

### Policy pointers

- The nexus between climate change, urbanization, poverty and children needs further examination in order to develop appropriate responses.
- Children can be *risk communicators*, capable of identifying risks based on their conception and analysis of their environment, and change agents, able to mobilise their communities and create fertile ground for action.
- Child-centred organizations can work alongside city governments to link urban adaptation to child-centred development goals, and assist with community-based participatory approaches to integrate children into adaptation planning processes.
- School activities and curricula can play a key role in providing knowledge and skills for disaster risk reduction to children.

## It's raining, it's pouring

### Urban children and climate change vulnerability in secondary cities in Asia

As urbanisation continues, more people will be exposed to direct and indirect hazards of climate change, especially children in urban poor communities of the global South. A collaborative report between Save the Children and IIED<sup>1</sup> explores key vulnerabilities of Asian children in urban communities to climate change and seeks to identify ways through which child-focused organisations can ensure climate change does not undermine the development trajectory of children in urban communities. Adaptation remains critical for cities in poorer nations despite the fact that opportunities for child participation in adaptation initiatives remain weak. The report recommends incorporating adaptation education and training into school curricula and encourages the development of more social policies and programmes to address the existing vulnerabilities and depravities of urban poor children.

Secondary cities in Asia are facing increasing climate variability and change due to multiple stresses, not least urbanisation and urban poverty, and children are frequently the first victims. Children that are marginalized, and lack appropriate safeguards and adequate care, are at greatest risk of climate effects, including heat waves, flash flooding, sea level rise and more extreme weather events.<sup>2</sup> Yet very little is understood about the specific climate risks these children face that impact their right to life, survival and development.

Research shows that climate change presents particularly strong challenges to children in the global South.<sup>3</sup> Specifically, children who live in urban poverty have a lower adaptive capacity. This further renders them vulnerable

in the context of fast-urbanising cities, which are already ill-equipped to provide adequate social protection mechanisms and access to basic services. They are frequently exposed to physical hazards, such as polluted water, open sewer systems, lack of local safe play areas or cultural facilities, and overcrowding. The dangers severely restrict children's independent mobility and opportunities for play and recreation, while increasing their exposure to hazards, violence and unintentional injuries.<sup>4</sup>

Contrary to popular belief, highly vulnerable children are not merely passive victims of climate change but, rather, can demonstrate resilience despite their urban disadvantage, and they can be valuable participants in adaptation

planning and practice. Children can be *risk communicators*, capable of identifying risks based on their conception and analysis of their environment, and also *change agents*, able to mobilise their communities and create fertile ground for action. Taking a participatory approach to climate change resilience programming creates a dynamic space for children's participation in urban adaptation and development.

Combining a literature review with observational studies, focus groups and key informant interviews from independent city studies, the working paper 'Climate change risks and resilience in urban children in Asia'<sup>1</sup> identifies the key vulnerabilities of urban children living in Asia to climate change, and assesses urban systems and services to understand the adaptive capacity of cities. It uses these findings to identify ways to conduct climate change adaptation (CCA) and disaster risk reduction (DRR) projects that do not undermine the development trajectory of children in urban communities.

### Three cities

The cities selected for this study were Khulna in Bangladesh, Da Nang in Vietnam and Malolos in the Philippines. Each are 'secondary cities', home to a population of less than one million,<sup>5</sup> and which, while more exposed to coastal climate threats, are less of a priority for donor adaptation programming.<sup>2</sup> They were selected based on climate hazard burden, coastal location, a history of disaster management efforts and the existence of a city development master plan.

The most common natural hazards affecting these coastal cities are typhoons, flooding, heat waves and saline intrusion. Other city-specific threats include droughts, riverbank/coastal erosion, cyclones, waterlogging, heavy rainfall and storm surges.

### Climate change, vulnerability and urban children

In Da Nang, Khulna and Malolos, the areas most exposed to climate impacts are deemed unusable for urban development, such as low-lying coastal areas and riverbanks. This vacant space is then claimed by large populations of urban poor, who often populate it with unsafe structures. The lack of adequate water and health and sanitation services often found within these communities, paired with the still-developing immune systems of young children, amplifies the risks children face regarding climate change with diseases such as diarrhoea and malaria. Structural inequalities further expose children to climate change, as their homes are subject to a wide spectrum of risks from climatic and non-climatic disasters, which often interact to severely undermine their well-being in cities (see Box 1).

The most significant climate change impact that threatens the urban poor is sudden-onset, large disasters such as typhoons and flooding. In these events, houses collapse, roofs fly off, water levels rise quickly and electricity fails, placing children at risk of drowning, injury and death. In terms of health, common diseases exacerbated by climate include malaria, dengue, leptospirosis, skin rashes and diarrhoea. These disasters also impact children's everyday routines, disrupting cooking and food storage, latrine use, and dry space on which to live and play.

Certain groups of urban poor children are more vulnerable to climate change impacts. *Migrant children*, for example, are often unregistered and thus reside outside of the protective structures and systems that serve to protect children. The insecurity of tenure, informal livelihoods and lack of access to services common to informal settlements place *children of informal settlements* at high risk of climate change impacts.

Sudden-onset disasters can destroy the workplaces of *child labourers* within hours. Working children's health and

### Box 1: Children's stories of climate change-related risk from the case study cities

*"We were most scared in 2013 when typhoon Haiyan warning came. People around us were scared too. We packed our things and we helped our parents pack food and clothes. However, there were not enough buses, as too many people were evacuating. We remember that we had to abandon our house for two days before typhoon Nari hit. When we got back, our roof had blown away and our books had got wet. There was no electricity or water. We had to stop school too. Then one month later, typhoon Haiyan came. We had to leave our house again. This time we were lucky as it did not hit our city. Before, we had never been forced to evacuate like this. We were afraid of drowning and getting injured."*

– Primary school student from Hoa Quy Ward in Da Nang

*"I miss work regularly during the rainy season due to waterlogging. I have never been to school. I started working at the candy factory with my mother eight years ago. We live in a Kutcha house. Our house, cooking area and toilet get standing water for a few days every year during the rainy season. We get sick at that time and cannot go to work. Often we have no money to buy food at that time. Waterlogging is worsening every year."*

– 15-year old girl living in Ward No. 21 in a Khulna slum.

safety suffer during climate events, for example when they are made to work in waterlogged areas or during extreme heat events. Even more vulnerable are *street children*, who can lose both their homes and employment in one event. *Disabled children* can struggle with mobility, which can place both them and their care takers at extreme risk when evacuation is necessary.

## How infrastructure affects resilience

The provision, quality and safety standards of infrastructure and services in cities play a significant role in the quality of adaptation that a city can implement. However, this provision is dependent on a set of robust performance and monitoring systems and policy frameworks that can support the delivery of adequate and safe infrastructures. Thus, strong levels of collaboration among government departments are required.

Failures in city design, encompassing urban planning, infrastructure, services and housing are pushing urban poor families into taking risks that place them and their families in dangerous informal living conditions, threatening the children who live there both physically and socially.

Child-sensitive disaster response and recovery is critical, as children may find it traumatic to adjust to rationed food, limited space and the generally chaotic environment of temporary shelters. Preparedness and planning are important steps in adaptation and must be combined with mainstreaming, as evidenced by local government staff undergoing adaptation capacity-building activities in Da Nang, and children in Malolos being taught how to pack an emergency preparedness kit with medicines, first aid supplies, canned goods and a flashlight.

All three cities have some form of climate change committee within their governments to manage adaptation initiatives, yet each struggles to fund and coordinate their work. For children to be considered in climate change adaptation, institutional committees must have a mandate to implement plans and be appropriately funded (recognising the high costs of adaptation) in order to mainstream climate change mitigation and adaption across multiple government departments.

## Children's participation in adaptation and planning

Frustratingly, the current role of children in implementation and monitoring disaster risk and climate change adaptation in cities remains largely as observer, supporter and beneficiary rather than as an active participant.

There is hope from the Da Nang study that child-centred CCA can be integrated into existing school curricula to effectively create awareness of climate change among youth. For example, a Save the Children initiative, 'Increasing Emergency Preparedness and Resilience of Vulnerable Coastal Communities', trained teachers in DRR and CCA and then conducted extracurricular activities for students in their schools. Primary students were taught about typhoons, floods and droughts, and how to practice adaptation using participatory risk-mapping exercises, environmental protection and evacuation drills. School

activities have thus taken on a key role in providing knowledge and skills for disaster risk reduction.

Non-government organizations can target programmes and projects towards urban children to develop their understanding of risk and response with regard to disasters and climate change. These initiatives are emerging in Khulna, with Save the Children's 'Stimulating Household Income Resulting in Economic Empowerment' (SHIREE) programme. To ensure that the children are not engaged in hazardous work, the project provides skills development training, support for income-generating activities, and linkages with services providers to low-income families. Through the project, participants have successfully increased and diversified their livelihood options, building broad adaptive capacity while allowing their children to return to school.

Children are an integral part of family life, and their participation in DRR and CCA planning at the household level is vital. In Malolos, older children (14–17) assist in securing the house and belongings before disaster events, while younger children help to move valuables to higher surfaces. Children in Khulna reported collecting plastic sheets for use as rain protection on roofs, and mud and leaves for repairing damaged homes. Children in Da Nang used what they learned at school to help their families prepare for events, for example helping to pack food and clothing for emergency evacuation.

There is still room for improvement, however, especially with regard to communication. City research revealed that most families did not have disaster plans and seldom discussed them if they did. The call for climate change and disaster preparedness curricula in schools has been made, but not yet taken up. Also, many of the projects discussed function at a household, community or local level, but failed to scale up to city or national applications.

## Rethinking child-centred adaptation

Child-centred risk reduction and adaptation arises from a child rights approach, seeking to ensure that the concerns and priorities of children and youth are heard in decision making around climate change and disaster risk reduction. It is an approach that works with children to facilitate their understanding of CC/DRR, empowering them with the knowledge, skills and confidence to take action within their homes, schools and communities to better plan for and respond to an increasingly uncertain environmental landscape.

The findings of this study suggest that children have a limited voice in risk reduction and adaptation activities in Da Nang, Khulna and Malolos. Past efforts to connect children, climate change and disasters have focused on ensuring a child's basic right to survival and development, meaning NGOs and governments concentrate actions on disaster preparedness and acknowledging child protection during relief and rehabilitation efforts. To support and encourage children's participation, some development programmes in DRR are promoting children's groups as avenues to provide opportunities for children to come together with a common purpose to plan and deliver action (see Box 2).

## Box 2: Response and adaptation measures for urban resiliency in secondary cities

Co-benefits (direct and indirect) of long-term risk reduction	Sector	Primary responsibility
Support mapping of most marginalized children such as migrants, street children and working children, not only of their numbers but also their living and working environments and the range of climate and non-climate risks.	Urban Planning	City government
Facilitate development of national curriculum integrating CCA and DRR in primary and secondary education. Disseminate information on climate change risks through primary and secondary schools. Further, conduct training activities and drills in schools and communities aimed at changing behaviour, or increasing disaster preparedness using interactive methods. Ensure that children understand the key concepts linked to climate change, emerging trends, anticipated risks and urban adaptation; discuss specific ways in which children can participate and contribute to city- and community-based adaptation action.	Education and training	National government, CSO
Support the formation of children and youth groups using community-based resources such as schools, health centres, drop-in shelters or adult-led disaster groups, or through external interventions by child-centred NGOs. Similarly, establish local committees for vulnerability reduction with active participation of children's groups.	Social security	Community, CSO, city government

Child-centred organizations can work alongside city governments to link urban adaptation to child-centred development goals, support advocacy and education around urban child-centred adaptation, and assist with community-based participatory approaches to integrate children into adaptation planning. Adaptation actors can aid in designing climate change curricula for schools, children's clubs and other groups, and can discuss weather- and climate-modelling data for future projections and local knowledge of adapting to the changing climatic contexts. It is important to train children in local participatory vulnerability

assessments, encourage participation in local adaptation planning, and support more flexible and forward-thinking approaches among children. DRR and CCA activities should be integrated into broader sectoral programmes, which requires consultation and collaboration with all stakeholders, including children and communities, all levels of government departments and like-minded NGO partners. The case studies highlight the importance of exploring the nexus between climate change, urbanization, poverty and children, in order to develop appropriate responses.

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