Cities, Climate Change, and The Big Opportunity
How Empowering the Urban Poor Can Improve Our Global Future

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Summary: For centuries, cities have proven themselves to be engines of economic growth, sources of innovation and places of job creation. As cities invest in their adaptation and resilience to climate change, this is also a window of opportunity to invest in new pathways to economic prosperity and progress for their most vulnerable citizens. But to truly solve the vulnerability of the poor, cities must address the structural inequalities that have constrained their access to resources and created and sustained poverty.

Climate change is happening and its unfolding dangers have grabbed worldwide attention. Yet, the opportunities that exist within climate change debates to improve and transform some of the most vulnerable urban communities of the developing world are often overlooked.

The great inequality is that the 100 countries most vulnerable to climate change – like Bangladesh, Haiti and Zimbabwe – have contributed the least to total global greenhouse gas emissions[1]. Simultaneously, in these developing countries and others like them, conditions in slums are worsening and today slums are home to 1 billion people.

In the coming decades, cities – in the developing world and otherwise – will experience intensified shocks and volatility of many kinds as a result of climate change: heat waves, heavy precipitation, intensified droughts and tropical storms.[2] These changes will impact agricultural yields,

water availability, disease vectors, and amplify risks posed by normal hazards. And yet, these destructive powers will continue to fuel urbanization rates in many countries, as conditions deteriorate in some countrysides.

> " It is illuminating that the Chinese symbol for 'crisis' includes the symbol for both 'danger' and 'opportunity'. The former has been much discussed, but the latter largely ignored.
>
> —Janice Perlman, Author, *Favela: Four Decades of Living on the Edge*

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[1] United Nations Development Programme (UNDP), Human Development Report 2007/2008, http://hdr.undp.org/en/media/HDR_20072008_EN_Complete.pdf

[2] The Intergovernmental Panel on Climate Change (IPCC), 2007

There will be complex, dramatic and subtle impacts on city economies with the effects of climate change and mass urbanization at play: both will play powerful roles in affecting the stability and longevity of the state; both will challenge administrative boundaries; and both will highlight the interconnectedness of cities and their surrounding countrysides and ecosystems that sustain them.

There are great opportunities to future proof our most vulnerable communities – to lean into the challenges, and in turn, protect and prepare those most affected by the dangerous intersection of climate change and urbanization.

What the world can learn from one city in India and its slum residents

Pune is the eighth largest metropolis in India with a population of 5.1 million people, near Mumbai. Thirty-two percent of its population lives in slums. By 2025, the population of the Pune-Mumbai "mega region" is expected to hit nearly 50 million people[3].

Climate change is likely to increase the frequency of flooding in Pune, which is located at the confluence of three rivers, Mutha, Mula and Pavana. The city has experienced many floods over the last six decades, including a historic major dam failure in 1961.

The challenges that Pune faces from a climate perspective are similar to many other cities around the world. Reversing urbanization or climate change may be impossible. But increasing the resilience of cities' physical, social, and economic fabric is possible. In fact, in the city of Pune, these processes have been in effect for several years, supported by CHF International and our partners. Together, we have has been mobilizing thousands of slum residents from more than 130 slum communities to explore the conditions of their communities and then organize themselves to take action.

Living on the Edge

With the number of people living in urban slum conditions expected to increase to 2 billion by 2030[4], climate change will only exacerbate the existing hazards and exposure of these settlements. Poor sanitation and hygiene, for example, can increase waterborne illnesses and floods can be linked to cholera outbreaks. The health and nutrition of individuals will also play an important role in their ability to fend off or recover from such health hazards. Gender equality, equitable access to resources and livelihoods will also influence their resilience.

> " Climate change is not a problem created by the poor in developing countries...The developed world created this problem and now we have to find solutions. Otherwise we'll face mass migration of an unseen scale."
>
> —Former Toronto Mayor David Miller and Chair of C40

In Pune, slums have increased just as they have in many cities around the world. In the absence of affordable housing, newcomers to Pune found shelter in squatter settlements, typically on land unsuitable or unattractive to real estate developers and even owned by the government. As encroachers, they understand that they are living on insecure lands under the threat of eviction. However, even with their low income, they gradually improve the quality of their housing and living conditions. Although the progress of improvement is slow, it represents a careful investment of peoples' time, resources and labor. Nevertheless, they remain dependent on local authorities for the provision of basic services. Inadequate access to basic services, like water and sanitation, carries a heavy toll on these residents' time, leading to hardship, ill-health and anxiety, delaying social and economic progress.

Of the 1.15 million slum residents in Pune, thousands of slum households have no access to sanitation facilities and must resort to open defecation. Forty-four percent have tin or asbestos cement sheet roofs[5]. These populations, like so many slum communities around the world, are living on the edge physically, economically, and politically: in coastal cities, on riverbanks, in hazard-prone areas, without rights to their land, with little savings, without identity or a right to their cities. These communities will be hit hardest by climate change, placing them on the front lines of the scramble to adapt and mitigate its impacts.

Localizing Action to Future-Proof Cities

In the absence of national commitment to take steps to reduce greenhouse gas emissions, the agenda has been largely animated by local action. Groups like C40 have formed to network the world's megacities and take action to reduce greenhouse gas emissions and address climate risks. The Rio

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3   CHF International Pune Slum Atlas, 2011.

4   The Challenge of Slums: Global Report on Human Settlements, 2003, http://www.unhabitat.org/pmss/listItemDetails.aspx?publicationID=1156

5   CHF International Pune Slum Atlas, 2011.

> **"**...communities around the world need better weapons – new tools, techniques, and strategies – if they hope to tame the three-headed hydra of climate risk, poverty, and precipitous urbanization...Since it may be too late to stop the global warming that's already occurred, we also must figure out how to survive it...there is far less attention paid to adaptation, what needs to be done to help people and environments cope with what's already occurred and with what's coming."
>
> —Judith Rodin, President, Rockefeller Foundation

+20 United Nations Conference on Sustainable Development has also found its greatest successes at the grassroots level.

Many scientists, citizens and policy makers have now turned their attention to how cities can adapt and build resilience to climate change, given that we cannot stop the global warming that has already occurred. Adaptation plans emerging from cities around the world are focused on how to improve the ability of their city's social, economic, and ecological systems to absorb disturbances and retain their same basic functions. In other words, there is a growing movement to future-proof cities, especially those most at risk.

Our work has been focused on this concept since 2003, when we first began working with communities in India to activate change at the grassroots level. In 2007, the Bill & Melinda Gates Foundation's department of Special Initiatives awarded CHF International US$9 million for SCALE-UP – Slum Communities Achieving Livable Environments with Urban Partners – a program CHF designed to pioneer scalable solutions that enable the urban poor in India and Ghana to have a meaningful voice in the planning and implementation of slum improvement programs.

In that same year, the Pune city authorities began implementing a disaster management plan as part of a climate change adaptation strategy. Using detailed city drainage maps, they conducted flood forecasting and then put in place a number of programs to restore natural drainage, reduce river pollution and encroachment and extend bridges. Other mitigation measures included afforestation in the hill zone and construction of small earthen check dams. The city also introduced property tax incentives to encourage

households to recycle wastewater and use rainwater harvesting. As a result, flooding has reduced in the city.

But, more importantly, some of Pune's city leaders also recognized that if they wanted to make lasting improvements to the resilience of their most vulnerable slum populations, they needed to also address their access to basic services and empowerment of these communities.

In 2007, we teamed up with the city government and a number of local civil society organizations to implement a set of such programs.

Co-Creating Housing Solutions
How One Government Gave a Housing Contract to a Group of Slum Residents

When the central government of India launched their National Urban Renewal Mission in 2006, it made funding available to major cities in the country, including Pune, to undertake slum upgrading projects. CHF worked with three city governments, hundreds of slum communities and dozens of NGOs to help design and deliver these slum-upgrading programs as integrated solutions, which combined bricks and mortar with community empowerment. This approach helped improve community resilience to normal hazards and also risks from climate change.

In Pune, CHF partnered with the city government to utilize the central government funding in two powerful ways:
1. Rather than only contract private builders, we supported them to also hire local NGOs to undertake slum upgrading projects.
2. Instead of evicting, demolishing and rebuilding housing more quickly in the city outskirts, we helped the city redevelop housing on the same site, where the residents had established their lives and livelihoods.

One such project included six dense slums in the Yerwada-area of Pune. Mahila Milan, a Pune-based collective of women's savings groups from the slums, was chosen to administer a city contract to rebuild 700 houses across these slums. We helped the collective and its community plan, design, and rebuild their houses while administering the contracts and collecting a 10 percent contribution from the families.

With Mahila Milan and a team of architects, we helped organize the households and develop the housing designs and neighborhood amenities like open spaces. The housing models used during this process were on display earlier this year at the United Nations headquarters in an exhibit titled, "Design with the other 90%: Cities."

The project leveraged an estimated total investment of $2.24 million from the government of which 10 percent came from local community's contributions. About 2,700 residents

benefited from the new housing. The program left more than houses; it left a legacy of community dialogue, debate, engagement and empowerment – the things that make democracies work. The Pune government demonstrated how to change the way traditional development is done, and let the "first mile" start in the community rather than the "last mile" by delegating power and citizen control over program resources.

Filling the Information-Power Gap
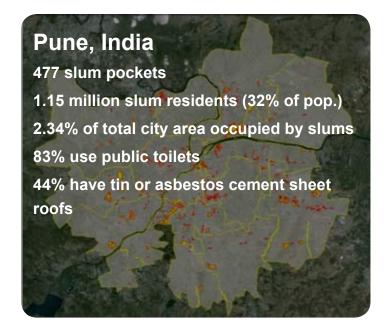Using on-line tools to make off-line change

Slum communities and local governments can work together and institutionalize more inclusive planning processes. We helped Pune implement a program that supports both local governments and their urban poor in exploring the conditions of their communities and take action – a skill that will be increasingly needed in the face of climate change. Our program in Pune also illustrates how modern information technologies can be paired with traditional community mobilization processes in order to create smarter governments and more informed citizens.

Beginning in 2007, we developed a program called *Utthan* ('to rise from the bottom') with the city's department of Urban Community Development. *Utthan* sought to improve how basic government services were administered to slums and to create a more inclusive planning process. The program was unique because it engaged a network of 5,000 community volunteers that reside in the city's slums to survey the socio-economic conditions of slum residents across the city.

We collected this information into a Geographic Information System (GIS) that we developed with the local government, and then gave back the data to community volunteers with statistics about their neighborhoods. After that, we taught these volunteers how to organize neighborhood action plans with this information.

In two years, 130 slum communities implemented projects based on their own priorities. They mobilized their own resources and those of the government. Examples of neighborhood improvements include: constructing a vegetable market, establishing a local police station, organizing secondary school classes for school dropouts and creating solid waste management programs in their communities.

The program energized and empowered communities. "Now I know everything about my [neighborhood]. While talking to the [elected representative] I can give quick evidence of the amenities and residents of my cluster.... Once there was a debate on the availability of garbage bins and water taps and because of the mapping I knew exactly the status in my cluster and the *corporator* had to listen to me," said one resident who participated in the community mapping and planning.

Pune, India
477 slum pockets

1.15 million slum residents (32% of pop.)

2.34% of total city area occupied by slums

83% use public toilets

44% have tin or asbestos cement sheet roofs

Our experience shows that the responsibility for bridging the "convergence gap" between government programs and their intended beneficiaries cannot be left solely to either local governments or communities alone. Successful approaches often come from the middle, from NGOs that can engage slum dwellers and local governments in productive solutions by filling gaps in information, trust, and technical skills to implement projects.

The community benefits greatly from such interaction, as Madhuri, a Pune resident who participated in our programs noted: "I feel proud to say that I have been honored at many places. I feel proud that there was a time when an uneducated person like me would get tense to meet people, talk to them, sit with them. But now I can manage all that comfortably and also have very good company of people."

Back to the Basics

At CHF, we recognize that there are a wide variety of coping strategies that already exist in many low-income communities in times of emergency: moving valuable items; sending children elsewhere to stay with friends or relatives; or constructing flood barriers around their homes. We also recognize the variety of day-to-day mutual help measures that slum communities have devised, such as saving groups from which they can take loans without paying usurious interest to private moneylenders; health insurance funds that they have created to provide 'medical insurance'; or common assets that communities procure and maintain, such as generators and pumps to extract water.

When CHF partners with city governments and communities around the world to improve their resilience, we double down on basic planning principles that include the most vulnerable in planning, policy making and implementing solutions. And we often start by looking for answers among

those already living on the edge. We empower vulnerable communities with knowledge, tools and support to become more adaptive themselves. We also facilitate partnerships with local governments so policies and programs can benefit from the local knowledge and independently developed community solutions.

The urban poor are incredibly resourceful populations, who have developed sophisticated coping mechanisms to deal with regular shocks and volatility. Slum residents have their own resources, networks, and have proven their capacity to save and invest in the betterment of their communities if given the chance.

It should be a normal step to include the urban poor in climate adaptation and planning processes and give them a seat at the table. Unfortunately, top-down decision-making is still prevalent in many developing cities. We work in partnership with cities around the world to create exceptions to this norm. As concerns around disaster risk reduction and climate change become more prevalent, there is a growing number of opportunities for organizations to introduce this approach onto city agendas and integrate lessons learned into national and international development programs.

Voices from the Edge
A resilient city helps vulnerable populations become…

LEGITIMIZED. A resilient city enforces universal rights for its residents, recognizes their contributions to the city and protects their neighborhoods and livelihood. Laxmi, an informal waste recycler, said:

"We were working for government freely. Twenty percent city's waste collected by us but nobody recognized us. We are doing the work what [government] staff cannot do. Others are benefiting from our work, which was no good for us. We were blamed and labeled as thieves. But now the [government] commissioner has given us the identity card," which gives them rights to their livelihoods.

INFORMED. A resilient city helps policy makers and the poor explore the conditions of their communities and the hazards they face. One resident, who participated in our Utthan program, said:

"Now I know everything about my neighborhood. While talking to the corporator [elected representative] I can give quick evidence of the amenities and residents of my cluster…once there was a debate on the availability of garbage bins and water taps and because of the mapping I knew exactly the status in my cluster and the corporator had to listen to me."

ORGANIZED. A resilient city helps residents identify problems, prioritize solutions and take action, empowering them along the way. Chanda, a resident who volunteered in our Utthan program, said:

"As a volunteer, we attend workshops. This way we few women come together and attend it. That leads to exchange of thoughts. Problems come to the notice. This in itself is a big difference. In the past, it was only house and household work. We did not have any other information. It was restricted to my kitchen, my children, and my family. But now we look beyond. We do our work and then go on to help others."

CONNECTED. A resilient city establishes connections with supporting institutions – health clinics, schools, financial institutions – to help residents improve their lives and in times of crisis. Kalpana, an informal waste recycler in one of our programs, explained the services that are most vital to her:

"We are working in this and making our children to study. Not to make them do what we have been doing. But now our dreams are that our children should also become doctor, engineer and do white collar job. You can not make your children to pick the waste."

SERVICED. A resilient city has strong, functioning infrastructure systems and provides security of tenure. Beyond bricks and mortar, these services improve the dignity and future of residents. Kamble, a slum resident, noted:

"New house enhances self-esteem of the family, particularly school going children. After shifting to new house the school going children will not feel ashamed to tell to their friends where they live. The school going children used to feel ashamed to tell to their friends that they are living in slum."

EMPLOYED. A resilient city has diverse employment opportunities and provides opportunities to learn new skills. Hari Sundar, a plumber, who participated in our LabourNet program, explained:

"Sometimes, I would not have worked for weeks. Now I have work everyday, which has also given me credibility with all the builders because they see me so often. I am a trusted worker now. I can approach workers on my own now if I want to, even big names like American Express."

A resilient city helps vulnerable populations become…

INFORMED.

CHF surveyed and mapped the conditions of more than 1.15 million slum residents

EMPLOYED.

With partners, CHF provided 51,250 people with access to training, safety equipment, jobs, and/or improved working conditions

CONNECTED.

With CHF's support, 44,000 people gained access to bank accounts, health insurance and ID cards

LEGITIMIZED.

With CHF's support, 51,250 people received ID cards and joined federation, collective or member based organization

ORGANIZED & EMPOWERED.

CHF and partners helped 6,360 people organize into Self-Help Groups or Collectives

SERVICED.

With CHF support, partners & governments provided:
- New housing for 22,792 people
- Water connections for 12,072 people
- Sanitation access for 11,770 people
- Solid waste services for 1,100 people
- Renewable energy sources for 4,114 people

Underlying causes of vulnerability

Crop failure, drought

Migration

Encroached land as entry way to city

No labor rights, daily wage work

No land ownership or right to the city

Inferior locations, limited basic services

Marginalized, hazardous work