higher density of population can be seen as advantageous in requiring less infrastructure to meet needs, and economies of scale in provision of services. Recycling of goods and water, lessened vehicle mileage and better garbage and pollution control are all signs of a well-planned, low-risk city whose commitment to sustainability can protect its rural counterparts environmentally and financially.

To provide disaster-resilient infrastructure, pre-positioned emergency supplies, preparedness training and evacuation services across an entire city of diverse and ever-changing living conditions is more than an aspiration – it is possible. The 2012 World Urban Forum declared the Australian city of Canberra a Role Model for the Making Cities Resilient campaign (see next column), noting in particular the swift legislation and implementation of the Emergencies Act after bushfires devastated the city in 2004[25]. Eight years on, the city's Strategic Bushfire Management Plan integrates with other planning strategies and bodies including environmental, land use and community campaigns, while the local government has established over 50 Community Fire Units based on risk mapping to identify areas for protection. The engagement and mobilisation of community directly allows for an integrated approach to risk reduction that updates itself as community-based knowledge and experiences change.

Making cities resilient

The Making Cities Resilient Campaign was launched by UNISDR in 2010 in response to the "tipping point" in 2010 that more people now lived in urban than rural environments. A very clear focus on risk reduction and a direct relationship of planning and expertise between implementing cities have helped this campaign to grow quickly. As of September 2012, 1061 cities were signatories to the commitment to make their city resilient.

The campaign asks members to sign up to ten essentials for urban disaster risk reduction. Global research conducted with mayors and city managers in preparation for Phase 2 of the campaign, 2012-2015, showed that their most important essential was the first – the need for proactive organisation and coordination on the themes of urban DRR.

Essentials for Making Cities Resilient (UNISDR)[26]

Essential 1: Put in place organization and coordination to understand and reduce disaster risk, based on participation of citizen groups and civil society. Build local alliances. Ensure that all departments understand their role to disaster risk reduction and preparedness.

Essential 2: Assign a budget for disaster risk reduction and provide incentives for homeowners, low-income families, communities, businesses and public sector to invest in reducing the risks they face.

Essential 3: Maintain up-to-date data on hazards and vulnerabilities, prepare risk assessments and use these as the basis for urban development plans and decisions. Ensure that this information and the plans for your city's resilience are readily available to the public and fully discussed with them.

Essential 4: Invest in and maintain critical infrastructure that reduces risk, such as flood drainage, adjusted where needed to cope with climate change.

Essential 5: Assess the safety of all schools and health facilities and upgrade these as necessary.

Essential 6: Apply and enforce realistic, risk compliant building regulations and land use planning principles. Identify safe land for low-income citizens and develop upgrading of informal settlements, wherever feasible.

Essential 7: Ensure education programmes and training on disaster risk reduction are in place in schools and local communities.

Essential 8: Protect ecosystems and natural buffers to mitigate floods, storm surges and other hazards to which your city may be vulnerable. Adapt to climate change by building on good risk reduction practices.

Essential 9: Install early warning systems and emergency management capacities in your city and hold regular public preparedness drills.

Essential 10: After any disaster, ensure that the needs of the survivors are placed at the centre of reconstruction with support for them and their community organizations to design and help implement responses, including rebuilding homes and livelihoods.

Like this boy in Phnom Penh, Cambodia, young people living in cities have a keen interest in participating in planning and implementation of risk reduction activities.

Part 1:
A place for children in urban disaster management

There are many reasons for an inclusive child focus in disaster risk reduction:

- Proportionally, children are at most risk of death, injury or permanent disability caused by the hazards of their living conditions.
- Children live in a localised world, dependent on the immediate infrastructure and capacity of their community to care for them.
- Children have their own recognised rights which must be taken into account as part of any policy which impacts populations, positively or negatively.
- Though children are citizens, they do not vote and need alternative mechanisms to contribute towards good, responsible and accountable governance on their behalf.
- Children are still learning about the structures and services in place that might benefit them; they trust their caregivers and other influential parties to make the right decisions on their behalf.

"Every disadvantaged child bears witness to a moral offense: the failure to secure her or his rights to survive, thrive and participate in society."

Anthony Lake, Executive Director, UNICEF

This is true of any child, in any environment, developed or developing. However, the likelihood that children will be affected by a disaster is significantly higher in poorly serviced urban communities. Evidence is emerging that children living in urban poverty are at greater risk than their rural counterparts[27], including from:

- Health epidemics including diarrhoea or TB
- Respiratory disease caused by pollution
- The effects of natural disasters
- Accidents including traffic, fire or drowning
- The effects of violence.

Though no family or community could be considered truly protected or "disaster-proofed", it is undoubtedly the case that effective preparation and reduction of risks will save children's lives. The challenge now for rapidly changing urban environments is to recognise emerging risks for children in poor communities, and to have the flexibility and will to reduce or resolve them.

Child Friendly Cities

Since 1996, the global movement for "Child Friendly Cities" has been working in partnership with municipal governments to raise the profile and inclusion of children as citizens in urban settings. The movement encourages children to define and seek their vision of a liveable city directly with municipal authorities. Safety and protection for children has always been a fundamental goal of the CFC movement; by expressing their experiences and perspectives of the urban environment in which they live, children are also identifying risks and priorities for change.

Introducing and upholding the CFC is often a local decision, though some countries such as the Philippines have shown national leadership to make children's consultation on urban planning the norm rather than the exception.

Find out more at:
http://www.childfriendlycities.org/en/overview/the-cfc-initiative

estimates around 450 million children are living in urban environments in Asia[28].

All these children have similar needs, but their external realities differ widely. Not just between nations, but increasingly within a single nation's multiple urban hubs, city children may be living under very different influences, policies and priorities. Even within a city, children's environments and experiences differ depending on their locality, their housing and their family's income.

Child vulnerability indicators spike in urban slum areas, where many families are living day to day in terms of income, shelter, food and water. For instance, children in Dhaka slums are more at risk than rural children in Bangladesh of dying from diarrhoea[29]; in Manila, children in slum communities are nine times more likely than children in the rest of the city to contract tuberculosis[30]. These tragic inequalities focus attention on geographically defined areas. Even then, vulnerability may go unnoticed; children may be living in abject poverty and risk in wealthier neighbourhoods, or transient and homeless altogether.

For all of these children, small-scale incidents are as much disasters as the extreme events that make the news. Road accidents currently kill or injure more children and young people worldwide than any other cause[31]. Disasters too small to be reported – fires, explosions, electrocutions – take the lives of children and their caregivers daily across the region.

Avoiding these individual tragedies is a matter of recognising and addressing risks. Children have proven themselves to be ideal and imaginative partners in risk assessment. The inclusion of children in disaster risk planning, and in particular the identification of risks, has already been key for building national frameworks for healthier cities in Asia (see Child Friendly Cities, left, and Children's Charter on Disaster Risk Reduction, p. 24). Different age groups can provide helpful alternative viewpoints to what is seen by adults, including on the concept of vulnerability itself.

Children in very different economic and cultural surroundings often identify common elements to contribute to their protection and well-being – security of housing and the local area, safe thoroughfare, fair and consistent treatment of all children in their community, space to play and protection from hazards such as traffic or deep water. Adolescent children, in particular girls, crave privacy and dignity in their hygiene habits. Children of all ages also demonstrate a strong affinity with green spaces and nature, even when they have grown up without these elements.

Even the concept of vulnerability benefits from a child's perspective. Children

of all ages show empathy for other children and weave their own experiences together with stories they have heard to identify issues affecting them and their community. Thus a vulnerable child in their eyes may be not somebody who is poor financially but somebody who is stigmatised by family violence or who must stay home from school when their siblings are unwell. Sometimes children will also know the solution – for instance, after-school care or the conversion of a local vacant lot into parkland.

Children's contributions to planning may be only one perspective of what is needed for all, but often their solutions impact the development and resilience of the community as a whole. Children are particularly effective in identifying and reducing everyday hazards that are close to home, such as environmental degradation, accident hotspots or inadequate supervision. However, they are less likely than adults to recognise hazards actually within the four walls of home, for instance, rickety structures or proximity to flood risk, or to recognise the full range of health risks facing slum children. Thus, disaster risk reduction partnerships, between children, adults and policymakers, are the most effective way to reduce risk and impact at household and community level.

Consulting all children

Children have proven themselves to be effective partners in disaster planning[32]. However, child-focused disaster risk reduction continues to be the exception rather than the rule in an urban environment; the children who are most at risk are also the most difficult to find. Census and services for slum communities are gaps in most cities experiencing rapid growth, sometimes due to a hesitation to introduce 'pro-poor' policy but just as often because policymakers cannot keep up with demographic shifts. City-based disaster risk reduction policy may concentrate on policy for generalised or large-scale disasters, rather than allowing for each community to identify and respond to what is among them locally. This places the children of the poor most at risk because they face generalised and localised disaster events at the same time, often with very limited knowledge or power to protect themselves.

Barriers to effective children's participation

The idea that children may contribute a valid perspective to discussions concerning their well-being is not always accepted in full. World Vision's work within the Child Friendly City movement consistently confronts challenges in engaging parents, other adults and policy makers in formal discussions with children. There are several reasons for this:

- Children are often seen as recipients rather than contributors, with provision of services considered the full extent of accountability rather than the starting point for child rights.
- Children's well-being is usually measured quantitatively (underweight/malnourished, at school/out of school, vaccinated/not vaccinated) and decisions on services created in response to this quantitative information. The qualitative aspect of what children think and want is not well aligned with these statistical goals.
- Policies for children are sometimes "add-ons" rather than integrated, and so children may be kept back from advising on policies for society as a whole. However, children have interests in all policy, not just those matters that are particular to children.
- Adults are used to seeking the advice of experts who know more than they do, and hesitate to consider that children can have sufficient experience and analytical wisdom to contribute in meaningful ways. While consultation with children does need to be age-appropriate, the importance of the alternative perspective provided by children outweighs the limitations of their experience.
- It may not seem necessary to ask children if an answer appears to be straightforward. Parallels with gender inclusion in policy and development may be drawn here; it has taken several decades for women's perspectives to be recognised for their value to community as a whole.

"The underlying issue is that our voices are not being heard. We need to have our voices heard."

In Pegirian, a small village close to the main shipping port of Surabaya, Indonesia, children are able to recognise and propose solutions for many social challenges affecting them: poor environmental conditions, early marriage, violence and school dropouts. However, the primary concern voiced by the children was their lack of voice and participation in decisions affecting their lives. Culturally and structurally, there was little opportunity for consultation and problem-solving directly with children.

The children selected the Child Friendly Village concept as a solution to their challenge. Originally introduced to the area by Plan International, the concept is now supported through World Vision's urban development programme in Surabaya. The aim is to promote child participation in the development of pro-child policies and behaviours at village and city level, leading eventually to a Child Friendly City framework in place across Surabaya.

Creative events, such as art exhibitions, photography, music competitions and youth forums, gave young people the space and the medium to express what they saw, what was working and what was not. During the assessment phase, children took cameras to the street for an alternative perspective of the current situation. Their input has been a foundation for shaping the design of the project.

The children continue to face cultural barriers to inclusion in family and community decision-making, with monitoring of the Child Friendly Village revealing hesitation from some adults to listen to the thoughts and ideas of children. However, many of the new networks between civil society groups, including children's groups, are functioning effectively, and the children have a direct connection with their village head.

These links are already reducing the dependency on World Vision as instigator of change for children. The national Ministry of Women's Empowerment and Child Protection has expressed interest in learning from the experiences of Surabaya's Child Friendly City Framework, as part of a strengthening commitment to fulfilment of child rights in Indonesia's cities.

This photo taken by a teenager in Pegirian shows local hazards from a different perspective.

Who are the Asia Pacific region's most vulnerable children?

Children out of school

Teaching children about disaster preparedness including evacuation is important in every community. Many governments in high risk developing countries, such as the Philippines and Thailand, have mandated disaster preparedness into the school curriculum in order to reach as many children as possible[33]. NGOs such as the Red Cross or World Vision also often partner with schools or municipal authorities to deliver preparation and risk reduction messages to children. However, where these principles are most urgently needed – informal settlements in risky locations – children are less likely to be at school to receive the messages and materials. In some Philippines slums, up to 60% of children are reportedly not in school[34] and go without these important lessons on protection and risk reduction.

Children in temporary housing

Where families are living without secure tenure or appropriate income to plan for permanency, homes are built using temporary methods and often flimsy, scavenged materials. As a result, many families living in the most high risk areas are also living with the least protection from external elements. These homes are unlikely to provide higher ground in the case of floods, or shelter from a tropical wind storm; in fact, dislodged materials from informal housing can become part of the hazard for children when disasters strike.

Children living in coastal or river settlements

Many urban settlements were founded near the sea or river because of the community's relationship with water as a resource – for food, for drinking and bathing, and for livelihoods. This relationship breaks down in urban contexts as the population increases. Instead, seas and rivers become threatening for children in terms of flooding or accidental drowning. Where basic services such as sewage and garbage collection are not in place, urban rivers become dangerously polluted. Communities living near water are already experiencing the effects of climate change and rising sea levels, and in some cities may soon lose their land altogether.

Children in under-serviced areas

To keep their city healthy and productive, urban governments are tasked to provide all manner of citizen services – from roads, transport and safe public spaces through to water supply, sanitation and garbage removal. Political incentive to build this infrastructure in poor communities, especially where families are squatting, can often be lacking. The children living without these services will be extremely vulnerable in the aftermath of an emergency, when overcrowding will make evacuation extremely challenging, and rapid transport to hospitals simply not possible.

Children in industrialised areas

Industry has traditionally been the economic mainstay of urban growth, attracting many workers from rural environments. More recently, though, the gentrification of city areas has pushed the ugly side of urban expansion to the peripheries, and the workers and their families have followed. The proximity of these children to hazardous materials and pollution is concerning, as is the practice in many developing countries for children to work alongside their parents in factories and processing plants.

Marginalised children

Urban communities are often built based on economic necessities rather than a more cohesive common culture, which can lead to marginalisation of particular families and children. New arrivals to city areas may need to move several times before they are accepted, particularly if they are ethnically different or international immigrants. Children in these families may be "invisible" or even face active discrimination in terms of information, play and access to community space and support. Children living with disabilities in slum settlements are particularly at risk, because their mobility and interaction is severely limited by their environment[35].

Children post-disaster

A disaster-affected community has fewer resources and less time to look after children, usually in a physical environment that contains increased and unpredictable hazards for illness and injury. Psychosocial effects of displacement and loss in adults can exacerbate neglect from parents or caregivers[36].

How do children see their own vulnerabilities?

PHILIPPINES: Children living in crowded settlements report that they see or hear things that scare them. Because the houses are built of thin wooden walls with cracks, children know what is happening to neighbours or outside. They say this can keep them awake at night, and they hear arguments, vicious gossip and physical fights. The children wish that people around them would stop fighting, and also that they could have bigger houses to provide a more effective barrier. They are aware that they cannot be proud of their houses and that they are "poor".

PHILIPPINES: Children play their games on the street or in rubbish dumps because no playground is available. They know that this is dangerous and wish they could go somewhere better to play. They believe that the government could do something about this if they were willing to spend more money on the well-being of children.

NEPAL: Children are observing increasing pressures on their local environment as a result of urbanisation. Road traffic is increasing, land is being taken for housing, and air pollution is once again becoming a concern. Winter is becoming harder for children, with more coughs and colds as a result. They think heating in schools would help to resolve this.

CAMBODIA: Children living by waterways remember or have been told that the water there was once clean enough for the locals to use. Because families living in poverty have been careful to sustain their water supply, children believe that the blame for contamination lies with new, wealthier neighbours. They report that these people had their own household water and so did not care about the state of the shared resource, throwing their leftover food and rubbish into it until it began to smell. Instead of selling off the land, one child suggests it could have been left as a community park for all children and families to maintain and enjoy.

CAMBODIA: Children know that they would be safer staying away from the nearby rubbish dump. They are scared of falling into holes and have even heard of children being run over by tractors. They are also aware of the risk of disease that comes from handling rubbish. But many of them go anyway, to "ragpick" in search of materials they can sell. The children who do not ragpick feel very sorry and worried for the children who do.

Philippines and Cambodia viewpoints from WorldVision children's consultations; Nepal viewpoint from Children in A Changing Climate consultation.

Overview of the Children's Charter on Disaster Risk Reduction

Research by international NGO coalition Children in a Changing Climate between 2007 and 2009 aimed to identify a global position for children on disaster risk reduction, by consulting with children and children's groups across many different countries and contexts. The survey revealed that children and young people are not satisfied with what is being done to prevent or mitigate disaster risks on their behalf. They believe that they can help to do this better, both in building their own resilience and improving DRR governance and resilience of the community as a whole.

Building on this and other research, children's organisations including Plan International, Save the Children International, UNICEF and World Vision worked with more than 600 children in 21 countries to prepare and release the Children's Charter for Disaster Risk Reduction. With children and young people the focus of UNISDR's 2011 International Day for Disaster Reduction, the charter has helped to integrate children's priorities into DRR planning.

The Children's Charter for Disaster Risk Reduction (2011):

1) Schools must be safe and education must not be interrupted

2) Child protection must be a priority before, during and after a disaster

3) Children have the right to participate and to access the information they need

4) Community infrastructure must be safe, and relief and reconstruction must help reduce future risk

5) Disaster risk reduction must reach the most vulnerable people

The Children's Charter has already influenced DRR decision making in several countries with support from the participating NGOs, and is a key ongoing priority for World Vison's chlld protection efforts. A bibliography specific to the goals and achievements of the Charter has been included as Annex 1 to this document, p. 80.

Update: Inclusion of working children in disaster risk reduction

A 2012 review of the implementation progress of the Children's Charter revealed that Priority 5 – reaching the most vulnerable – was currently falling short of what had been hoped. Interviews with children and implementing staff indicated that child labour was an enormous barrier to including all children. When children were asked about this, they explained that some children could not take part because they had to work instead. Advocacy for greater inclusion of working children is therefore interlinked with several other social agendas:

- The reduction of child labour at the expense of schooling
- The goal for universal education
- Mainstreaming DRR in schools including non-formal education curriculum, and
- Corporate social responsibility in introducing disaster risk reduction principles and practices in all workplaces.

Increased participation in line with Priority 5 might then indicate progress against one or more of these interdependent goals.

Update: Yogyakarta Declaration recognises children's charter

In October 2012, the 5th Asian Ministerial Conference on Disaster Risk Reduction took place in Yogyakarta, Indonesia. Child-centred agencies worked together before and during the conference to promote the importance of the Charter priorities and a child-centred approach to DRR that focuses on children's rights to protection, participation, survival and development in the face of disasters. The resulting Yogyakarta Declaration included an explicit mention of the need to focus on children and protect the rights of children, as well as a statement on encouraging child and youth participation in DRR and development processes at all levels. This is a significant achievement in terms of promoting child-centred DRR at the government level across Asia.

Children begging on the streets of Delhi are vulnerable to traffic accidents, health risks and abuse, with very limited power to report or improve these hazards.

Thousands take shelter in this "tent city" in a sports centre after Typhoon Ketsana, Manila, 2009.

Part 2:

The cities of the Asia Pacific region

"We need to clearly describe what the local authorities need to achieve: to localize the Hyogo Framework for Action."

Incheon Declaration
by Asian governments, 2009

The causes of urban poverty are complex and often inter-related, for instance, higher costs of housing, land and living against existing wages, dependence on a cash economy and the services of government, and exploitation or marginalising of new arrivals. A key characteristic of a city that does not plan or provide for its poor is wealth inequity, often excluding a significant number of citizens from the advantages of city living. Badly constructed or illegal shelter, lack of access to community information, poor nutrition in children and limited schooling opportunities all increase the likelihood that when a disaster strikes, these will be the families hit hardest.

Defining urban poverty

The urban poor are often vulnerable to:

- higher costs of urban living
- dependence on a cash economy
- greater insecurity of income and employment
- exploitation in work or at home
- living in hazardous locations with informal housing
- informal or illegal status which limits access to services and representation
- lack of social networks and community trust
- urban risks such as crime, street violence and traffic accidents.

The previous list shows some of the key characteristics of urban poverty that make it unique or distinct from other contexts. Where present, these characteristics represent symptoms of a poorly developed and serviced city, where imbalances between supply and demand tend to favour the wealthy. Thus, the number of people living in a city may not be highly relevant to the conditions and challenge they face, and a city of 150,000 may have similar overcrowding and shelter challenges to that of a city of 5 million. The difference between a town and a city is subjective – and in China, a community of 300,000 may be referred to as a village.

World Vision uses the following factors to help define "urban" areas for working with the poor. The increase of these factors usually signals increasing urbanisation, and therefore a greater vulnerability to the challenges listed above.

Physical	Economic	Human	Political	Environmental
Ongoing construction of buildings or major development of infrastructure or industry	Primarily non-agricultural labour and industry	Population size, density and overcrowding	Close proximity to political leaders and authorities	Majority of land is occupied or in use, open spaces are limited
Land use changing from agricultural to commercial & residential	Informal, cash-based trades and services are present	Mix of cultures, ethnicities, languages,religions and identities	Territory is governed through "municipalities" or similar entities	Pollution and traffic congestion issues
Presence of slums, shanty towns, shacks, or otherwise poorly constructed and informal housing	The poor are subject to price fluctuations and have limited coping strategies	Presence of unregistered migrants and/or displaced persons	A high need for integrated land use and strategic planning to meet the needs of local residents	Volume of waste and limited waste management is creating environmental hazards

Localised and contextual leadership on risk reduction is a constant need for all cities, but with widely different capacity to do so, many cities start at a disadvantage. In the cities featured in this section, all of the attributes above are evident to some degree, and all face multiple hazards as a result – both natural and man-made.

Except where otherwise indicated, the statistics that appear as part of each city's overview are sourced from:
Urban growth rate, percentage urban population – UNICEF State of the World's Children 2012 – see endnote xxv
Population, percentage children in population – ADB Key Indicators for Asia and the Pacific 2012 – see endnote vii
Definitions of disaster terms – Reliefweb Glossary of Humanitarian Terms – see endnote lvi

Kathmandu Valley, Nepal – ready for the next earthquake?

- **International awareness and support**
- **Efforts towards more effective local government management of preparation and response**
- **Beginning to include children as decision makers including at local level**

BUT

- **Likelihood and scale of disaster extremely high**
- **Inadequate infrastructure**
- **Little civil society involvement in planning, mitigation or disaster evacuation/rescue drills**

NEPAL AT A GLANCE	
Population:	26.6 million
Percentage in poverty:	57.3%
Percentage urban:	17.0%
Percentage children:	36.0% (9.3 million)
HDI ranking:	157 (low)

CLOSE-UP ON KATHMANDU	
Population:	2.2 million
National urban growth:	4.1%
Land area:	899 km^2
Hazards:	Earthquake, environmental degradation, floods, civil unrest

EARTHQUAKE:

"A shaking or trembling of the earth that is volcanic or tectonic in origin causing any type of damage or negative effect on communities or properties."

Other Asia Pacific earthquake hotspots:

- China
- Japan
- India
- Indonesia
- Papua New Guinea
- Philippines
- Solomon Islands

Nepal and Haiti?

Similarities between the accommodation of Port-au-Prince and Kathmandu are immediately apparent. The population density and prevalence of low-income housing, as well as the gradual encroachment towards close-proximity smaller towns in an informal urban sprawl, makes the majority of the Kathmandu Valley's population vulnerable to death, injury or displacement in the event of an earthquake. Kathmandu is by no means the only city experiencing growth under these ominous conditions, but its high risk increases the urgency of disaster risk reduction measures such as safer housing and building standards. Other similarities such as a poorly equipped airport and very challenging road access will reduce the effectiveness of international aid in a disaster, as was demonstrated clearly in the weeks after the 2010 Haiti earthquake.

In 2012, Nepal's Human Development Index rank is 157th in the world – the lowest in South Asia[37]. The isolation of villages from each other, as well as the isolation of the nation as a whole from the rest of the world, has meant that community development is a recent and rurally focused enterprise. However, it is working – the World Bank reports that extreme poverty has halved in just seven years. International donors now partner across the country on what could be considered the basics – clean drinking water, nutrition for children, food security and health services. In the meantime, the majority of jobs and economic growth have centralised within the close-proximity cities of Kathmandu, Lalitpur and Bhaktapur which together make up the urbanised area of the Kathmandu Valley.

To understand the hazards for children in the Kathmandu Valley, the entire nation must be considered. Floods, landslides and avalanches are constant risks for mountainous communities, while drought affects food security and livelihoods across the country. This, along with recent and violent civil unrest, has led to unprecedented internal migration in the last 20 years, and the country is changing rapidly. Though the majority of the population still live traditional rural lifestyles in villages with very limited services, the urban population has been growing at an average of 6% per year over the last 20 years[38], and is expected to continue at around 4.1%[39] – significantly higher than other South Asian countries.

Nepal remains a highly politicised nation with decentralised powers at regional, district, municipal and village levels. Village Development Committees (VDCs) are active and accountable on infrastructure and services. This may serve to complicate rather than reduce the challenges of disaster management. Five municipal councils operate within the recognised urban boundaries of greater metropolitan Kathmandu, a number of smaller wards within them, and several VDCs on the expanding peripheries[40]. There is no coordinating body to harmonise management of jointly owned resources – such as air quality, water supply and transport services. Joint urban planning in line with the influx of rural to urban migration has been almost non-existent. Around 60% of the total urban population live in slum conditions including many of those who are traditional residents of the valley[41]. Increased demand for land coupled with environmental degradation has negatively impacted both agricultural activity and water supply, and many families who were once partially self-sufficient are now fully cash-dependent.

Because of the presence of active faults between tectonic plates along the Himalayas, Nepal ranks 11th in the world in terms of its vulnerability to earthquakes[42], with general consensus that it is overdue for a major seismic event. A significant earthquake with its epicentre in or near the Kathmandu Valley would be likely to see greater devastation to lives and properties than the quake of 1934 because of the recent spike in population density, unplanned development and poor construction practices. Such an event would significantly reduce the achievements the new government can currently claim in overcoming its economic and community development challenges.

Close call...

The 2011 Himalayan earthquake caused deaths in four countries, the worst hit being Sikkim in India. The quake largely spared the Kathmandu Valley but affected the eastern region badly, with damage recorded to 21,000 homes and several hundred schools and classrooms[43].

Kathmandu's children

Though all children in Nepal are facing health and development disadvantages compared to other countries, Kathmandu's children are in theory better off than their rural counterparts. While around 10% are working[44] this is less than in rural areas where children of different castes have taken on traditional farming and labouring jobs from very early ages. Schools are accessible and family sizes are smaller than in the rest of the nation. Over a ten-year period from 1995, poverty in the Kathmandu Valley dropped by 23%. However, other urban areas in Nepal saw a far greater decrease of 59%[45]. The discrepancy may be attributed to the status of Kathmandu as the nation's capital, and therefore the major recipient of rural to urban migration, particularly as a result of the civil unrest.

As in many cities in South Asia, new arrivals seek vacant land and build with whatever they can find or afford, including outside existing municipal boundaries. Around 2600 families are living in new, informal settlements, probably not counted in census information or enrolled for schooling and healthcare[46]. The children in these families are the most vulnerable to hazards, because they may not be receiving information on rights or protection, and have little access to local knowledge. Responsibility for their well-being is also challenging to define considering the rapid urban sprawl and limited national funds for child-focused facilities like healthcare, education and protective services.

While adults may be aware of the risk of earthquake – particularly older adults who remember stories from previous calamities – children are more likely to identify day-to-day hazards. A recent study found that many children identified environmental degradation and a lack of privacy or sanitation as their core concerns in the Kathmandu Valley. As well, many children were involved in the regular chore of collecting drinking water from public sources, in the knowledge that some houses in their vicinity had direct plumbing – the injustice of this was felt keenly, and children were worried about scarcity of drinking water as a result.

Focus on earthquakes

Earthquakes are probably the most researched, monitored and understood calamities among natural disasters. Despite this there is still no way to predict when or where one will strike or how strong it will be. Several quakes occur each day, either too minor to create the movement and liquefaction that topple a city, or too remote in terms of human settlement to have damage reported. Most casualties in an earthquake are caused by collapsed buildings and rubble, and in response many cities are working proactively to reduce their vulnerabilities through strict building codes and engineering standards for new and retrofitted structures. Where this is not happening, especially in built-up, multi-storey urban areas, other forms of risk reduction will be far less effective. Early warning methodologies are not relevant in an earthquake scenario. Mobilising community capacity for first aid, evacuation and emergency supplies can save lives after the quake but will not reduce the risk of the first impact wherever it may hit. The most urgent issue facing high risk low planning locations like Kathmandu is to stabilise housing – but how can it be done?

By analysing earthquake trends in similar developing urban areas, scientists have predicted that an earthquake of 8.3 could result in 75,000 deaths, 300,000 serious injuries and the displacement of many, many more[47]. Collapsed homes and schools in particular threaten the safety of children. The wealthy are not necessarily better positioned than the poor in this situation – though building codes exist, very few private constructions are monitored for safety[48], and most of the 5000 buildings that are newly constructed in Kathmandu each year bypass safety regulations, with a lack of will from private owners to bear increased construction costs. No budget exists for owners of older buildings to apply for grants to repair and strengthen their houses against earthquake impact. Ownership and upkeep of public buildings is also unclear, with historic temples and monasteries built out of the same ageing mud bricks that form much of the inner city's housing.

An earthquake scenario in 1999[49] documented with shocking clarity the effects of an earthquake on the city's infrastructure, hospitals, reserve supplies, transportation and access. The scenario calculated that 60% of buildings would fall either right away or in aftershocks over the next 24 hours. Electricity would be indefinitely disabled with short circuits causing electrocution and fires across the city. Evacuation for survivors would be hampered by a lack of outside space in which to congregate, leaving families dangerously close to damaged buildings.

Strong building codes make schools safer

It can be said that children attending school at the time of a disaster are actually at greater risk than children out of school – damage to schools is disproportionately high during disaster events compared with other types of buildings, and children spend the majority of their waking hours at school. In 2001, an earthquake in Gujarat, India, claimed 20,000 lives and destroyed 11,750 primary, secondary and higher education schools; another earthquake in Northern Pakistan in 2005 killed 18,000 children, and destroyed 10,000 schools; in May 2008, Cyclone Nargis destroyed 60% of the schools located within the affected area of Myanmar.

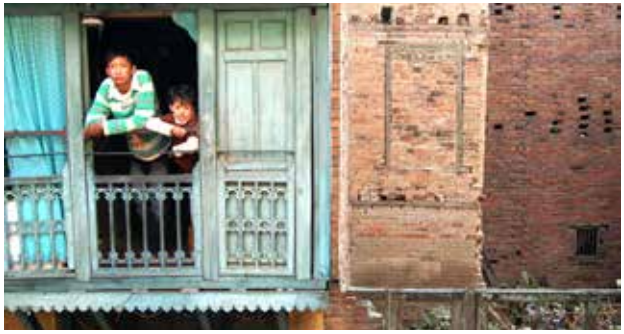
In their bid to meet MDG 2, education for all by 2015, some governments may be increasing this vulnerability even further by building schools under financial constraints without due diligence on safety standards. Thus, legislation and building codes need vigilant enforcement on public structures, and schools in particular. Particularly in urban environments, local councils usually have access to the knowledge and materials needed for disaster-resilient structures. Low rise buildings with multiple doors, non-concrete ceilings, clear evacuation routes and an outdoors assembly point may accommodate fewer students, but will be more pleasant places to study – and save lives in the event of a disaster.

A safety drill for children in Nepal during school time, organised by World Vision in partnrship with Nepal Red Cross Society. Also on the agenda, first aid, evacuation and search and rescue.

This scenario, coordinated by National Society for Earthquake Technology Nepal (NSET), led to urgent recommendations for action on risk averse urban planning under the goal "Earthquake Safe Communities by 2020". Its partner in the 1999 scenario, GeoHazards International, includes school safety among its four policy objectives. Both are non-government bodies working under largely international funding. Since that time they have helped to deliver achievements such as the 2005 building codes, 2009 Strategy for Disaster Management and increasing involvement from national ministries in local level planning and networking[50]. As yet the 1999 proposal to install a National Disaster Management Council remains unresolved, though a draft Disaster Management Act containing stronger national structures is gradually making its way through parliament.

In the meantime, NSET continues to be an effective and respected institution working alongside government and demonstrating that there are many opportunities for public private partnerships (PPPs) and local level risk reduction initiatives. Stricter urban planning and legislation on building across the valley is still urgently required, however. Conducting another earthquake simulation today is likely to reveal a higher level of public awareness and concern, but considering the increased urban vulnerabilities since 1999, the overall risk may not have reduced.

Fate or fatalism? Challenges for proactive DRR in Kathmandu



Dijan, aged 14, and his family are typical of many urban dwellers living in the heart of Kathmandu City. They live in a traditional Newari house made from local sun-dried bricks and mud mortar. It is three storeys high and narrow, with steep and dark wooden stairs. The kitchen is on the third floor, two small bedrooms below, and an entrance room on the ground floor. The house is over 100 years old and has now endured three major earthquakes including the massive quake of 1932 and last year's Himalayan earthquake, thankfully too far from Kathmandu Valley to cause major damage. In all that time it has not received repairs apart from more rendering of mud to fill cracks in walls.

Dijan's father Deepak knows that the house represents a major hazard for them but believes he has no alternative but to raise his family there. Like his father before him, he works locally as a carpenter for a meagre wage. It is likely that Dijan too will take up the trade once he finishes school in Grade 10. Deepak says, "Over the years I've overcome my fears. I have no choice but to live here. Our tradition, culture and society do not let us abandon our ancestor's house, and I cannot afford to go anywhere else. If the earthquake or any kind of disaster comes, god forbid!! We are likely to collapse with the house."

Dijan also knows about the threat of the earthquake – he is taught it in school, and he and his family take part in World Vision's community-based preparedness activities, learning first aid, evacuation drills, search and rescue, firefighting and risk reduction. For him, more immediate threats present themselves.

"The wooden stairs of my house are so narrow and weak. When I was small, I fell down them and hurt myself so many times," he says. Dijan's little sister is just three, and he worries about her safety, especially as she will soon be considered old enough to start carrying the water upstairs to the kitchen.

Building a safer house is the only real solution to reduce risks for this family, but in light of the family's situation it is out of the question for now, and Deepak seems resigned to his fate. He says, "I do not know how things will be when a major earthquake comes. Going to a safer place is something I cannot even contemplate. So we have to choose survival over prevention. I just hope all this learning will come in useful when the time comes."

WHAT'S WORKING IN NEPAL?

Stepping towards Child Friendly Local Governance

Child Friendly Local Governance (CFLG) puts children at the core of the development agenda of local bodies, line agencies and civil society, resulting in the improved availability of quality services for children. CFLG focuses on local government bodies because they are best placed to provide and sustain basic services for families and protect children – a timely enhancement to policy as the national government seeks to decentralise some of its responsibilities.

In partnership with UNICEF, local NGOs and the Ministry of Local Development, World Vision Nepal has piloted CFLG in five districts and one municipality, and has subsequently been able to provide tangible inputs to the development of the National Framework on Child Friendly Local Governance. This includes a provision for the mandatory allocation of 15% of the total capital investment funds of a district/municipality in areas related to children. CFLG was reflected in the Three Year Interim Plan 2008–2010 of the Government of Nepal. It has since been endorsed by the Ministry of Local Development and is at parliament for further approval. It is likely to affect all the children of Nepal, not only those in urban environments.

Through its CFLG initiatives, World Vision Nepal seeks to:

- Build the capacity of local bodies and service providers including District Child Welfare Boards in all 75 districts to safeguard and promote the rights of children, child protection and participation.
- Encourage networking between stakeholders.
- Ensure that local councils commit to spending at least 15% of their total capital budget in areas related to children.
- Strengthen Central Child Welfare Boards to better coordinate between national and international child rights organisations.
- Bring about consistency between international, national and local policies related to child rights, highlighting child rights to various levels of government, and creating an environment of participation between government organisations and NGOs working in the child sector.

Children's Charter in action

In 2012, Plan, Save the Children, UNICEF and World Vision in Nepal developed a Memorandum of Understanding (MoU) and concept note to establish a national Children in a Changing Climate (CCC) coalition. The coalition aims to promote child-centred DRR initiatives with the government and other NGOs, and to secure children's participation in DRR and climate change adaptation at every level, from the family and community level to the district, national and global level. The coalition will also work together to strengthen children's networks in Nepal so that they are better able to take action to influence local, national and international policies and programmes on DRR.

Although the coalition is in its early stages, the action plan developed includes research on the impacts of disasters on children, awareness raising work around the International Day for Disaster Reduction, children's consultations for post-HFA and COP18 (the UN climate change conference), and supporting children's participation in local and national DRR plans.

The coalition believes that by working together, they will be better able to influence the government and other NGOs to support child-centred DRR. The agencies found it relatively straightforward to establish the coalition in Nepal because of the close values the four agencies share and because they were able to use the global level coalition framework to model their memorandum of understanding. Working together as agencies to prepare for the International Day for Disaster Reduction in 2011 (which focused on children and young people) provided a key opportunity to kick-start this coalition, which could be replicated in other interested countries.

Davao, the Philippines – ready for the next flash flood?

- **Fewer disaster risks than most other Philippines locations**
- **Active government with commitment to DRR principles**
- **Low density allows for efficient evacuation and rescue**

BUT

- **Low visibility of poor or informal communities**
- **Less funding for disaster mitigation than other cities**
- **Little ability to predict and prepare for new threats**

PHILIPPINES AT A GLANCE	
Population:	94.2 million
Percentage in poverty:	41.6%
Percentage urban:	66.4%
Percentage children:	35.3% (33.3 million)
HDI ranking:	112 (medium)

CLOSE-UP ON DAVAO	
Population:	1.46 million
National urban growth:	2.4%
Land area:	2443 km^2
Hazards:	Earthquakes, civil unrest, flash flooding

FLASH FLOOD:

"Flooding that develops very quickly on streams and river tributaries with a relatively high peak discharge; usually as a result of thunderstorms. Sometimes the onset of flash flooding comes before the end of heavy rains. There is little time between the detection of flood conditions and the arrival of the flood crest. Swift action is essential to the protection of life and property."

Other Asia Pacific flash flooding hotspots:

- Bangladesh
- Cambodia
- China
- India
- Indonesia
- Myanmar
- Thailand
- Nepal
- Vietnam

Davao's dark side - civil unrest and terrorism

The city has largely lost its reputation for violence that once earned it the nickname "Murder City". Memories linger, though, of some of the Philippines' worst terrorist attacks over the last 10 years.

2003: Airport bomb, 21 killed, 150 injured

2003: Wharf bomb, 16 killed, 50 injured

2005: Bus stop bomb, 5 killed

2008: Bus bomb, 7 killed, 30 injured

2012: Grenade attack on military at circus, 41 injured including 12 children

The Philippines' location in the Pacific Ocean between the Pacific and Eurasian Tectonic Plates renders it vulnerable to storms, floods, earthquake and volcanic activity. About 60% of the country's land area and 75% of its total population are at high risk from one or more of these hazards, and the nation is ranked eighth in the world in terms of natural disaster risk[51]. Around 3.7 milliion people are affected by disasters in the Philippines each year[52].

The population of the Philippines is around 94 million and is growing by an average of 1.9% annually[53]. Around one-third live below the poverty line, and two-thirds are dependents – either children or the elderly. Urban centres thrive across the nation's different islands, each facing a different set of issues and achievements in terms of employment, environment and cultural diversity. Already 66% of the population are urbanised and living within just 3% of the total land area. Average urban density is more than 6000 people per square kilometre, and an estimated 44% are living in slum conditions[54].

In comparison to the difficult living conditions of some of the other urban agglomerations in the Philippines, Davao City could be considered a breath of fresh air. Often referred to as one of the Philippines' most livable cities, it is protected from tropical storms and cyclones, has a thriving economy, plenty of produce from the sea and agriculture and a population of just under1.5 million[55]. It lays claim to being the largest city in the world in terms of land size, allowing room to move and space to grow. From the governance angle, the local mayor is active and supportive in child friendly policy and also invests in disaster risk reduction[56].

On the outskirts of this city, though, Davao's slums echo much of the poverty, discrimination and reduced opportunities for children visible across the Philippines. Barangays (local administrative wards) where the urban poor live are sometimes as densely populated as in Manila, and services differ widely depending on whether the community is legally permitted or squatting. In some areas, up to 60% of children work alongside their parents as factory workers or security guards rather than attending local schools.

Because Davao is not really considered a "poor" city, there is limited external pressure on local government to meet accountabilities towards the most vulnerable. The urban poor here tend not to live along thoroughfares as in many other towns but are concentrated in industrial and wharf areas where casual work is available. This renders them less visible than in other contexts. As a result, the most vulnerable people of Davao are largely left out of policy consultation or census statistics.

Davao is likely to change extremely quickly over the next ten years. Population growth of around 2.4% per annum exceeds the national average and is higher than in more established cities such as Manila[57]. Many new residents arrive with very few resources of their own. Some are leaving traditional lifestyles in search of urban jobs, but many are arriving as displaced people from disasters elsewhere on the island – 2011's Cyclone Washi displaced up to 375,000 people long-term[58] – or to escape the civil unrest that has been prevalent over large parts of the island for most of this century.

WHAT'S WORKING IN THE PHILIPPINES?

National DRR Policy / DRRNet

WV Philippines is the lead convener of the Disaster Risk Reduction Network (DRRNet) Philippines, a network of DRR advocates and practitioners who focus on the Philippines' increasing vulnerability to disasters, and who have pushed recently for DRR policy reform. Targeting national legislators (District Representatives and Senators), key government officials with executive functions, the coalition aimed to raise awareness and build capacity at national and local levels, conducting public forums and engaging the use of media. The network included international NGOs such as Christian Aid and Oxfam, as well as key organisations such as the Center for Disaster Preparedness and Citizens' Disaster Response Center.

They have seen success through the enactment of the Philippine Disaster Reduction and Management Act 2010, which shifted the policy environment and the way the country deals with disasters from mere response to preparedness. The bill was passed and signed into law on May 27, 2010. The new law provides a comprehensive, all-hazard, multi-sector, inter-agency, and community-based approach to disaster risk management through the formulation of the National Disaster Risk Management Framework. It will support existing disaster management acts, which are aligned with the Hyogo Framework for Action and the UN International Strategy for Disaster Reduction.

DRRNet continues to advocate for greater inclusion of sustainable development into disaster management with broad-based civil society organisation involvement both at the national and local levels.

Davao's children

The Philippines has been proactive in recent years on inclusion of children in DRR and other governance matters, as well as pro-poor policy to empower slum communities, and there are many examples of efforts from civil society and local NGOs to find logistical and financial solutions to alleviate slum disadvantages. Entrenched poverty remains a barrier to social change, however, and some past solutions such as forced relocation have been rights violations in themselves. In the meantime, one in 10 children in Philippines slums suffers from respiratory illness, and one in five is living with a minor or severe disability[59].

While some of the slums of Manila date from the 1950s, Davao's urban poverty is more recent, in line with a rapid spike in migration in the last two decades. This means that many children have made the switch from rural to urban in their own lifetime rather than being born a city dweller. As a result, families' awareness of rights and services in the urban environment is challenged by their isolation from public messaging and policy instruments. Children out of school know very little about the systems in place to protect them; UNICEF reported in 2005 from Davao[60]: "When asked who they approach for help when they get sick, or when they have other problems, the children replied that they simply go to their mother. While most of them are aware of the presence of various authorities and institutions in their community (e.g., barangay officials, barangay health centre, Red Cross), they have not sought these services and are uncertain whether their mother has done so."

Around 10% to 15% of urban children are living without parents, either caring for themselves and siblings in slum housing or homeless altogether. There are around 200,000 street children across the Philippines' urban areas; in Davao, around 13,000[61]. Peer influences for these children are extremely strong, and gangs can often form as a result. In 2009 Human Rights Watch accused the Davao municipal government and police force of complicity with regard to "death squad" targeted killing of petty criminals including children[62]. Exposure to this sort of violence even through hearsay is extremely distressing for children and likely to further reduce the likelihood that they will seek police help in an emergency.

Focus on flash floods

In disaster terminology[63] the difference between a flood and a flash flood is in timing – inundation that happens quickly, usually with little time between identification and climax of the disaster. It was virtually impossible to warn the residents of four barangays in Davao City in June 2011, when the Balusong River suddenly burst its banks. The water travelled through roads and other tributaries, one of them the Pangi River, where hundreds of families lived. The death toll reached 45, including many children, and up to 12,000 families were displaced.

The surprise element was exacerbated by the unusual nature of the disaster in itself. The city had not faced floods of this magnitude before and was unprepared in terms of monitoring and early warning of the danger. Some residents were able to receive a few minutes' warning because they were connected to social media or listening to radios. Most – including local authorities – had no idea such a thing could happen and were inadequately prepared for either a chain of warning or an evacuation route.

Flash flooding is not just an urban phenomenon, and some of the worst in terms of loss of life have happened in rural areas of India and Nepal. But it can hit unexpectedly hard in urban areas because of the decrease in permeable run-offs for water. The Davao flash flood was caused by around two hours of rain from a single, extremely heavy, downpour. The unpredictability of the result was not due to the weather – which was not unusual – but because of the changing shape and structure of the human settlements in its path.

Davao City Mayor Sara Duterte said afterwards that the city lacked money for flood-control projects as it was considered a low risk municipality. "We did not expect (floods) to be that high. We expect that it is normal for that river to overflow in some portions. But last night, all areas were flooded."[64]

Preparation in terms of monitoring risk for flash flooding is likely to be lagging behind in many other paved and concreted cities too. For instance, flash flooding in Singapore took residents and authorities by surprise in 2010, turning the famous shopping district of Orchard Road into a river. Singapore's national water agency believed at the time that their 1984 upgrade of city water drainage should still have been effective, and were unable to identify with clarity why the flash floods occurred[65]. Flooding returned to the city to a lesser extent in 2011 and 2012. This indicates that even with sufficient resources and intentions, city planners are not predicting and mitigating the dangerous urban combination of increased rainfall and decreased permeable land.

Technology brings early warning for students[66]

The Davao City Department of Education's early warning system for schools was put to the test in February 2013 – and passed with flying colours. When Davao City Mayor Sara Duterte called for classes to be suspended ahead of Typhoon Crising, the information was released quickly and accurately using social media and a text message "tree".

The Department first introduced these mechanisms for prompt communication in August 2011. They include the DRRM Facebook Account, which has also been used to raise awareness and public response by young people to disasters faced elsewhere in Mindanao. After trialling it in a real emergency, the Department of Education website praises the process for its clarity and practicality when an urban crisis is pending, and for including students as participants in the communication of urgent information.

Displacement feels temporary for adults, permanent for children

Children displaced by flooding usually know that they are lucky to be alive but can be badly shaken by their experiences, particularly when their houses or possessions have been destroyed. Noriel, aged eight, is one of those children. She survived the Davao flash flood by clinging to a rope inside her house along with her mother and two siblings. Almost everything else inside, including furniture and clothes, was washed away. The family returned five days later to inspect the damage and consider their options.

"When I came to see our house, I was very sad. I didn't think it would be like that. It was full of mud," remembers Noriel. "I thought, this isn't our house, and I cried a lot."

Returning home will be possible for Noriel's family because the house is still standing. However, it will take time. "My parents couldn't buy the materials we needed because we're poor," she explained. In the meantime they will continue to shelter with relatives, a better option than living in the temporary evacuation centres nearby, where according to Noriel "...there are too many in a room, there is no water and the toilets don't work."

Other children like Vince, also eight, found they had nowhere else to go. Two weeks after the flash flood, he and his family were living under sheet tents inside the local elementary school. For him, there was no house to return to – it had been among hundreds that collapsed into the swollen Pangi River on the night of the disaster – and no local relatives to shelter the family in the short term. Vince was sad about his own failure to rescue at least some of his possessions. "I didn't save anything," he said. "The flood took away my uniform, shoes, bag, notebooks, pencils, books, and toys."

As the majority of schools in the local area were called upon to shelter displaced and homeless families, all of Vince's familiar routines have been shattered. Getting children back to school is a major logistical challenge after most disasters; here, the school principal was approached by World Vision to provide facilities and staff for an interim Child Friendly Space (CFS). While he had not worked with the concept before, he was impressed by the model. "This is a healthy transition for the students while formal education is being re-established," he said. "Children under stress generally do not perform as well at school and thus they often need a more holistic, less academic curriculum."

A young boy surveys wreckage by the river after Davao's 2011 flash flood. Sights like these are naturally distressing for children and can haunt them long-term.

Though Vince was still shaken by about his recent experiences, he showed little anxiety about his future. For him, "temporary" shelter was becoming the new reality. He was happy to join in with the CFS activities and to hold pencils and books again.

He used them to draw pictures of the flood, still foremost in his mind. "I fear flooding because it took away our house including my school stuff," he said.

Chittagong, Bangladesh – ready for the next landslide?

- **Ahead of any other South Asian country in terms of integrated disaster management and community-based disaster preparedness**
- **Able to prove that disaster risk reduction strategies are saving lives**
- **Urban planning policies including mangrove reforestation in Dhaka**

BUT

- **A rapidly growing city; difficulties in planning and safeguarding poor urban neighbourhoods**
- **Land use change and hill clearing has continued unchecked**
- **Tenanting continues on land recognised as uninhabitable**

BANGLADESH AT A GLANCE	
Population:	142.9 million
Percentage in poverty:	76.5%
Percentage urban:	25.4%
Percentage children:	31.0% (44.3 million)
HDI ranking:	146 (low)

CLOSE-UP ON CHITTAGONG	
Population:	3.9 million
National urban growth:	2.9%
Land area:	157 km^2
Hazards:	Cyclones, storm surges, flooding, climate change/loss of land, landslides

LANDSLIDE:
The usually rapid downward movement of a mass of rock, earth, or artificial fill on a slope.

MUDSLIDE:
A type of landslide that occurs when the slope is saturated with water. This more destructive flow can pick up rocks, trees, houses and cars. As the debris moves into river and stream beds, bridges can become blocked or even collapse, making a temporary dam that can flood neighbouring areas.

Other mudslide/landslide hotspots:
- Indonesia
- Papua New Guinea
- Philippines
- Solomon Islands
- Sri Lanka

Bangladesh is a young nation of just over 40 years, and despite a relatively low level of urbanisation, one of the most densely populated nations in the world. The land mass of Bangladesh is mainly coastal or river delta, providing a river silt path between the Himalayas and the sea. As such, the coastline is constantly changing, with erosion and permanent displacement a common experience for the people of coastal Bangladesh.

Historically since the 1960s, government policy has recognised the importance of a green coastal belt and taken policy and investment steps to protect its mangrove forests[67]. However, the pressures of population and the resulting value of land have challenged this policy in recent years, while climate change has made more land than ever before vulnerable to repeated inundation or erosion. Bangladesh was extremely lucky that Asia's 2004 tsunami did not approach from a different angle – it is estimated that a tsunami of just one metre could severely damage coastal Bangladesh, putting around 4.6 million people at high risk[68].

Disaster mitigation and community preparation in Bangladesh is considered to be saving lives[69]. Response capacity is high, with the Government of Bangladesh a committed partner to municipal governments on preparedness and response. The overall density of coastal populations reduces the delineation between urban and rural areas in terms of risk and response, and several local governments must be ready to mobilise as one in each cyclone season.

It is working. Though 2007's Cyclone Sidr was considered the storm of a lifetime, including a storm surge of five metres, millions of people received and responded to early warning and evacuation messages. The final death toll was less than 3% of fatalities recorded from the 1991 Chittagong cyclone, one of the deadliest storms on record[70].

However, while the government's record on increasing survival rates is admirable, other aspects of risk reduction remain under-prioritised. In particular, changing land use requirements and poor enforcement of environmental protection policies are increasing risk vulnerabilities in terms of property, livelihoods and overall economic impact.

Situated directly on the Bay of Bengal, Chittagong is Bangladesh's second largest city and its commercial capital, where around 40% of the nation's total industry takes place[71]. As such, it is considered a city of great potential for Bangladesh's economic growth, and transportation between Dhaka and Chittagong is currently being upgraded accordingly. With the city growing more rapidly than Dhaka, land for industry and housing is becoming scarce. Almost all the mangrove forests near Chittagong have now been cleared to make way for this alternative land use[72]. Rural communities nearby are experiencing reduced agricultural yield land due to salination, which has also affected the urbanisation of the area in terms of employment dependency. Some reclamation of land has taken place in the area, often privately and without close legislative monitoring, then tenanted out to new arrivals[73]. Slum areas currently account for around 35% of Chittagong's population[74].

The Chittagong City Corporation and Chittagong Development Authority are jointly responsible for the city's planning and safe expansion, with the latter also owning and leasing a number of plots of land for revenue purposes. Local administrations work together under the Standing Orders for Disaster Management, a national initiative to clarify roles and responsibilities. An active Disaster Management Committee also operates through the Chittagong City Corporation. These bodies are as likely to partner with international donor agencies directly as with their own government, and report that their budget for disaster resilience remains insufficient. Mangrove reforestation, an important strategy for reduction of land degradation in other parts of Bangladesh, is not yet taking place in the vicinity of Chittagong[75].

Chittagong's children

Children in urban Bangladesh are probably living with challenges similar to those of their rural counterparts, and in some aspects could even be considered slightly disadvantaged. While the percentage of children at school is above the national average in urban areas, it falls drastically to around 18% for children living in slums[76]. Malnutrition rates are also high among the urban poor.

Water in all its forms represents a risk for children in Chittagong. The city is prone to floods from above and to inundation from the sea. Nearly 90% of urban households nationally collect tubewell or surface water rather than having their own source, and less than 10% of slum families have access to improved sanitation[77]. This means increased chances that water sources will be contaminated, leading to diarrhoea and typhoid outbreaks.

Some of Chittagong's children are not in school because they are working, including in hazardous conditions or for unscrupulous employers. While this, too, is a problem not confined to urban areas of Bangladesh, the jobs available to children in cities will often take them away from the supervision and influence of their families to stay with strangers. More boys than girls are working[78]. Boys in female-headed households are under great pressure to become the breadwinner because often their opportunities and wages will be greater than their mother's.

The participation of children in the political process or decision making is low in Bangladesh, and not recognised formally through government partnerships with children's groups. In the last ten years, however, a structured Child Parliament has formed with representatives from all 64 districts of Bangladesh. Parliament meets once a year with the support of Save the Children and Plan International to discuss themes affecting children, including education, infrastructure and exploitation. In 2004 the children joined then Finance and Planning Minister Mr Saifur Rahman on national television; in 2006 they called for laws to protect children from political exploitation, saying "We want to be aware, but we do not want to be exploited by being involved in risky political activities."

While disaster risk reduction for children has not yet been a primary agenda item for the Bangladesh Child Parliament, it has been raised as part of other discussions. Here are the children's 2010 recommendations for making education more resilient to disaster[79]:

In the disaster prone areas, schools are closed for a long time after any disaster. Also because of the poor financial condition, the children cannot afford to buy the educational materials again if it is damaged during the disasters and thus tend to lag behind.

Recommendations:

- ***To decrease the vacation period of the schools located in disaster prone areas***
- ***Instead of summer and winter vacation, the holidays should be announced when the disaster occurs***
- ***Include educational materials in relief***

Focus on landslides

The sudden onslaught of a cyclone may wreak large scale havoc, but less spectacular weather events have potential to be just as disastrous at local level. Heavy rains in Chittagong regularly cause the collapse of river banks and hills, triggering deadly flash floods and landslides or mudslides. The city has been placed further at risk by inadequate natural resource management, with the 1995 ban on hill clearing around Chittagong largely unpoliced and therefore ineffective[80]. In June 2007, 127 people were killed by landslides in Chittagong; in August 2008, 11; in June 2010, 53 (Cox's Bazaar); in June 2012, 95; so far in 2013, 2[81].

Landslide impact is characteristically localised, though its effects can be further-reaching if the movement of earth or debris triggers flash flooding. As with quakes, advance warning and evacuation for landslides usually do not take place. Houses are buried along with the people inside them. Rescue operations are notoriously difficult because of the continuing rain and threat of further earth movement.

However, recognition and mitigation of risk for landslides, particularly the shallow landslide phenomenon which affects Chittagong, is possible and achievable[82]. Contributing factors are very well understood. Firstly, landslides occur on hills; secondly, reduced vegetation on a silt-based topsoil aggravates the risk; thirdly, landslides usually occur after several days' continuous rain. In a monsoon climate like that of Bangladesh, rains are seasonal; though their scale may be increasing due to climate change, the season of risk is predictable. Therefore victims of landslides are usually living in areas that can easily be recognised as high risk, and can be assisted to evacuate or permanently relocate. The community affected by the 2008 landslide were in the process of relocation, and local landowners were criticised heavily for continuing to build and rent out structures on land known to be uninhabitable[83].

Chittagong's experience in disaster response helps them with a rapid recovery after these emergencies, and the 2007 events also highlighted political accountability for firmer implementation of urban land management practices[84]. However, Chittagong's slum communities are not currently playing a significant role in the decisions made on their behalf. Local authorities report that communities are resistant to moving from unsafe hillside locations on the grounds that they may lose what little they have. This is a common issue with relocations globally, and one which must be addressed sensitively and with recognition of rights. An integrated and pro-poor land management policy is required for Chittagong, including the reforestation of exposed hillsides and appropriate public housing sites that encourage voluntary relocation.

Disaster evacuation drill, Bangladesh.

WHAT'S WORKING IN BANGLADESH?

Behaviour change evident in urban Dhaka

The regularity and devastating impact of natural disasters along Bangladesh's coastline places pressure on its government to take all measures possible on disaster risk reduction. To some extent, strangely, their efforts have been helped along by recent Cyclones Sidr and Aila. Post-disaster recovery phase provides good opportunity to integrate DRR into rehabilitation and development work. Communities and authorities alike will do all they can to avoid a similar situation in the future, and budget for risk reduction and education can be siphoned from the overall relief budget and justified as an investment into "disaster proofing."

In the last five years, Bangladesh's national policy has influenced the capacity and commitment of municipal government who in their turn have ensured implementation of laws, regulations and standards as communities rebuild. Local World Vision staff reported in 2012 that urban communities are responding positively to elements of disaster risk reduction within their control, and that their willingness to change behaviours for greater disaster resilience will also contribute to a more liveable city long-term. They include:

From citizens:

- Landowners understanding and adhering to new government building codes, including demolition and replacement of unsafe structures in partnership with official house developers
- A greater use of public garbage bins, and less littering in streets and waterways
- Greater attention to public awareness campaigns through the City Corporation Counselors, for instance, on putting out ovens and stoves after cooking, or on contacting the fire brigade quickly.
- Adoption of a new practice of applying fire resistant mud to protect wooden walls in kitchens
- Many successful and popular initiatives of "zero land" farming using city rooftops

From governments:

- Laws for minimum standards of rental housing for tenants in poor communities
- Increasing the height and stability of low-lying roads
- A new system for early warning on landslides in Chittagong to allow evacuation of high risk areas
- Work on city drainage in Chittagong and Dhaka, including broadening sewage pipes and removal of rubbish from canals and drains
- Legislated introduction of compressed natural gas (CNG) rather than petrol scooters in both cities to reduce carbon dioxide emissions
- Construction of new flyovers and diversion roads to avoid heavy traffic in the cities themselves

Port Moresby, Papua New Guinea – ready for greater urban safety?

- **Strong community will for change**
- **Some positive examples of community-based solutions to urban violence**

BUT

- **Like many Pacific nations, a young and often disenfranchised population**
- **Traditional values break down in cash-based urban living**
- **Governance challenges at national and local level; high dependency on international aid**

URBAN SAFETY:
"Communities and assets free from crime, violence and related fear... the interventions which aim at ensuring freedom and avoid aggressions among persons and against their private and public goods, as well as against the use of the city, its equipment and public spaces by its residents or visitors to the city."[85]

Other Asia Pacific urban safety hotspots:
- India
- Indonesia
- Philippines
- Solomon Islands

PAPUA NEW GUINEA AT A GLANCE	
Population:	7.0 million
Percentage in poverty:	57.4%
Percentage urban:	12.5%
Percentage children:	38.9% (2.7 million)
HDI ranking:	153 (low)

CLOSE-UP ON PORT MORESBY	
Population:	284,000
National urban growth:	3.8%
Land area:	2443 km^2
Hazards:	Earthquakes, tsunamis, civil unrest, volcanoes

"Children growing up are exposed to numerous and complex risk and resilience factors in their home and community. These factors shape the child's sense of self-worth, determine strong or weak self-esteem, influence their values and approach to life, and either equip them (or not) with the skills and confidence to navigate through difficult times."

Urban youth in the Pacific: increasing resilience and reducing risk for involvement in crime and violence , UNDP Pacific/AusAID

Papua New Guinea is included among the category of "small island developing state" or SIDS, though its land mass is larger than Sweden's and its coastline stretches 5152 km. The country is considered high risk in terms of many natural disasters, located on the Pacific Ring of Fire tectonic hotspot and prone to earthquakes, tsunamis and volcanic eruptions as a result. In 1998, a tsunami triggered by an undersea earthquake killed over 2000 people in a rural area[86]; in 2004, a volcanic eruption on the island of Manam forced permanent resettlement of around 14,000 of the island's inhabitants[87]. Since then natural disasters have occurred regularly, though on a relatively low scale, and the entire nation is in need of strengthened disaster preparedness and response capacity.

Declared independent in 1975, the nation has low levels of urbanisation. Most of its citizens are living diverse traditional lifestyles in relative isolation from one another. Because of this, urbanising Papua New Guinea presents major challenges to the rural traditions and values under which communities have operated in the past. Two of these values are particularly difficult to maintain while living in urban poverty – "subsistence affluence" whereby possessions and resources have extrinsic value in themselves, and *wontok* which calls for generosity with those possessions and resources including to extended family[88].

Unlike in most cities, the advantages of urban living in PNG are difficult to itemise with any confidence; in fact it is among the least liveable cities in the world. Unemployment is high, crime unchecked, foodstuffs primarily imported, and the cost of living completely unsuited to a poor and cash-dependent population. The national government historically lacks capacity to maintain infrastructure or social programmes, taxation revenue is minimal, and there is a high dependency on international aid (Australian aid in particular, which provides around 14% of the national budget)[89] to solve problems.

This might indicate that the drivers of urbanisation in PNG are different than in other nations, but in fact they are primarily the same. Firstly, there is still an interest, from young people in particular, in exploring the comparative advantage and freedom of urban living and its potential to provide new opportunities. Secondly, displacement of coastal communities from their usual pastimes due to actual and predicted rising sea levels is causing some of the urban migration pattern – common across many SIDS.

Lastly, people are simply having more children, and their survival rate is higher, in urban areas. Port Moresby is currently witnessing a "youth bulge" with around 70% of its population estimated to be under 29 years of age[90], and the majority of these unemployed or working casually. With expectations of increased wealth and employment when a national gas mining project commences around 2014, Port Moresby is projected to grow further, and quickly. It is not the only urbanising centre in PNG, with towns such as Lae and Madang also exhibiting similar patterns of growth, violence, limitations to services and youth disenfranchisement.

The National Capital District Commission (NCDC) was established in 2001 to administer Port Moresby's municipal requirements and services. Though not without internal challenges of integration, capacity and community consultation, the NCDC has proven itself to be a stable resource for Port Moresby, undertaking the delivery of many internationally funded programmes for residents[91]. It faces two main challenges – access and acceptance by many of the peripheral communities who are among the most vulnerable, and sustainable funding that can be mobilised from within the PNG economy. In the event of a natural disaster in Port Moresby, the NCDC may not have administrative power to direct national bodies such as the PNG Defence Force or Royal PNG Constabulary, nor do these bodies have sufficient resources in terms of equipment, fuel or personnel to respond without significant international assistance.

Port Moresby's children

There are very few children in Port Moresby *not* living in conditions that render them vulnerable to hazards. Though living in the city brings children closer to services such as healthcare and education, their parents or carers may choose not to use these services. Malnutrition and tuberculosis are present in large numbers of the child population, and one in three young people in Port Moresby is illiterate[92]. Half are living in squatter settlements which are not built under any form of planning approval and are usually on land belonging either to the government or to the traditional inhabitants of Port Moresby, the Motu-Koitabu[93].

Children report tensions as a result of land encroachment and a corresponding loss of traditional power and culture for the Motu-Koitabu. A hesitation to recognise squatter settlements leads to further disadvantages for children living there, because the government does not provide education, healthcare or water services to the scale required[94].

Exposure to violence including gender-based violence is a very strong negative influence for children across the city. Children witness domestic violence inside the home or between neighbours, and violence at school is also increasing. Some children do not go to school because of the danger of travelling there. Others are perpetrators of the violence, caught up in the cycle of unemployment and substance abuse that carries many boys through their teenage years. Girls are more likely than boys to stay at school and to avoid criminal activity. Where they do commit a crime it is more likely to be as a service to the family – for instance, theft of money or accessory to a robbery – while boys are more likely to commit crimes in response to peer encouragement. One in five young men has taken part in a rape, and around one in forty has witnessed or taken part in a murder[95].

Despite these daunting statistics, the majority of children in Port Moresby are law-abiding and interested in improving their opportunities. Inclusion of children in decision-making has been challenging because of the overall gaps in governance and community consultation, and to a certain extent because the most vulnerable children are actively avoiding conversations with authorities. Whether a perpetrator or a victim of crime, children have witnessed brutality and rights abuses from many in the police force, and trust is mutually low.

Youth policy is overseen by the Minister for Religion, Youth and Community Development; to date there has been no move to include children or young people as delegates to parliament. This is a pity because the views and experiences of children and teenagers in Port Moresby are essential for planning and enacting protective policy on their behalf (see Albert's story, p. 48).

WHAT'S WORKING IN PNG?

Safer Cities Campaign

"The Safer Cities Programme of UN-HABITAT has been accumulating theoretical and practical knowledge on urban violence prevention issues for almost fifteen years. Focused on urban management and vulnerabilities regarding urban violence at a local level, Safer Cities has developed specific tools and strategies to address urban vulnerabilities around violence and social offences. Safer Cities Programme provides its partners and other interested and implicated organisations with knowledge, tools and technical support to contribute to the development of urban safety and social cohesion.

"To date, Safer Cities initiatives are well under way in several African cities and are also being replicated at the national level in some of the pilot countries in Africa. The programme has been extended to Latin America, Asia and Port Moresby, Papua New Guinea, catering for an increasing need for exchange of information, knowledge and good practices between national, regional and local governments as well as civil society, non-governmental organisations and the international level."

from the Safer Cities website:
http://ww2.unhabitat.org/programmes/safercities/

UN-HABITAT has recently published a Safer Cities Toolkit specific to the challenges of nations of the Asia Pacific region, available at:
http://www.unhabitat.org/urbansafetytoolkit/toolkit.htm

Focus on urban safety

The concept of urban safety recognises that some emergencies are neither natural nor man-made in terms of their root causes, nor are they triggered by a particular incident or recognised by government or international disaster plans. Urban safety risk highlights the hazards implicit in ongoing community interactions when social cohesion has broken down. The occupants of some cities live in a constant state of emergency which places children at risk of displacement and injury and reduces the impact of community-based development.

The causes of endemic social insecurity are highly contextual. Usually, reduced or weak authority from government and law forces is coupled with informally claimed power structures until an element of lawlessness becomes the status quo. In response, police and the military may also operate under a code of lawlessness using extreme violence or even assassinations in their attempts to regain control. Urban tensions between factions may be at the heart of this, sometimes based on historical conflict, at other times newly emerging as a result of cross-exposures and conflicting interests between groups that are used to living very separately. The concept of territory is often important, with criminals or gangs agreeing among themselves on areas of control. Thus, though lack of social cohesion is by no means a uniquely urban problem, it is exacerbated in areas with a higher population density where territory is smaller and the numbers at risk from factional disputes higher[96]. However, each situation is different, and the *raskals* of Port Moresby are likely to be operating under different motivators, and thus require different responses, than the gangs of Bogota or Nairobi[97].

In the city of Port Moresby, statistics on crime, gender violence and gang coercion reveal a city under siege from its own inhabitants. Young people (15 to 24 years old) are particularly at risk from the social disintegration occurring around them, both as victims and as perpetrators. At this age, according to UNICEF, experiences of adulthood and responsible decision-making are limited, the brain is still developing and controlling impulses can be challenging[98]. Early introduction to alcohol, drugs and other substances is likely to further complicate clear thinking and ethical decisions. The breakdown of harmony within family and community compared to the rules of rural sharing and hospitality means that many young people are caught between moral codes, and some gang members report a "Robin Hood" motivation to their violent burglaries or car-jackings of wealthier urbanites.

There are strong associations between crime and youth disempowerment, particularly in terms of "frustrated ambitions"[99] and enforced idleness. In their 2011 report, UNICEF Pacific make the point that even though many young people have met targets for education and for health, they then "stall" because of extremely limited opportunities as adults[100]. Dependency on family past the point where young people would usually start to make their own way can further fuel internal disputes and force children – particularly boys but also girls – away from the influence and shelter of families altogether. Some of the most effective social programmes in terms of keeping children and teenagers safe from gang influence come about simply because they have something else to do, for instance, a youth or sporting group, vocational training or – best of all – school or a job.

A key challenge in cities or areas within cities that do not operate within the law is that policy participation of the vulnerable – including those vulnerable to pressure to perpetrate crimes – is diminished. Thus, in Port Moresby's most disadvantaged communities, neither perpetrator nor victim is involved in solutions. Jails are sometimes referred to as universities for young people in conflict with the law[101], and the national police are not well equipped to implement some of the promising work that has taken place at policy level on juvenile justice and decriminalising young offenders. Even statistics on what is happening are difficult to collect. Some gang members may be building the numbers through boasting, while other crimes - particularly crimes of domestic violence are likely to be under-reported and under-criminalised[102].

Though held back by fear and low trust in the law as a partner, communities are obliged to play a role in social risk resolution because the hazard comes from within their own social structures and behaviours. The NCDC is currently implementing an award-winning urban safety strategy, Yumi Lukautim Mosbi (YLM) or You and Me Looking After Port Moresby, which recognises the importance of behaviour change rather than increased policing to reduce the causes of social risk in Port Moresby. Ideas for a safer city are instigated and often implemented by communities or corporate partners – for instance, security companies responding to domestic violence calls, or bus safety wardens to protect travellers waiting or arriving at bus stops. Developing community pride and more regular, positive public interactions and discussions are also key goals of YLM[103].

Learning from what has worked in Port Moresby, through YLM and other urban youth or community-based projects, will help to continue the push towards a safer city, while an overall strengthening of governance and trust in the law and lawmakers will provide greater resilience long-term. This will take time and require an integration of strategies such as YLM with other national plans for development, economic resilience and disaster management.

Albert's story: The power of choice

In 8 Mile community, an urban settlement just outside of Papua New Guinea's capital of Port Moresby, vocational training intersects with life skills and community-based opportunities through the World Vision Children Are Priority (CAP) Project. The approach encourages participants to recognise choices and solutions to the problems they witness daily, and for peer influence to be channelled towards upholding community harmony. Albert's story below shows not just the value of programming that integrates this type of risk reduction, but also the potential for personal change.

The last born in a family of seven children, Albert was disenrolled from school in Year 11 after his parents failed to pay the fees. Angry with his parents at their lack of support, he ran away to Lae, Papua New Guinea's second largest city, where he took up criminal activities for the first time, then returned to Port Moresby to live with his aunt in the crime-ridden district of 8 Mile.

"To make ends meet, I bought and sold items on the street. The money I made was not big but enough for my food at the end of the day or to buy a new pair of trousers. If it was not enough, then I pickpocketed and stole so that I could buy food to eat," says Albert.

In August 2010, World Vision Children Are Priority (CAP) project staff approached Albert and other youth to organise youth sports at 8 Mile community. He enjoyed the responsibility and soon took up other opportunities for training that World Vision had to offer. He secured his first job, working in a shop, and later returned to World Vision to continue working as a child rights officer with a community children's education project.

Now 25, he is grateful that he was able to recognise the alternative choices open to him, and believes that good things do, indeed, come to those with the patience to wait. "I saw and believed in what World Vision was doing and wanted to link my community to the organisation. I am so thankful to the officers who believed in me and motivated me to become what I am today," he says.

"Before, I would never think of helping my community. Through my deeds, I gained respect, which has really built value in my life. My attitude, my belief, my whole life has changed."

Bangkok, Thailand – ready for the next flood?

- **Government consults communities on poverty solutions**
- **Disaster preparedness beginning to be taught in schools**
- **Local philanthropy on the rise**
- **Increased government financial and technical commitment to flood prevention and mitigation**

BUT

- **Flooding on the increase**
- **Challenges with integrating municipal and national water management systems**
- **Current flood management infrastructure may be outdated**

THAILAND AT A GLANCE	
Population:	67.6 million
Percentage in poverty:	4.6%
Percentage urban:	36.1%
Percentage children:	20.2% (13.7 million)
HDI ranking:	103 (medium)

CLOSE-UP ON BANGKOK	
Population:	9.3 million
National urban growth:	1.8%
Land area:	1568 km^2
Hazards:	Climate change/loss of land, flooding, civil unrest

FLOOD:
"The overflowing of water of the normal confines of a stream or other body of water, or the accumulation of water by drainage over areas, which are not normally submerged."

Other flooding hotspots:
- Bangladesh
- Cambodia
- China
- India
- Indonesia
- Lao PDR
- Philippines
- Sri Lanka
- Vietnam

Thailand's wealth as a nation is often described as relative – in that compared to its South East Asian neighbours it shows a higher HDI, lower levels of poverty and stronger indicators for the health and well-being of its children[104]. When the wheels of this economy are turning smoothly, the nation's prospects are bright in terms of manufacturing, services and tourism. The government provides a higher level of public service than many of its neighbours, with some welfare available for disadvantaged families as well as a largely praised public healthcare system.

Much of this is to do with the accessibility and prosperity of Bangkok; in fact, three massive setbacks over the last five years have served to show how dependent the nation is on their capital city. The first two crises were man-made, firstly with protestors closing down Suvarnabhumi International Airport for nine days in 2008, secondly with riots that besieged the city centre for several days in May 2010. Both were economically damaging in terms of local recovery and international reputation; the second also cost lives.

The third, the 2012 Bangkok floods, has been estimated by the World Bank as one of the costliest natural disasters in history, setting back the economy by around $45.7 billion[105].

Bangkok as a city has a longstanding relationship with water, as it has been built across a series of plains and deltas prone to regular flooding. The municipal boundaries now stretch over more than 1500 km^2, and the average height above sea level is around two metres. A complex system of canals for transport and peripheral farming irrigation is integral to the city's structure, including well established floodgates and dams to control run-off at different times of the year. Like most large cities of Asia, Bangkok has faced problems of overcrowding, pollution and transient settlements by the urban poor along its waterways.

As tax generator in the wealthiest area of Thailand, the Bangkok Municipal Authority is largely self-funded and autonomously responsible for decisions made within its boundaries. It also partners from time to time directly with international donors on infrastructure or public services. Therefore Bangkok has a number of urban planning assets but faces urgent challenges in designing adaptation measures to respond to changes in climate and local environment.

The government has a good track record for resolving urban shelter issues – for instance, the Baan Mankong Participatory Slum Upgrading project in 2003[106], which channelled government funds directly to low-income communities so that they could make their own decisions on upgrading services and infrastructure. The city also has a burgeoning philanthropic culture, making it possible for local partnerships on poverty reduction to fill gaps in government services.

Though the government distributes some disaster preparedness materials in schools, it is not yet systematic and there is room for further improvement in quality and coverage. WV Thailand is currently in discussions with the Ministry of Education to improve disaster preparedness in schools as part of the ASEAN Safe Schools Initiative.

Bangkok's children

As a cultural rule, children in Thailand are loved and respected, and the national government has shown commitment to their well-being through projects for clean water, education and health including in remote rural areas. However, a number of social child protection concerns are emerging for the young people of Thailand's major cities, including teen pregnancy, drug use and gang membership. These issues are close to home for many children, especially for early school leavers. The most vulnerable are those growing up under the shadow of stigma as children of single mothers, sex workers or HIV positive parents.

The informality or illegality of squatting, which creates complex challenges to rights in other cities, is less prevalent in Bangkok. The majority of slum dwellers are paying rent, almost all are connected to electricity and most are using liquefied petroleum gas (LPG) for cooking[107]. Thus their children have a reasonable expectation of permanence in their surroundings, schools and healthcare usually nearby and occasional visits from government and independent welfare organisations. Whether or not they are benefiting from services intended to support and nurture them is dependent on their status as residents. Certainly the poorest families still face significant challenges in maintaining payments or protecting their possessions in insecure surroundings. Some parents do not know how to register themselves or their children as permanent residents; others choose not to because they are irregular immigrants from neighbouring countries and frightened to draw attention to themselves. This creates household vulnerabilities in terms of permanent shelter, services and employment which others may exploit, putting children and their parents at risk.

The Child Friendly City movement (see p. 19) is active in Bangkok, and children regularly participate in policy discussions. There are opportunities for greater inclusion of the most vulnerable children in these discussions, as child participants are usually from sectors of society that do not experience the worst effects of Bangkok's poverty or living conditions. The children who are out of school and disconnected from systems to protect their welfare will need additional support and encouragement to speak up about their rights.

Focus on urban floods

While flooding in a rural area can be considered a natural phenomenon, there are elements of the man-made about its effects in urban areas. As settlements expand, their residents start to manage water, often diverting its natural course or building over its banks and channels, and rarely in a planned and consultative way which recognises the shared ownership or natural patterns of the resource. Over many centuries, coastal cities have expanded and prospered through the basic strategy of barricading their water out. But today, though engineering is better than ever before, the increased risks due to population density, low permeability and climate change call for urgent reassessment of the barricade approach in cities.

Thailand's 2011 floods were initially rural, caused by unrelenting rainfall over several weeks. This was a slow onset disaster, with some window of opportunity for preparation and, in retrospect, mitigation. The lack of a national flood management committee with authority to oversee rural, industrial and residential areas meant that decisions were slow in coming and that provinces were largely working on their own. In total, 25 provinces saw major damage in terms of life and property, and another 38 were affected. Over 800 deaths were reported, mostly from drowning or electrocution, more than 75 of them children. Less easy to calculate were the illnesses or deaths caused by water-borne diseases, particularly among children who had not registered for help at evacuation centres. Tens of thousands of children were displaced, often indefinitely. Healthcare and education for children ground to a halt in the face of the magnitude of response required – around 3000 schools were damaged, and of the remainder, many were required as evacuation centres.

Tensions around the politics of flood management decisions taken were evident. A challenge to effective preparation including waterway management in Bangkok was the fear that evacuation or closure of the central business district could further impact the city's vital economy. However, the fight to delay flood waters in the city centre probably contributed to the severity of damage elsewhere in the country. Prime Minister Yingluck Shinawatra finally allowed the water to enter Bangkok's canals, quoted as saying, "We cannot block the water forever. We need areas that water can be drained through so that water can flow out to sea."[108]

It took over a month for the flood waters to recede to a safe level. As they did, it became obvious that assistance to the displaced would be a long-term commitment. The Bangkok Municipal Authority was not alone in resourcing and staffing this assistance; local and international NGOs were present from the outset, and international relief funding was mobilised from a variety of sources.

In November 2011, World Vision along with other children's organisations working in-country submitted a public statement to the Prime Minister of Thailand (see p. 53) urging that recovery efforts maintain a child focus, including as a priority the reopening of schools, provision of healthcare and support services to pregnant and lactating mothers.

With seasonal rains likely to become even heavier over time due to climate change, the events of 2011 cannot be considered a freak of nature. Less than a year after the Thai floods, the megacity of greater Manila also succumbed to flood waters with devastating results. The two emergencies show similar characteristics: a slow onset, unprecedented rainfall, a low-lying coastal city, and a response capacity based on belief that a city of that size must not be allowed to fall, rather than early mitigation to reduce the impact when it – inevitably – did.

Street scenes at the height of the Bangkok flooding, October 2011.

Evacuation is just the beginning of the hardship to come

by Renate Janse van Vuuren, response team member, World Vision Thailand

An evacuation centre is a great place – if you try not to think about it too much. But day after day, week after week, there's nothing to do there but think. About what happened, and especially what will be awaiting you once you go back home – or to what is left of it. Having to rebuild, rehabilitate, reconstruct, stay positive, pick up the pieces. The enormous uncertain future. You don't need to wade through waist-high water to understand the extent of the damage. It's right here, in the evacuation centre, where people with no power over their lives or destinies must simply wait to find out what happens next.

The story that sums it up for me is from Somwang, a 69-year-old grandma looking after her three grandsons. I met her at a large evacuation centre in Chonburi province east of Bangkok.

"The army trucks entered our street, they yelled that the water was rising very fast and that we should get out. It rose from about ankle-deep to over my head within an hour. We climbed through the roof and waited for the soldiers to rescue us."

That was more than a month before, and the family's wooden house was still standing in water. The few possessions they had were all gone.

Somwang became a Vietnam widow with six young children in the 1970s. Her only daughter – the mother of the three boys – disappeared two years ago. The father is a drug addict and alcoholic. Grandma Somwang kicked him out because "He was a bad influence on the boys". She receives a monthly pension of around US$17 dollars and washes other people's clothes – by hand – to ensure the boys have at least one meal a day, albeit only rice and chopped chillies.

This was their second shelter since the floods hit. Ten days before, the water rising, unpredictable and dangerous, hundreds of families sheltering around the old Don Mueang airport ended up being evacuated from – of all places – their evacuation centre.

"At least here the boys get regular meals and they get good stimulation at the Child Friendly Space. They do interesting crafts, they get toys and healthy snacks, and I can see they are really happy. They don't want to go back home. I can understand why. We have nothing to go back to, we've lost everything."

Around a week later, I heard that this family had faced a fresh tragedy. They were notified that that the boys' father was among those drowned in the flood waters a month before.

Letter to the Prime Minister of Thailand, Ms Yingluck Shinawatra, November 2011, from NGOs World Vision Thailand, Plan International Thailand, Right to Play Thailand Foundation, ZOA Refugee Care

Dear Prime Minister

The NGO community in Thailand is deeply saddened by the severe flood situation in Thailand, the worst in 50 years, and the effects that have impacted children and families. The Royal Thai Government (RTG) and all of its Ministries are to be commended for the steps taken so far to reach both urban and rural populations affected areas, while also minimizing economic impacts in industrial areas. There is now more than 1,700 shelters set-up across the country, where more than 113,000 people have taken refuge. Prompt implementation of the Flood Relief Operations Centre (FROC) indicated good disaster risk reduction planning followed by well coordinated field responses on flood prevention, mitigation and relief work by the Thai military, Royal Thai Navy, and Provincial Police Region 1. Evacuation centers are just one example of the effective partnering being done between government and NGOs and public and private sectors.

As you know, inundation has devastated 25 provinces, with another 38 affected. Most of the Central region has experienced water levels of between 10cm and 4m, while Bangkok remains tense as floodwaters continue to move toward inner areas of the capital. So far, 61 children aged 0-19 have died with over 2.1 million people in 730,000 households affected. UNICEF reports that 707,836 children from ages of 0-19 have been affected. At present, about 3,288 educational institutes have been impacted at an estimated cost of 2.5 billion THB nationwide.

On October 26, the Ministry of Foreign Affairs released the Flood Relief and Reconstruction Work Plan for 325 billion THB (later rising to 800 billion THB) outlining the responsibilities of the various government ministries. In addition to the estimated 6 billion USD in damage quoted by the Thai Finance Ministry as a pressing economic and social issue, there are many issues affecting the well-being of children and families that need attention. As a result, a number of NGOs and INGOs working on flood relief and planning flood rehabilitation in Thailand wish to highlight key priority areas that should continue to be integrated into emergency relief and recovery activities. As needs assessments are carried out by the RTG and partners, additional areas of priority will continue to emerge.

1) Health Issues Affecting Children

Ministry of Public Health is responsible for dispatching mobile medical units and restoring health clinics to treat patients in the affected areas as soon as possible, including the rebuilding of damages hospitals and stockpiling adequate medical supplies. In addition to the identified responsibilities described in the cabinet work plan, we recognise the government has begun to address the below issues and we encourage continued support for:

- A process for identifying and reaching high risk or vulnerable populations in communities for priority health services, such as pregnant mothers, mothers with infants or young children, orphaned or vulnerable children, children with physical disabilities or special needs, children needing regular ongoing professional medical attention or medication for chronic conditions;
- Medical professionals to support community monitoring mechanisms and provide education for caregivers and community leaders about diarrhea, dengue fever, leptospirosis, and malaria prevention in the coming days and weeks as the risk of water and vector-borne diseases rises;
- The provision of women and infant friendly spaces to promote breastfeeding, advice and supplies to improve infant and young child feeding practices, nutrition and growth monitoring, and educate parents about the importance of the first 1000 days of a child's life;
- Quality health services that are available and accessible to Thai and non-Thai children (i.e. check-ups, vaccinations, growth monitoring);
- People living with HIV/AIDS (PLWHA) or TB to be able to access reliable sources of medicine and professional medical services;
- Reliable sources of food, water, and drugs to be available in Bangkok and upcountry with fair pricing.

2) Education and Child Protection Issues Affecting Children

Ministry of Education is responsible for rescheduling examinations for high school students until the middle of November and assess and, where necessary, repair the damage to schools as well as tend to teachers and students so that special lessons can be provided. In addition to the identified responsibilities described in the cabinet work plan, we recognize the government has begun to address the below issues and we encourage continued support to:

- Provide life skills training to children and educate them about safe behavior in flood areas;
- Encourage the active participation of children and youth in running and managing community activities;
- Provide educational activities and temporary education supplies for children in flood-affected areas;
- Support psychology and stress management professionals to assist children in shelters and CFS sites.

Kolkata, India – ready to mitigate environmental degradation?

- **Disaster management integrated with planning bodies at municipal level**
- **Recent changes to vehicle emissions laws**

BUT

- **Living conditions for slum dwellers have changed little over several generations**
- **Children are exposed to unsanitary and polluted environments**
- **Water supplies are limited and easily contaminated**

INDIA AT A GLANCE	
Population:	1197.8 million
Percentage in poverty:	68.7%
Percentage urban:	31.2%
Percentage children:	30.4% (364 million)
HDI ranking:	134 (low)

CLOSE-UP ON KOLKATA	
Population:	14.4 million
National urban growth:	2.5%
Land area:	185 km^2
Hazards:	Fire, environmental degradation, flooding, tropical storms

ENVIRONMENTAL DEGRADATION:

"The reduction of the capacity of the environment to meet social and ecological objectives and needs... The sources of degradation are varied, and include land misuse, soil loss, desertification, wildland fires, loss of biodiversity, deforestation, mangrove destruction, land, water and air pollution, climate change, sea level rise and ozone depletion."

Other Asia Pacific urban environmental risk hotspots:

- Bangladesh
- China
- Indonesia
- Nepal
- Philippines

The pandemic of pollution

Currently, over one billion urban residents are exposed to elevated levels of air pollution. An estimated three million people die every year, directly or indirectly, from the effects of air pollution. Nine out of 10 of these deaths are in developing countries[109].

India, large enough to be considered its own subcontinent, is extremely diverse geologically, climatically, socially and culturally. Bordered by mountains, by conflict zones and by 6000 km of largely tropical coastline, the nation is at risk from every possible disaster scenario to some extent, from earthquakes and forest fires through to terrorist attacks. Already at 1,190 billion, India's population continues to rise, and so does the urban percentage of this. Of the 10 largest cities globally, three are in India – Mumbai (18.2 million), Delhi (15.0 million) and Kolkata (14.3 million)[110] – and three more are predicted to grow to 10 million or more by 2025 (see p. 15). India also has the largest number of urban poor, with up to 80% of the urban population living under the poverty line[111]. Unlike in many other emerging economies, the advantages and relative wealth of city life are not widely available in India's urban centres, with poverty statistics between urban and rural roughly equivalent[112].

Identifying any priority risk for India is therefore challenging. One-third of the country is drought prone, and droughts have been known to affect up to 100 million people. An estimated 400,000 square kilometres of India's land is exposed to floods annually; at least two or three severe cyclones hit each year. In addition, more than 50% of the country is seismically active.

Kolkata is built slightly inland of the north-eastern coast of India on reclaimed alluvial wetlands around the flood plain of the River Hooghli. It suffers much of the same storm and cyclone patterns as neighbouring Bangladesh, and is also considered at moderate risk from earthquake. As the capital city of West Bengal, it must also prepare itself for the likely scenario of hosting disaster refugees should climate change, coastal land erosion or earthquakes affect neighbouring towns. Disasters in India have resulted in almost 600,000 permanently displaced people per year over the last ten years[113]. All of these factors point towards the clear need for strong local planning and leadership on disaster risk but do not include one of the most complex hazards affecting most of India's urban hubs – the city itself, as a construction, consumer, exploiter and polluter built on already fragile ecosystems. In Kolkata, overpopulation combined with poverty and lack of infrastructure is proving to be deadly.

Kolkata is the oldest urban centre in India and was once the capital city of British India. It has a history of heavy migration and rapid growth, and most of its surrounds are also now urbanised with an estimated 45 million people living in the greater Kolkata Metropolitan Area. In addition around 6 million people commute from outside the boundaries to their Kolkata workplace. Response to rising demand for water and electricity, transportation and other infrastructure has focused largely on the middle class. The areas currently experiencing population growth and a corresponding spike in demand for services are less accessible and often poorly situated in terms of solid building foundations. This makes the provision of basic utilities and services a difficult and expensive venture. Even where gentrification is occurring with roads and paving to allow more effective transport, it may be adding to Kolkata's risk factor by making traditional runoffs for floodwaters less permeable, with a large proportion of the city's east – the natural drainage system for the Hooghli – now built up.

At about 35% of Kolkata's total population[114], the slum population of Kolkata is the second highest in India next to Mumbai, caused in part by an historical lack of affordable or public housing options and by increasing demand for real estate as the city's service industries prosper. There are currently an estimated 5100 slum settlements occupying about 13% of the city area and representing home for literally millions of children[115]. While new settlements continue to emerge on canals and swampland on the outskirts of the cities, some slums are several generations old – for instance, the "black hole" Motijhil slum where Mother Teresa began her ministry in 1946.

Thus, though extremely vulnerable to many hazards including fire, flood and health epidemics, slum living is also a traditional and oftentimes unquestioned hardship for many families and communities. Over 70% of Kolkata slum dwellers have been there for more than 15 years, and over 40% for more than 30 years.

The accountable body for Kolkata's disaster management is its urban government, the Kolkata Municipal Corporation (KMC). It operates a planning department, the Kolkata Metropolitan Planning Committee (KMPC), and a development wing, the Kolkata Municipal Development Authority (KMDA) as well as overseeing police and response activity within the city. In this it is ahead of many of its urban counterparts in that it can manage the affairs of the city separately from that of the state[116]. Budget as always remains an issue, and the KMDA in particular looks to national and international funds to deliver many of its infrastructure projects.

Kolkata's children

Around half of Kolkata's children are living in extremely challenging conditions; in fact, the scarcity of clean water for drinking and washing in[117], of a private and clean place to defecate, or of effective protection from the elements, is so common that children may not even recognise these as rights withheld.

Some slums are authorised, known as *bustees* and considered part of municipal responsibilities. Families living here are likely to pay rent for the land, though maintaining their own house, and have a legal right to stay long-term. The most vulnerable children are not living in bustees but in squatter settlements, where the added risk of illegal occupation contributes to a family's insecurities. Most children here do not go to school and may already be working as rag pickers, with the garbage dumped close to their front doors and choking the rivers and waterways on which these precarious settlements are built.

Children also suffer in multiple ways from the air pollution which plagues Kolkata. In 2009, around 50% of children were reportedly suffering from respiratory problems including asthma, while their parents and grandparents were statistically more likely to die from respiratory-related disease and cancers here than anywhere else in India[118]. Worst affected were families who live and work on the streets, including traffic policemen, auto-rickshaw drivers and roadside hawkers.

While both girls and boys are facing these challenges, girls may be more at risk because of ingrained gender inequalities within families and communities. Young girls face harassment and embarrassment without a safe and private toilet; it has been observed that both girls and women deliberately take less food and water to reduce their toilet trips. Girls are also less likely to be at school, and more likely to be inside their homes – the worst place to be when a disaster such as an earthquake or flash flood hits.

WHAT'S WORKING IN INDIA?

India's Corporate Social Responsibility Law[119]

Under a controversial new bill covering company law in India, corporations exceeding a certain size in terms of turnover will be required to spend 2% of their profits on socially responsible initiatives. While corporate social responsibility (CSR) reporting has been mandated in other countries, India will be the first to mandate expenditure. Companies are free to decide how they will invest the funds but must account to the Ministry of Corporate Affairs to show compliance to the law. As a form of directing funds directly to communities, this initiative may provide new solutions for localised problems but may also create new challenges and possibly also duplication in terms of community services.

It is likely that corporations will be looking for areas of investment that align with their own core work and values and which contribute to strengthening their own workforce and markets.

Disaster risk reduction is an appropriate corporate-community partnership to pursue, given the access that companies have through their employees and local relationships to informal social networks. Particularly as the bill is passed and implemented over the next two years, it will benefit NGOs and community groups to increase their knowledge of effective DRR practices, identify gaps in budget or political capacity, and proactively pitch ideas for integrated DRR approaches to the private sector.

Focus on environmental degradation

Kolkata is a traditional seat of economic power, but has never had high industry – coal and steel factories are located well to the west of the city. It can fairly be said, then, that the city's environmental risks stem from the city itself – from the transportation, sanitation, cooking and waste disposal requirements of its massive and under-serviced population.

Acute respiratory infection or pneumonia is the top cause of death for children under five globally[120]. In rural areas it has long been attributed to cooking fires in closed huts, but in cities with severe air pollution the hazard exists outside as well as in the home. Children's susceptibility is based on two factors – firstly, the extent of air pollution and secondly, the extent of their exposure to it. Thus this can be linked to poverty, because children living in inadequate housing or close to major roadways will be breathing in pollution particles most of the day.

Those most affected by this are not actually producing significant air pollution. The majority of slum dwellers do not own cars and travel on foot or by bicycle – even buses are out of reach financially for many poor families. Vehicle emissions, including the dangerous fumes of older auto-rickshaws, are causing most of the air toxicity. In fact, Kolkata earned the dubious crown of most polluted city in India only after Delhi introduced strict vehicle emissions laws[121]. In 2009 the Calcutta High Court ruled that the West Bengal government action on emissions was insufficient and a ban on all non-LPG auto-rickshaws was finally introduced[122]. However, it may take many years of careful policy to restore environmental balance, with solutions resting as much with communities and behaviours as with government planning. In fact, though emissions across India have registered a slight decline between 2005 and 2010, an increase is predicted by 2020 due to a rise in personal vehicle ownership[123].

Polluted waterways also represent health hazards, especially for children who live close to them. Rivers and canals are often used as tips in the absence of more formal garbage disposal, and industries ranging from furniture manufacturers to abattoirs also use rivers to quickly dispose of their offcuts. Contamination by faeces – human and animal – is unavoidable.

Most slum children know the dangers of drinking dirty water first hand, with diarrhoea a common and often dangerous affliction for families to deal with. Cholera, a highly contagious condition, is a constant threat particularly prevalent in children under two[124]. In the scenario of an earthquake or major flood, it is possible that all water sources for the city may become contaminated due to insufficient containment of reservoirs and other supplies[125]. In the meantime, Kolkata's poorest citizens are living in a permanent state of health crisis.

The most recent overarching legislation for the city in terms of disaster risk reduction appears in the West Bengal Disaster Management Bill, passed in 2006. While it mentions the environment it fails to mandate environmental risk reduction. The West Bengal Pollution Control Board, another authority that may have political power to legislate emissions reduction, has taken recent steps to legislate on protection of "eco-sensitive" areas elsewhere in the state but appears to be leaving the self-governing structures of Kolkata to take their own steps on urban resource management[126]. India's reluctance to commit to reducing emissions at national level also provides little incentive for state or local governments to act on reduction policy within their jurisdiction.

An integrated DRR plan for Kolkata should take into consideration the needs and rights of children living here, including their rights to breathe clean air, stay healthy and play safely. The Child Friendly City movement offers opportunities for children to be consultants to the KMPC in defining the future of this astoundingly complex urban environment.

Where do five million slum dwellers go to the toilet?

Sewage removal and treatment is a complicated and expensive system for old cities to retrofit. Kolkata's town sewage was built in the early 1900s with a city of 600,000 in mind, and a very different geographical imprint from the sprawling city of today.

Slum settlements that are not plumbed into the town system are usually located on river banks for exactly this reason. By building hanging latrines on platforms over the river, slum dwellers are able to keep their immediate area free from excrement. While less confronting and more private than open air toilets, this has severe implications for the health of the waterway and for children who may play in it.

When fire breaks out, history repeats

Apart from the other obvious challenges of life in a slum, residents live in constant fear of the disaster of fire. The causes are many: an electrical short circuit, a gas leak, or a household accident. With houses so close together and so flammable in materials and structure, the fire quickly spreads to affect hundreds of families.

In January 2013, a fire broke out in Basanti Devi (B.D.) Colony, one of the slums where World Vision works in North Kolkata. It started at around 5.30 am, caused by an electric short circuit. By the time the firefighters controlled the blaze three hours later, 121 houses had been destroyed, leaving their inhabitants homeless. World Vision along with the Kolkata Municipal Corporation moved into full relief mode, handing out food, blankets and other items to residents who had lost everything.

One of them was Khokon, a nine-year-old boy who evacuated along with many others thanks to the quick thinking of his father.

Why fire is a symptom of urban poverty

- Informal settlement houses are closely connected and are made of flammable materials like bamboos and tarpaulins.
- Residents may be collecting and storing materials like plastic bottles and other flammable garbage materials to sell.
- Residents may be trying to connect to unauthorised and unsafe electricity sources
- Children left alone to care for younger siblings may be cooking or using fire unsupervised

"I was sleeping and all of a sudden heard a great noise, people shouting 'Fire! Fire!' I came out of my house and saw blazing flames beside my house," says Khokon's father, Tapan Shikari. "I asked my wife to take our three children and run away from there, while I helped rescue a few other children nearby."

The speedy evacuation meant that no lives were lost. But recovery of routine and household security is taking some months. Khokon was only just returning to school in March, clutching his new school supplies as he said, "It will be great to be with my friends again!" Their house has not yet been rebuilt, and the young boy was feeling the heat of open air living but explained optimistically, "Soon we will have a house just like before and then it will not be so hot."

B.D. Colony has over 1100 houses like the one that Khokon's family lost. In the past, this community has had two fire accidents, one in 2000 and then again in 2010. So it is clear that this community is aware of the hazard of fire. However, many of the residents are now choosing to rebuild their homes in the same way as before, using affordable and readily sourced tarpaulin sheets and bamboo frames. These materials make houses easy to construct and are considered acceptable but continue to pose a serious fire hazard.

In many of World Vision's urban programmes across India, fire safety awareness has been part of the approach to reduce the risk of fire accidents and to train the residents on the urgent and immediate measures to take in case of a fire. "Disaster preparedness workshops have been conducted in these slums to help people know how to protect themselves and to reach a safe place during fires and other emergencies. Disaster preparedness committees have also been established in these slums," says Remi Manoj, Program Manager of World Vision's North Kolkata programme.

"However, the only long-term solution is to provide the residents with proper, planned housing."

Community-based organisations in many of Kolkata's slums have been advocating for this in recent years, asking their local government for better housing facilities, but progress on this goal is slow.

Residents begin the overwhelming job of cleaning up after a slum fire, B.D. Colony, North Kolkata, January 2013.

Jakarta, Indonesia

– ready for the effects of climate change?

- **Government is aware and acting on land subsidence**
- **Semi-autonomous local government allows for localised risk reduction**
- **Government has established its disaster management agency at national, province, and district level**
- **National Council on Climate Change (DNPI) established as dedicated agency for climate change in Indonesia.**
- **Poverty is declining**

BUT

- **Some vulnerable communities are not recognised or consulted**
- **Poverty in urban areas is not declining**
- **Relocation of the displaced is missing from the agenda: no comprehensive strategy for climate change adaptation**
- **Technology needs further investment**

CLIMATE CHANGE:
"A change in the climate that persists for decades, arising from either natural causes or human activity."

Other climate change displacement hotspots:
- Bangladesh
- India
- Papua New Guinea
- Philippines
- Sri Lanka
- Vietnam

INDONESIA AT A GLANCE	
Population:	241.6 million
Percentage in poverty:	46.1%
Percentage urban:	49.8%
Percentage children:	20.2% (48.8 million)
HDI ranking:	124 (medium)

CLOSE-UP ON JAKARTA	
Population:	9.6 million
National urban growth:	1.7%
Land area:	662 km^2
Hazards:	Climate change/loss of land, flooding

Community-based disaster preparedness put to the test

Flooding in Jakarta in January 2013 was among the worst in living memory, killing around 20 people and displacing over 40,000. The hazard could be traced back to heavy rains south and west of Jakarta, which fed the river systems flowing into the sea via the densely populated city. A comparison with the severe flooding of 2007 reveals that though the impact was greater, the water was actually of lesser volume. Inundation of major roads occurred because the water canal embankment in central Java broke. Jakarta West's canal overflowed and caused flooding of up to two metres. In North Jakarta, two of the four floodwater pumps were out of service, and the area remained under water for a week. The experience indicates that more must be done to ensure the city's disaster preparation remains current and primed for a significant event.

At the same time, World Vision Indonesia's Emergency Director, Billy Sumuan, reports that community-based preparation was shown to be effective in reducing the impact of flooding. In one area where World Vision was supporting the activities of a disaster management committee, volunteer committee members stepped forward in time with early warning and evacuation procedures. "Their actions and practices were very helpful in minimising the risk of fatalities in the area," says Billy.

Significant Jakarta floods and area affected

1980	1996	2002	2007	2013
770 hectares	2,259 hectares	16,778 hectares	23,832 hectares	41,000 hectares

Indonesia, the world's largest archipelago, comprises more than 17,000 islands which between them represent more than 81,000 kilometres of coastline. Indonesia has the fourth largest population worldwide (around 240 million) and a broad diversity of cultures, climates and geology. The total population is growing at an annual average rate of about 1.3% and poverty is considered to be declining. The proportion of Indonesia's workers engaged in agriculture has diminished from 55% in 1990 to around 36% now[127]. Some of that has been taken up by industry jobs, but the majority shift has been into services, which are usually urban and usually require education. Indonesia's rate of urbanisation is higher than most in Asia. Though cities take up just 2% of the total land mass of Indonesia, close to 50% of its population are urban residents.

Despite this, about 30 million Indonesians still live below the poverty line, in both urban and rural environments[128]. Children born into poor communities are more likely than others to miss out on education and healthcare including in urban areas. Emerging statistics indicate that levels of poverty in urban areas are actually higher than in rural areas, and often generational rather than within newly arrived populations.

As the first established city on the island of Java, Jakarta's long history is linked closely with the prosperity of the island, and urban planning has largely been based on economic, rather than population, priorities. Built around the estuaries of 13 different rivers, Jakarta's access to sea and land theoretically makes it ideally placed for trade. However, it also makes it susceptible to natural land subsidence; around 40% of the city is already under sea level[129].

Within Jakarta itself, population density is estimated at 13,809 per square kilometre, around 100 times the national average[130]. Concerted efforts have been made by a series of municipal governments to limit the size of Jakarta and slow its progress towards megacity status, but they have not been successful and may even have contributed to greater inequalities through complicated registration and cash deposit policies for arriving migrant workers. The city is expected to reach 10 million inhabitants very soon.

As with many urban hubs, satellite towns are absorbing the industry and housing pressures of central Jakarta, adding an additional daytime commuter population of over two million[131]. The Greater Jakarta Metropolitan Area, which includes Jakarta, Bogor, Depok, Tangerang and Bekasi (Jabodetabek), is home to 27.9 million people including over 400 slum settlements[132]. With central (DKI) Jakarta an autonomous region of long standing, some tension exists in assigning accountability for services outside the city boundary for residents who consider themselves Jakartans.

Around 40% of Indonesians, in urban and rural environments alike, are considered at risk from natural disasters[133]. Because of its location along the intersection of three tectonic plates (Eurasian, Australia and Pacific), Indonesia is particularly exposed to earthquake and volcanic activity, as well as some secondary hazards including tsunamis, landslides and forest fires; parts of Indonesia are also regularly inundated by floods. Large-scale forest conversion and land clearing have occurred on most of Indonesia's islands, but Java is considered the most "developed" of all. Jakarta itself is a coastal city and among the most vulnerable urban environments worldwide to the effects of climate change. Whether the sea levels are rising due to global warming, or the city is sinking due to groundwater exploitation, or both, the city's land is subsiding at rates of up to 10 centimetres a year[134].

The implications of this for vulnerable urban populations are clear. As Jakarta and its surrounds become closer to sea level, areas will become officially uninhabitable, particularly areas close to flooding rivers where many people already make their homes. Displacement of communities is likely to increase, but without clear planning for alternative, safer land, and with local livelihood opportunities as a driver, many others will simply stay put, in the direct line of floods and landslides.

Jakarta's children

Children growing up in Jakarta come from smaller families than their rural counterparts and represent a little less than 20% of the population. They are likely to be at school – education rates in Indonesia are high, and around 50% finish secondary school[135]. However, they face challenges in terms of protection from urban risks. Built over many years and under many different influences, the older areas of Jakarta face major challenges in providing adequate water and sanitation to households, and there is little separation between high-traffic roads and residential areas. This really is one of the world's best examples of the "concrete jungle".

Room to play is an urgent issue in this city, with only around 10% of the land used as green space[136] and haphazard peripheral development reducing children's ability to visit the countryside[137]. As a result, children are at risk from everyday hazards in their local environment – polluted or swollen rivers, traffic accidents, skin infections and injuries – as they fulfil their instincts to explore and play. The municipal government has pledged to increase green space to 20% by 2014, a positive move for the health of the city and its children.

The high population density coupled with existing livelihood challenges means that poor families keenly feel the economic impact of any natural disaster. Displacement can be a regular, even an annual, occurrence, particularly in areas prone to flooding. Household capacity to rebuild after disasters is weak, with most houses and personal effects uninsured, and the government facing an increasing frequency of expenditures on disaster response and relief. This pushes the level of poverty upwards, affecting children's opportunities and contributing to higher levels of malnutrition than in some of Indonesia's rural areas.

An aspect of Indonesian custom that increases the vulnerability of children in all settings is the low rate of birth registration. In order to access services such as education and healthcare in Jakarta, children need to be registered with a birth certificate. While this can be done at any age, the process for obtaining a certificate for children aged over 60 days is neither simple nor affordable, and many families choose not to pursue registration of their children. These children may not be counted in the census or statistics on child indicators, which means they are missing out not only on the direct advantages of urban services but also on consideration of their policy needs.

WHAT'S WORKING IN INDONESIA?

Corporate commitment to pre-positioned supplies

World Vision Indonesia started to partner with Procter and Gamble (P&G) in 2009. At that time the organisation was responding to Padang's earthquake. P&G offered to engage with the response by providing water purifiers (PUR). P&G brought their own expertise on water treatment, water filtration, and environment safety to the relationship, so that the donation was used effectively by internally displaced families to source clean water.

After the response ended, P&G agreed to continue their support, this time donating more than 1,135,000 sachets of PUR as pre-positioned supplies. Because they were already in place at strategic locations across the nation, these supplies were invaluable for rapid distribution after flood disasters between 2010 and 2012, including in Sulawesi, Mollucas, Kalimantan and Nusa Tenggara.

Focus on climate change displacement

Jakarta is among the top ten cities globally in terms of climate change risk[138]. It is now generally accepted that subsidence of North Jakarta into the ocean over the next 100 years is inevitable, taking with it the ports, industries, arterial roads and airport infrastructure that currently exist. In the meantime, though it is not within the belt of activity for tropical storms, Jakarta is considered vulnerable to all other kinds of climate change risk, including increased flooding, rainfall, drought, land loss and landslides. The risk is enhanced further by the high density of population and local environmental challenges such as blocked drains and polluted waterways.

Though Jakarta's situation represents potential for massive loss of lives and property in a sudden event such as a flood, attention is also required to measure and respond to slow onset change, particularly for poor communities. Displacement from uninhabitable land is already a reality for families living along river banks, complicated by issues of land tenure and unclear municipal responsibilities for housing the urban poor. Families that move regularly are less able to create security for their children in terms of schooling, healthcare and economic stability.

"Protecting the rights of refugees, IDPs and other displaced people in urban settings – creating 'humanitarian space' – is a major challenge."

Richard Zetter, Meeting Humanitarian Challenges in Urban Areas

A key challenge to addressing the impact of climate change on Jakarta is lack of reliable data. The term "climate change" is in itself contentious among some audiences and though empirical measurements show emerging trends such as increased rainfall and rising sea levels, prediction of the speed and impact of future changes is sometimes disputed. Acceptance and adaptation in the face of inevitable change has been slow to come globally, and Jakarta is in the unenviable position of needing to lead the way rather than to learn from others. For now, the disaster management agency at province level has a general strategy to reduce disaster risks but lacks a comprehensive strategy for climate change adaptation[139].

The city may not yet understand its own vulnerabilities in terms of adaptation measures. The World Bank in 2011 partnered on a study of the urban area in order to collect a fully representative picture of the city's demographic spread including the "unwanted" and marginalised new settlements[140]. It concluded that the poorest residents of Jakarta – around 3.5% of total population – are mainly living in areas prone to future subsidence in North Jakarta and along annually flooding river systems, and that engagement of local authorities within DKI Jakarta with these residents specifically on climate change adaptation is only now beginning. However, it also concludes that the governance structures of Jakarta, based on semi-autonomous *kelurahan*, represents an opportunity for contextualising and replicating adaptation measures which integrate successfully with other programmes for working with the urban poor.

Stabilising and servicing poor communities will be an essential component of disaster risk reduction long-term for Jakarta. Urban infrastructure requirements in this context call not only for the basics of water, sanitation, children's services and energy, but also for protection in terms of sea walls, flood management and community-based preparedness. While discussions on all these aspects of risk reduction are under way at many levels, there are fewer solutions and funding sources to meet the inevitable need for pro-poor relocation policy. It is well acknowledged that Jakarta as a city is full to bursting point, and proactive urban planning in peripheral cities now the most urgent need. In particular, planning with children in mind, their requirements for green space, safe play and a healthy environment, has potential to combine child friendly policy with resilience for future generations.

This boy's home in Jakarta, Indonesia, is extremely vulnerable to storms and rising sea levels.

Community-based fire training, Phnom Penh, Cambodia. An effective community disaster preparedness plan reflects locally identified hazards and builds locally accessible resources for mitigation and response.

Part 3:

Recommendations for governments

Recommendations in this section are not made with a particular national or municipal context in mind. Instead, they take into consideration the common gaps and barriers from the cities in the previous section, on the premise that these commonalities are likely to be relevant to many more low- and middle-income urban contexts.

Recommendations also take into account the agreed goals of the Hyogo Framework for Action and highlight the important linkages between poverty resilience and disaster resilience.

Partner through frameworks and networks

- **Connect effectively with expertise and resources to share the planning and financial burden short-term.**

Local government is often the primary implementing partner for international protocols and policies in the field of human development. It plays this role with varying degrees of autonomy, resources and success. Inequity of services and unplanned urban development often indicate low capacity to meet civic obligations, rather than low interest in doing so. For urban governance bodies the tide of change can be overwhelming, and those who are most successful in providing for the well-being and security of their populations are often those best connected to policy, technical resources and funds at national and international levels.

With regard to urban DRR frameworks and networks, World Vision recommends alignment with:

- **The Hyogo Framework for Action,** which contains clear, standardised commitments from every national government in the region, including the requirement to report transparently on progress. Municipal governments may take this one step further, opting in to articulating their own commitments and relationships with a variety of external partners towards common goals. Municipal governments can also influence national governments towards greater adoption of Hyogo priorities, particularly in the case of capital cities or large secondary cities, where it is generally considered that what is good for the city is good for the nation.
- **AADMER and the Incheon Declaration for Asia-Pacific Nations:** Since the global agreement on the Hyogo Framework, regional agreements have also been established. In 2008, the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) was developed after Myanmar's Cyclone Nargis as a vehicle for crossborder cooperation in disaster management activities and a particular emphasis on disaster risk mitigation. AADMER outlines the responsibilities of the ASEAN countries to mitigate disaster risk and strengthen disaster preparedness nationally, and to share science and technology, risk and warning information regionally, as well as to make human, financial and other resources available to other member countries during an emergency. At the 2009 Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR), fifty governments from the region approved a five-year road map to establish a joint climate-resilient disaster risk management system, a plan now known as the Incheon Declaration.
- **United Cities and Local Governments (UCLG)** is a membership organisation at city rather than national level. UCLG's stated mission is "To be the united voice and world advocate of democratic local self-government, promoting its values, objectives and interests, through cooperation between local governments, and within the wider international community." The organisation is a conduit for many cities to development policy and planning in the international arena, including the MDGs, climate change and local finance. UCLG is currently preparing to contribute to the MDG Post-2015 consultation through the UCGL Task Force on Post-2015, comprised of mayors from cities globally. The UCLG website indicates that main areas for influence on goal setting will be in inequalities, governance, population dynamics and environmental sustainability. The process will provide a unique opportunity for local governments to be included in national dialogue on Post-2015 MDGs, with the organisation currently calling for expressions of interest.
- **UN-HABITAT Proposed Sustainable Development Goal** for Sustainable Cities & Human Settlements aims to build on MDG 7D, by providing targets that can be implemented and tracked at local level in cities globally. Proposed Target 11 highlights urban resilience: "By 2030, increase to 20% the number of cities adopting and implementing policies and plans that integrate comprehensive and multisectoral measures to strengthen resilience."

China's urban commitments

In 2000, China's urban population percentage was around 36%; by 2011, it had grown to 51%. Mainland China now contains over 80 cities with populations of 500,000 or more, and a further 450 sized between 200,000 and 500,000. Four are megacities, projected to increase to seven by 2030. No other nation has faced such a massive adaptation strategy in order to ensure that food security, environmental stability and disaster mitigation keep up with urbanisation[141].

Earthquakes, floods and other natural disasters now regularly occur in densely populated areas, for instance, the 2008 Sichuan earthquake, which affected dozens of towns and cities across the province and beyond. Though China's capacity to respond to disasters through army and community mobilisation is high, linking resilience to urban planning is relatively new.

Since hosting the World Urban Forum in Nanjing in 2008, China has been at the forefront of discussions and knowledge sharing on urban change. At the 2012 World Urban Forum, the massive city of Guangzhou announced it would join the Making Cities Resilient Network[142] as well as offering an international award to other cities for urban innovation practices.

World Vision's Asia Pacific Community Resilience Project

The World Vision Asia Pacific disaster team is implementing a Community Resilience Project 2011-2013, including urban disaster risk reduction as a key component. In March 2012, an urban resilience assessment framework developed with the assistance of Prof. Rajib Shaw of Kyoto University was pilot tested in Bangladesh, China and Indonesia. The framework is an integrated approach assessing resilience at city and community or neighborhood levels. Four tools or questionnaires were used together in the assessment framework:

1) Climate and Disaster Resilience Index (CDRI), which aims to understand disaster resilience at the city level; it is used to link resilience to different city services
2) Action-oriented Resilience Assessment (AoRA), which is used to assess the resilience and collective voices of pilot communities
3) School Disaster Resilience Assessment (SDRA), which looks at school resilience and its linkage to the community
4) Finally, the Hyogo Framework for Action (HFA), which is used to understand World Vision's own perception about the importance of risk reduction.

The CDRI survey questionnaire was administered at the zonal and district level, while the AoRA was used at ward level and the SDRA was completed by the principals of selected government and private schools.

The CDRI analysis shows lower resilience of sub-districts in Bangladesh in terms of the physical and institutional aspects; higher resilience in Indonesia in terms of social issues; and higher resilience in China in terms of physical, economic and institutional dimensions. AoRA analysis suggests that in Bangladesh, community participation and training are effective when happening; in China, the challenging issue is lack of social interaction among community members and schools; and in Indonesia, community and professionals (academics and other practitioners) need to play a higher role in risk reduction activities. SDRA shows that the districts with higher social resilience have higher school to community linkages. The assessment also looked into child protection and well-being implications as well as accountability to communities that would inform national office planning.

Based on these results, World Vision Bangladesh will develop further their urban DRR programming in Dhaka (Kamalapur and East Dhaka), creating a model for integrating urban, sector, DRR and advocacy initiatives. In 2014 the office will document and publish the results and practices emerging from the revised approach in the hope that they may inform policy and practice in other locations nationally and internationally.

Consult children

- **Take policy steps to ensure that children are meaningfully included as stakeholders, advisors and campaigners on local safety issues**

Recognising children formally as partners in policy involves legislation at national level and proactive implementations of platforms for discussion at local level. In many cultures, it also calls for active community campaigning.

With regard to children's consultation, World Vision recommends:

• Engage NGO partnerships

Child-focused NGOs are experienced campaigners and recruiters for child participation. By aligning activities and public debate, governments and NGOs together can promote not only the ideals but also the outcomes of children's policy participation, with a focus on the effectiveness as well as the obligation of involving children.

• Align with the participation of parents

Children's participation is also dependent on the participation of their parents and community. Where men and women are not active and influential in decision-making on their behalf, it stands to reason that their children will be similarly excluded. Good governance is pluralistically inclusive including of the most vulnerable as citizens with the same rights as their wealthier counterparts. Pro-poor policy consultation will help to raise the profile and influence of all three citizen groups – men, women and children.

• Pre-empt language and literacy barriers

In the recent review of implementation of the Children's Charter on Disaster Risk Reduction (see p. 24), a issue raised several times was the challenge of reaching children who speak minority languages or who are illiterate. This can be overcome by translating materials into minority languages (such as World Vision has done in China) and producing picture messages for people who cannot read (such as the materials produced by World Vision in Bangladesh). Where literacy is not considered and written into planning for children's consultation, many important viewpoints will go unheard.

A child-focused Hyogo Framework for Action (World Vision/Plan 2008)

1. Governance
Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation **promoting and supporting children's rights**

2. Risk Assessment, Monitoring and Warning
Involve children and young people to identify, assess and monitor disaster risks and enhance early warning

3. Knowledge and Education
Use knowledge, innovation and education to build a culture of safety and resilience at all levels, **because children are our future**

4. Underlying risk factors
Involve children and young people to reduce the underlying risk factors

5. Preparedness and Response
Strengthen disaster preparedness for effective response at all levels, particularly at the community level, **concentrating on the well-being of children and young people**

Call for Corporate Social Responsibility

- **Seek corporate community partnerships to reduce the negative impact of industry and strengthen local communities**

In terms of sustainability, community cohesion and mutuality of services, there is a growing recognition of responsibilities of the private sector to give back to the geographic and social environment that supports their success. For corporations seeking CSR opportunities, there is a strong business case to be made for investment in disaster risk reduction because businesses and communities have strong and mutual interests in each other's well-being.

With regard to corporate community partnerships, World Vision recommends:

- **Beyond legislation, encourage voluntary contribution**

Corporations in developing countries, particularly those involved in mining or manufacture, are bound by several international laws and protocols on issues such as child labour, hazardous conditions or environmental degradation. Many more – sustainable production, community investment, transparent reporting – are voluntary and often considered ethical add-ons rather than core values. This is changing. Increasingly, consumer interest, community expectations and local company law will guide corporations towards greater social responsibility, particularly in their local environment. A key challenge for governments wanting to mobilise the considerable influence and resources of the private sector is to guide corporate social responsibility efforts towards impactful development and risk reduction projects.

- **Engage companies on child rights and disaster preparedness**

UNICEF's Children's Rights and Business Principles[143] considers the many ways that company operations affect children and provides positive pathways for reducing negative impact and protecting rights. Companies applying these principles are able to promote themselves as child friendly organisations, often as part of a broader ethical framework for national and international community relationships. One of the eight principles is for the company to be ready to respond in an emergency and to provide services and protect rights in affected communities.

- **Focus CSR efforts on the most vulnerable**

The effectiveness of the private sector in their community-based initiatives depends largely on the quality of consultation with those communities. It is not always possible for corporations to consult directly, and there may be other partners in the relationship better able to ensure vulnerable communities and children are in the equation. Corporations are likely to need local government or other authority bodies to guide them, with all partners working together to ensure that the full context of urban vulnerabilities to disasters is considered and covered.

Three levels of DRR CSR

• In and through the workplace – encouraging disaster risk reduction in the immediate sphere of influence

• In and through the community – enabling disaster risk reduction in the extended sphere of influence

• In and through external partnerships – cooperating on large scale projects as philanthropy

Bangladesh building tragedy warns of man-made disasters to come

Over 1100 people died in the rubble of a shopping centre collapse in Savar, near Dhaka, Bangladesh, in April 2013[144]. The plaza, which filled a suburban block, had developed signs of serious cracking the day before its collapse, but many employees had been told to report for work regardless of safety warnings.

The horrifying scale of the Savar disaster has brought to public attention many of the more complex issues of urban planning in developing contexts, including the vulnerability of the poor to unsafe working conditions as well as the challenges in enforcing legislated building codes. Factory fires, structural collapses and machinery accidents are common hazards resulting from these challenges, and urban planners and implementers must be ready and resourced to balance the advantages of economic growth alongside workplace and public safety.

- **Ensure clarity on culpability**

In its simplest form, corporate social responsibility calls for companies to abide by law, including national laws for trading and taxation, environmental protection and working conditions. It is largely the domain of national governments to ensure that this legislation is in place and enforceable where required. In urban industrial areas where the risk of pollution or industrial accident is high, governments may need to consider additional bylaws at local level to ensure risk response and culpability is contextual to the situation.

- **Match CSR with company values and government gaps**

Corporate community partnerships are most effective when aligned in some way with the purpose and values of the corporation, guided by an overall understanding, including with local and national decision-makers of what gaps exist. While corporations do not have a primary responsibility for infrastructure and services, they may choose to contribute to a project that enhances services in poor communities, to fund community awareness or provide equipment and materials beyond what is already provided by government. Certain sectors may see an ideal alignment between their core purpose and the reduction of disaster risk: for instance, the insurance sector in research and infrastructure for flood and earthquake mitigation.

- **Seek shared DRR technology and innovation**

Corporate community partnership is part of MDG 8: "*Target 8.F: In cooperation with the private sector, make available the benefits of new technologies, especially information and communications.*"

In fact, the contributions of the private sector have surpassed this goal. The last ten years has seen unprecedented commitment from corporations in terms of drug patents, technology and research to benefit the developing world. A better understanding of opportunities to partner technically on disaster risk reduction – for instance, early warning systems, environmental and agricultural research, water purification or waste recycling technology – is likely to result in many more impactful partnerships in years to come.

Bhopal: Assigning culpability

The horrors of the Bhopal/Union Carbide toxic gas leak in 1984 required a massive emergency response in terms of hospital facilities, doctors, relief food and water supplies. The government of Madhya Pradesh was obliged to provide these services to the victims with very limited input from Union Carbide. Longer-term, NGOs and community groups formed to build hospitals and other services to support Bhopal survivors, and to help them seek legal retribution.

It took over two decades to assign responsibility for cleaning up the toxic waste residue – also to the government and not the corporation or its board as individuals. While the corporate world often uses Bhopal as the case study that drives current corporate social responsibility in developing countries, it cannot be said with absolute confidence that a different set of circumstances involving careless application of legislation and safety standards will not result in a similar catastrophe – chemical, biological or nuclear – in the future.

Integrate policies

• Mainstream disaster risk reduction as a standard community service

World Vision's Hyogo Mid Term Review[145] indicated that coordination and information exchange across different sectors remained a challenge for many governments. Often, a lack of resources and competing requirements for them meant a continued focus of special projects within geographic areas identified as high-hazard, rather than assigning DRR resources by demographic vulnerability.

With regard to integration of DRR policy, World Vision recommends:

• Ensure workplace legislation on DRR

If other forms of workplace monitoring are already taking place, local governments can add requirements for disaster preparedness and risk reduction to the mix. Governments or communities may also seek relationships on disaster resilience with local workplaces – for instance, using private land as public evacuation space in the event of an emergency.

• Include DRR in health policies and services

Epidemic mitigation is implicit in Hyogo but not yet explicit. Whether through public health awareness, better treatment or environmental enhancements, steps taken to reduce infectious diseases such as HIV/AIDS, typhoid and TB can be considered disaster risk reduction. From the urban perspective, Hyogo Post-2015 may be able to place a greater emphasis on health through linkages with WHO's Healthy City campaign.

• Seek resilience-focused input to programme planning, designs and budgets

A risk averse planning team will greatly enhance the resilience of urban project goals. For instance, building a community evacuation centre will reduce the probability of school closures; keeping land aside as public green space provides safe play for children; a permanent disaster resilience officer or team will stabilise efforts towards community-based disaster planning. The alternative, to overlook mitigative elements because they are not directly attached to project objectives, places the programme itself at risk of setbacks and wasted investments.

• Embed disaster risk reduction as an element of child protection

Introduction of disaster risk reduction to school curricula has been a popular, effective and low cost policy across many nations including Thailand, the Philippines and China[146]. Through the Children's Charter on DRR, children are calling on all governments to do the same. There is also a need to strengthen commitment on preparation and testing of child protection systems before an emergency hits; too often, these systems are overlooked until after they are needed.

• Climate change adaptation

Climate change adaptation[147] is an emerging form of disaster risk reduction which depends greatly on research, forecasting and foresight in order to plan effectively for future calamities and displacements. It calls for integration between urban planners, economic development practitioners, humanitarian advisors and scientists in order to come up with practical solutions to unpredictable scenarios. While adaptation fits within risk reduction, it is on a larger scale than most initiatives and may require complex and sensitive handling of issues such as relocation, land use legislation and water management across municipal boundaries.

Invest in communities

- **Invest in school and community on disaster management, risk assessment, first aid, evacuation and mitigation infrastructure**

Under a cost benefit analysis, disaster risk reduction is generally agreed to be a better use of funds than disaster response. Investment in disaster mitigation increases the effectiveness of overall aid spending and enhances the reputation of cities as "liveable", "safe", "sustainable" or "child friendly". Yet though Priority 1 of the Hyogo Framework is to enable a strong institutional basis for implementation, budget is consistently raised by local and national government as a deterrent for effective risk reduction.

With regard to investment in DRR, World Vision recommends:

- **Effective public campaigning**

Public awareness and social marketing has proven to be a vital tool in strengthening public health and reducing under-five mortality in developing countries. Asia Disaster Preparedness Centre suggests that community-based disaster risk reduction, particularly where hazards are well understood and anticipated, will also be greatly enhanced by government investment into public messaging[148]. An integrated community campaign includes a variety of media from television and radio through to posters, newsletters and street theatre. Particularly for Asian nations that are more online than some other regions, social media campaigns may also help to reach and mobilise young people, and to share the stories of vulnerability that exist elsewhere in the city.

- **Influencing donors to shift priorities**

Many national governments in developing nations are highly reliant on development assistance, so that increasing investment means realigning the interests of international donors towards disaster risk reduction. It is normally the pattern that donors – including multilateral, government and private – will respond to requests for support after a disaster strikes, when the need for massive recovery efforts is most apparent. Governments may not be accustomed to asking for full support prior to a disaster, nor are they planning sufficiently long-term in their aid proposals post-disaster to include sufficient risk reduction funds. However, the mantra to "build back better" along with governments' articulation of their commitments to the Hyogo Framework is increasingly well understood and has potential to turn the tide on disaster investment from reactive to proactive.

- **Contextualising the challenge**

Challenges to effective investment in DRR exist in both centralised and decentralised models of local governance. Where a city is not making its own investment decisions, it will face greater challenges in directing programmes and services to marginalised communities including sometimes resistance from wealthier citizens in gentrified areas. On the other hand, a complicated municipal network like the *barangays* of metro Manila or the *kelahurans* of Jakarta may require resourceful partnerships in order to provide an equality of spending under different political and social influences. Cities will all need to work differently to resolve budgeting issues and can apply the agreed mandates of the Hyogo Framework, Child Friendly Cities and the Children's Charter to find common ground on programmes requiring external funding.

The One Million Safe Schools and Hospitals Campaign, which recognises the vulnerability of government-provided infrastructure to large-scale disasters, began in 2010. Partly funding, partly advocacy, the campaign allows any concerned party – from an individual or company through to a government – to pledge on behalf of a school or hospital to increase their resilience to disaster. A strong take-up of the campaign indicates that this is an effective approach to sharing responsibility for solutions. Take-up of the campaign has been encouraging, with a recent highlight by the Thai national government pledging to upgrade 43,000 schools and hospitals across the nation. Their example indicates that there are benefits at local and national level from accountable engagement with the campaign.

Research and report

- **In a rapidly changing world, ensure the hazards are understood, and increase further the body of knowledge on child friendly, safe cities**

The capacity of urban governments even in developed nations is challenged by the swiftness and vitality of urban change. Patterns of migration, settlement, water use and land degradation are all unpredictable. The uncertainty of climate change coupled with increasing pressure on supplies and services makes for a volatile environment. Significant resources are required to keep track and respond to emerging social needs.

With regard to research and reporting, World Vision recommends:

- **Seek external research partners**

Without budget or capacity to conduct regular detailed demographic research, city authorities should be seeking support to do so as a priority. This is within the Hyogo Framework for Action, and a number of bodies exist to provide support of this nature. It should be noted that the results of these surveys and census data, though available to the international community, are not primarily for the international community but are baseline information to inform the urgent adaptive urban planning required in many developing cities.

- **Look for localised trends**

Research into patterns of disaster in the Asia Pacific region is ongoing and well reported through bodies such as EM-DATA and the ADPC. However, these patterns may not be as clearly reported for localised areas without proactive inclusion of requirements by a particular city or area of a city. Many urban disaster management bodies are in need of risk assessment and capacity assessment support which includes projections of future weather trends caused by climate change.

- **Share the knowledge with communities**

Sharing of data needs to become more effective, both between cities and within the city itself with neighbourhood-level authorities and community organisations. Local government should be using all methods at its disposal – print media, radio, newsletter, social media and "town hall" meetings – to discuss emerging changes and trends with those communities most likely to be affected, so that community members can understand and contribute to adaptive planning.

KNOWLEDGE GAPS:

- Linkages between disaster risk reduction and child protection
- Linkages between urban poverty, exclusion and disaster vulnerability
- Linkages between local level studies and national or regional urban statistics

The Asian Disaster Preparedness Centre

operates a variety of advocacy, research and development initiatives to assist urban areas with disaster risk reduction. The ADPC operates accredited specialist courses in a variety of disaster themes including public health, nutrition, climate change and DRR mainstreaming.

As well as hosting forums and publishing research, the ADPC operates some programmes directly for regional, national and municipal DRR, partnering with authorities at all three levels as required. The ADPC is currently providing technical advice to build capacity of local and national ministries in Nepal, Vietnam, Myanmar, Thailand, Lao PDR and China, as well as operating multi-country climate change resilience programmes. The ADPC is also a primary implementing and support partner on the Making Cities Resilient Campaign for the Asia region.

Anticipate accountabilities

• Strengthen and align local governance with national accountabilities to reach the most vulnerable

The concept that citizens have a "right to the city" has gained traction since it was first voiced by philosopher Henri Lefebre in 1968, and was used by UN-HABITAT as the theme for its 2010 World Urban Forum. However, there is no universally applied definition of urban citizenship. This loophole in direct accountability allows for shifting of responsibility for the urban poor between local, municipal and national government.

> "The right to the city, complemented by the right to difference and the right to information, should modify, concretize and make more practical the rights of the citizen as an urban dweller (citadin) and user of multiple services."
>
> Henri Lefebre, 1968

With regard to accountabilities to urban citizens, World Vision recommends:

• Connecting with national accountabilities,

particularly on policy and budget: Research indicates that where a national government shows political will to implement protective measures on DRR or climate change, local capacity and interest from municipal government also increases. There is less evidence that a city can "go it alone" in responding to emerging or known disaster risk without national level support and allocation of appropriate budget. Cities can potentially influence their national government by taking up international pledges directly and encouraging other municipal authorities to do the same.

• Meeting accountabilities to the vulnerable

Championing the rights of the most vulnerable through policy is complex, especially in a city with significant wealth inequality. Previous efforts to clear slums or restore land to owners have severely impacted rights including the rights of children, and many communities continue to live in daily fear of eviction. Urban governments must consider the original intent of MDG 7 – to improve the lives of slum dwellers – and their role in providing services and solutions to all communities to whom they are accountable.

• Child protection accountabilities

Children are afforded special protection through the CRC in terms of provision of conditions that allow equity of opportunity and development. National governments that are signatories to the convention can be held accountable under the CRC for children's protection and well-being in the face of predictable hazards. For urban children this accountability is delegated to municipal government and may even be further decentralised to ward level. It is often necessary to articulate who, between government, family and community organisations, is taking responsibility for monitoring children's risk at local level. This includes children out of school, children living outside conventional settlements and children living with disabilities.

• Clarification of future accountabilities

Several cities in Asia and the Pacific have already experienced the challenges of rapid influx migration due to internal displacement. In the future, disaster planning will be as important for a city's health and economic security as urban planning. While some cities are more vulnerable than others due to existing tensions in rural areas, others must prepare for migration as a result of sudden disasters or climate change elsewhere in the country. Just as with international refugees, those arriving may not wish to stay long-term but are seeking shelter, sustenance and safety until they can return to lands or livelihoods. Creating space for humanitarian response[149], as well as protecting the rights of internally displaced people and supporting their return and reintegration, is not familiar territory for urban governments.

School students in Iligan City survey the destruction wrought by the Philippines' Typhoon Washi, 2011, to their classroom. Washi's impact caused flash flooding, mudslides and significant debris damage, as well as claiming over 1000 lives. Calamitous weather events like this are increasing in the Asia Pacific monsoon belt.

Part 4:

Conclusions for other urban actors

"Many say our world is at a tipping point. If we do not act together, if we do not act responsibly, if we do not act now, we risk slipping into a cycle of poverty, degradation, and despair."

Ban Ki Moon,
Secretary-General, United Nations

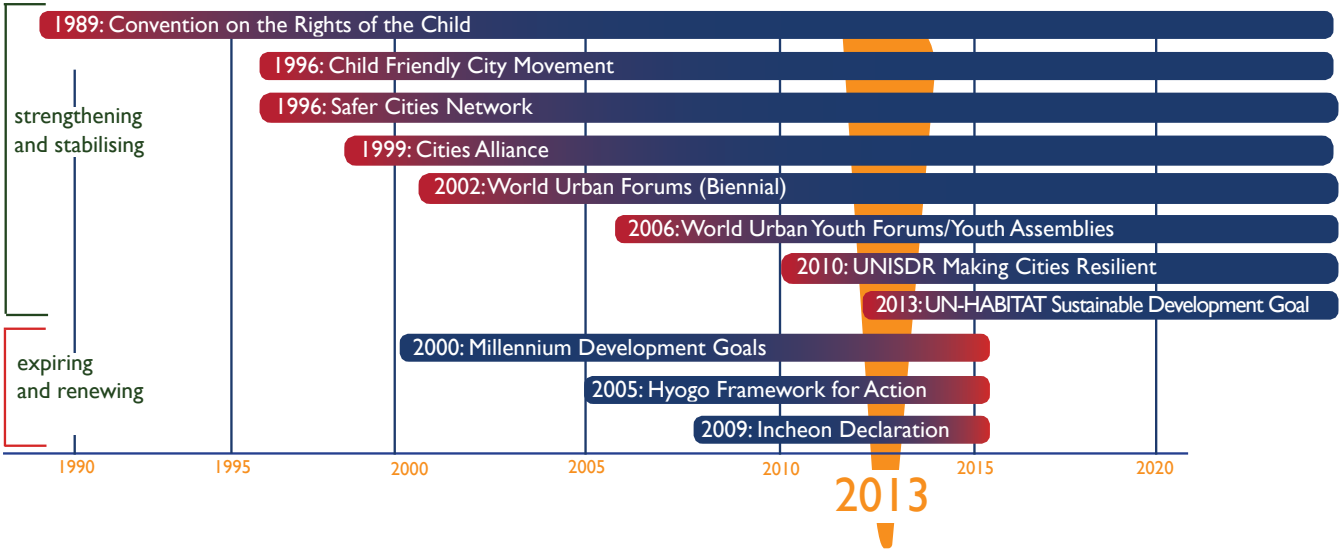
Asia Pacific urban DRR framework – a policy window for 2013

Aid effectiveness has been an important topic for donor nations over the last decade. The Paris Declaration of 2005 recognised the role of local and national government as a partner rather than simply a recipient in development initiatives. Strengthening governance, reducing corruption and championing the rights and interests of the poor have been important themes for development initiatives since. It can no longer be the case that governments do not invest in their own future on the understanding that international humanitarian agencies provide relief and recovery on their behalf.

Despite this, the conclusion on urban risk reduction must be that external support is still a key element for success. It is unreasonable to expect that all policy makers are working at a high level of consultation and effectiveness in such rapidly changing contexts. Rapid urbanisation increases the number of people acquiring, rather than being born to, residential status; it creates imbalances of wealth and culture where none may previously have existed; it decreases the per capita supply of basics such as water, electricity and sewage disposal that may have seemed "state of the art" 20 years before. Most relevant to the disaster risk reduction platform, it challenges existing resources and legislation for urban planning. Many cities are growing too quickly – and political will or responsibility may be too vaguely defined – for effective process to take place.

Because cities evolve under the influence of their citizens and leaders there is no such thing as a typical city or a right way forward. Events such as the biennial World Urban Forum and 2016's Habitat III help to create recognition of common ground and replicable solutions for cities around the world in their urban planning and risk resilience. Through these networks, cities on different continents may discover commonalities that they do not share with cities even within the same nation. Leaders of these cities also find support in many sectors – UN initiatives, international NGOs, research bodies, the private sector and each other – in order to meet their commitments to safer cities.

The year 2013 represents an ideal time for adoption of child-focused disaster risk reduction measures in urban environments. The urban agenda is focused through international initiatives such as the World Urban Forum and Making Cities Resilient on improving lives for urban residents, while the Hyogo Framework and the Millennium Development Goals are entering a phase of review and renewal. The inclusion of children in planning, as assets and as participants, is higher than ever before. To bridge the transition post-MDG on urban poverty, the Sustainable Development Goal for Cities and Human Settlements is at final draft. All this is leading to heightened research, resources and political will for cities in low- and middle- income countries to reduce the vulnerability of their citizens to hazards existing and emerging – and thus to reduce risk.



Implications for urban authorities

Post-MDG discussions are already including urban stakeholders in the realisation that the poverty and inequalities of the year 2000 have shifted to cities along with the population. While indicators such as children's health, gender equality and maternal/newborn survival are delivered at a national level, they do not reveal the discrepancies that may exist within a nation. The concept of "slum dwellers" is also less representative of the true picture than is ideal, with urban poverty now evident across a broad range of living conditions. The new goal setting of 2015 under the tag "The world we want" provides an ideal opportunity to include urban poverty more visibly in goals and accountabilities to address root causes of inequality.

The Hyogo Framework for Action was also agreed at a national rather than a localised level. It clearly articulates the delegation of power and responsibility for disaster risk reduction to those best able to implement locally and contextually. A further commitment was made by Asian governments through the Incheon Declaration[150]. Despite this, urban governments continue to report significant challenges with Priority 1 to legislate and fund disaster risk reduction[151]. The continued monitoring of individual country commitments and progress against the terms of the HFA has given these governments a forum to raise their concerns and for international governance to acknowledge them. The next step for the HFA is to understand and resolve these obstacles, whether through greater national level accountability or through regional disaster networking and donor relationships.

Implications for regional bodies

At-risk cities are likely to benefit from a comprehensive set of policy guidelines which allow for alternative systems of governance to pull together on clear and unified responsibilities. The regional bodies are best placed to support this because they are already supporting national government on many other issues of trade and development. They can also play a role in creating local to national accountabilities and transparent reporting with Hyogo Framework priorities at the core.

The Asia and Pacific nations have three regional bodies dedicated to providing support on aid and development to their sub-region – SAARC, ASEAN and SOPAC. All operate a disaster management support service. The SAARC Disaster Management Centre (SDMC) has been in operation since October 2006 to provide policy advice and capacity building to its eight member countries. ASEAN set up the ASEAN Agreement on Disaster Management and Emergency Response (AADMER)[152] in partnership with a range of humanitarian and relief NGOs in the aftermath of Myanmar's 2007 Cyclone Nargis. SOPAC's disaster risk reduction programme takes a technical and research approach closely linked to national commitments to Hyogo as well as a separate agreement, the Pacific Islands Framework for Action on Climate Change 2006-2015[153]. These emerging services show commitment – financially and in terms of growing expertise – to the principles and practices of disaster risk reduction for more effective development.

Implications for civil society

Crucial to good governance is the ability of civil society to hold their government accountable for a mutually agreed scope of services. In developing nations representation of civil society on policy is not always assured, and cities with their unique patterns of wealth and service distribution add further complexity to the fabric of social justice. Councils and mayors are always working with a limited budget and may also hesitate to contemplate services or partnerships with informal or economically powerless communities. A key recommendation for urban disaster managers in government is to keep all communities informed of local situations, changes and adaptive measures necessary as a result. Community organisations can then engage and decide for themselves on the best responses to emerging risks and hazards. From garbage removal through to consultation on infrastructure, the most marginalised groups are entitled to, and should seek, additional support from government and NGO partners to balance civic interests.

Implications for the international NGO community

The traditional focus of the international development NGO – water, health, education, livelihoods and representation – requires a repositioning in the face of urban poverty. Community development is not, nor should be, dependent on internationally provided services. Local organisations and duty bearers are accountable to provide these directly. International NGOs including World Vision are shifting to models of development that concentrate efforts on community engagement and localised problem solving, including an important emphasis on advocacy and strengthening of governance. Advocacy is not always a popular term among governments in the Asia Pacific region, yet policy influence and external accountability are core functions of international NGOs. Cities provide new opportunities for engagement and input; as capacity on disaster risk reduction is an acknowledged gap for local systems, existing local organisations urgently require technical and capacity building support. International NGOs are also well placed to bring their wealth of knowledge on programming, design, evaluation and community accountability to support local disaster risk reduction integration. Stepping back from implementation to the role of advisor and mentor helps with community ownership of planning and service provision; however it may require clarification of strategy with donors, particularly private donors and sponsors. Child-focused NGOs have a particular accountability to continue to raise the plight of vulnerable children in urban environments, including their vulnerability to natural and man-made disasters, and to advocate for inclusion of their voices, viewpoints and interests in urban policy making.

World Vision's emerging urban evidence base

Like many other aid and development organisations, World Vision has traditionally worked mostly in rural areas, with over 40,000 staff working in over 90 countries. However, World Vision has made substantial investments in urban research and programme innovation in recent years. World Vision has established a Centre of Expertise for Urban Programming that is leading urban pilot projects in six countries. The pilots are testing innovative, locally driven urban poverty solutions such as securing urban land rights, influencing municipal policy implementation, and creating livelihood opportunities – all with children and youth leading the change in their communities. Each of the pilot projects has provided opportunities to understand the role that agencies like World Vision can play in contributing to cities for children. The pilots have demonstrated the value of city-wide programmes, cross-sectoral partnerships, issue-based projects and strengthening civic institutions.

Where to from here?
World Vision is scaling up urban programming globally, with new urban learning sites being established in multiple regions. Learning sites will apply the lessons from the pilot phase and scale up a range of tested urban models.

Urban Vision
World Vision's goal is "the sustained well-being of children within families and communities, especially the most vulnerable." By 2020, World Vision will be a credible partner addressing urban poverty issues by contributing to sustainable cities for children. To achieve this vision, World Vision aspires to be:

1. An effective urban program partner in relief, development and advocacy
2. An influential voice addressing the urban megatrend within the global aid agenda
3. A responsive, adapting and innovating organisation

World Vision will continue to advance the well-being of communities and children in urban contexts through:

- Research partnerships – building credible evidence for child-focused urban interventions
- Resource partnerships – pursuing joint grant funding
- Programming partnerships – national and city-level collaboration in urban learning sites

World Vision is continuing to explore partnerships to scale up initiatives that contribute to sustainable cities for children.

Annex 1: Useful tools and guidance for implementation of the Children's Charter

Reproduced courtesy of Children in a Changing Climate Coalition

Below is a short list of useful tools and guidance documents for each of the Charter priorities. This is not intended to be a conclusive list, but instead provides some suggestions on where to look for more information in terms of implementation of each of the priorities.

Priority One – Safe schools

- Asian Disaster Preparedness Centre, Plan, Save the Children, UNICEF and World Vision, *Comprehensive School Safety: Working towards a global framework for climate-smart disaster risk reduction, bridging development and humanitarian action in the education sector,* October 2012.
- Global Facility for Disaster Reduction and Recovery (the World Bank), the Inter-Agency Network for Education in Emergencies and UNISDR, *Guidance Notes on Safer School Construction,* undated, available at: *http://www.ineesite.org/assets/Guidance_Notes_Safer_School_Constructionfinal.pdf*
- UNICEF and UNESCO, *Disaster Risk Reduction in School Curricula: Case Studies from Thirty Countries,* 2012, available at: *http://www.preventionweb.net/english/professional/publications/v.php?id=27715*
- UNISDR Thematic Platform on Knowledge and Education, *School safety baseline study*, 2011, available at: *http://www.preventionweb.net/english/professional/publications/v.php?id=23587*

Priority Two – Child Protection

- Child Protection Working Group (Global Protection Cluster), *Minimum Standards for Child Protection in Humanitarian Action,* 2012, available at: *http://cpwg.net/minimum-standards/*
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Annex 2: General further reading

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http://www.acfid.asn.au/resources-old-old/information-sheets/disaster-risk-reduction

United Cities and Local Governments
http://www.cities-localgovernments.org

UNDP The World We Want (post-MDG info portal)
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http://www.businesscalltoaction.org/

UNISDR My City is Getting Ready
http://www.unisdr.org/campaign/resilientcities/

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Cities Prepare!

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