



Socially Just and Adaptive Community Spaces

Exploring 'community commons' as potential adaptive spaces in urban poor settlements of the Global South

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The Challenge

As climate change induced risks intersect with unprecedented urbanization in the global South, the implications on livelihoods and health of the urban poor are immense. Informal settlements with low incomes, inadequate housing, and limited voice in governance, located on precarious lands are the most vulnerable to climate hazards.



Interventions at the grassroots and within plan and policy indicate adaptation (and mitigation) interventions targeting either the individual household and or the state/city-region. While the former is insufficient to engage with the externalities of livelihoods and resource access for the urban poor, the latter emerges an abstract arena for action. At the same time there is a lack of interaction between ‘endogenous’ (informal community level) initiatives and ‘exogenous’ (formal city-wide) climate change efforts.

Existing Adaptation /Mitigation Efforts



'Community commons' as a potential intervention scale in urban poor settlements

‘Community commons’ or shared spaces within settlements constitute critical spaces that provide environmental, social and economic support for the urban poor. **Environmentally**, these hold the potential to regulate and mitigate heat stresses, and manage flood and drought conditions. **Socially**, these facilitate quotidian interactions and periodic celebrations and festivals. **Economically**, community commons support income generating activities that extend from within the household. Yet these are often neglected and are therefore at

the receiving end of climate change and haphazard urbanization induced risks. Comprehending the myriad ways in which these spaces accommodate individual and community living emerges as a starting point to initiate these as critical spaces of instituting adaptation and mitigation strategies in urban poor settlements.



Goller Oni Settlement, Dharwad, Karnataka

Supported by the Adaptation research Alliance (ARA) Microgrants, the research aimed to understand the diversity, functionality, and potential of 'commons' in settlements across selected cities in the Global South. The research explored existing strategies that the urban poor employ to cope with climate change induced challenges (exacerbated by urbanisation and informality). These were used as potential entry points into possible adaptation/mitigation strategies.

The action oriented co-production of knowledge was a collaboration between Integrated Design (India), Plan Adapt (South Africa), URBAM (Colombia), Mahila Housing Trust (India).

Partners



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Research Geographies

The action research was conducted across cities representing varying geographic and cultural contexts. Primary research was carried out in Ranchi (Indo-gangetic plains), Bangalore & Dharwad (Deccan Plateau), Bhopal (Vindhyas), in India, and Moravia (Aburrá Valley in the Andes Mountains) in Colombia (blue location markers). Case studies were selected from across cities in the global South (green location markers).



Our Co creation Approach

Conceived as a transdisciplinary engagement, the research involved multiple actors and scales. However, the fluidity in the roles and contributions of the partners strengthened the co-creation process for knowledge framing and innovation. To quote an example, while CSO's were positioned as research end-users, these, given their tacit understanding of communities emerged as research contributors. Similarly,

academic partners emerged as critical research users, given their community engagements.



City, provincial and national governments are increasingly acknowledging the emerging imperative of climate change induced vulnerabilities as evidenced by increasing number of Indian states preparing climate action plans. The co-creation process generated ground-up insights which were shared with policy and planning professionals charged with steering and directing implementation. Direct engagement with city and provincial governments from the chosen sites was a focus to ensure institutional perspectives as well as institutionalization in the long run.

Exploring the nature, role, and vulnerabilities of community spaces

The research engaged in a process of comprehending community commons across typologies, (street junctions,

religious structures and attendant spaces, house frontages, pavements, garbage dumps, etc.), scales, spatial location (house-settlement, within the settlement and settlement-city interface) and the social processes – the ‘commoning’ activities (cooking, washing, socialising, vending, etc.) that produce and organise these spaces.



House frontage used for various domestic activities. A scene from Goller Oni settlement in Dharwad.



Common space in the settlement used for livelihood activities.
A scene from Nehru colony, Bhopal.



A common space used for a socio-cultural gathering. A scene from Kolikere, Dharwad, Karnataka.



'Akhra'- a multifunctional community common space. A scene from an 'akhra' in Namkum, Ranchi.



'Baari'-a traditional kitchen garden. A scene from Hatia, Ranchi



Streets becoming multifunctional, dynamic spaces. A scene from Saraswatipur, Dharwad.



Street used for domestic activities. A scene from Sanyasikunte, Bengaluru



A community centre in Moravia.



A multi-functional street. A scene from Moravia.

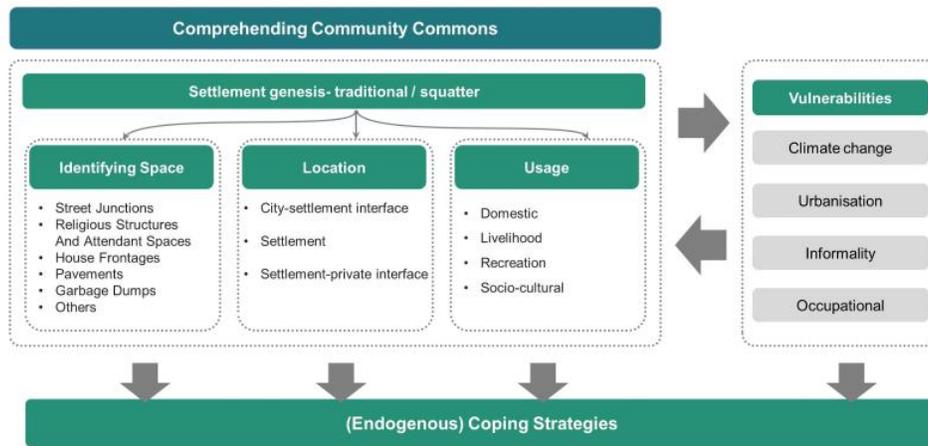


A fenced lake edge used for rearing livestock. A scene from Churmuribhatti, Dharwad.



A common spaced used for drying rice husk (as a part of rice puff production). A scene from Churmuribhatti, Dharwad.

In comprehending the commons spatially and functionally, an intersectional lens of climate change, urbanisation, and informality was used to arrive at multiple, intersecting risks (as against isolated ones) and the manifestations, and attendant implications for the urban poor. In turn, this allowed for insights into coping mechanism as entry points to possible adaptation (and mitigation) strategies.



Insights and Learnings

Everyday living, livelihood, and health impacts

Irrespective of the nature, scale, and location of the commons, these constitute critical assets for urban poor communities across all study cities. The limited availability of private space renders community commons as highly multi-functional and dynamic spaces. However, increased impacts of climate change – such as floods, and heat stress, amongst others- are threatening these spaces, in turn, affecting the individual and community living supported by these spaces.



The urban poor working in puffed rice industries in Churmuribhatti, Dharwad. Consistent heat stress cuts short their working years- most of them are unable to work beyond 45 years.

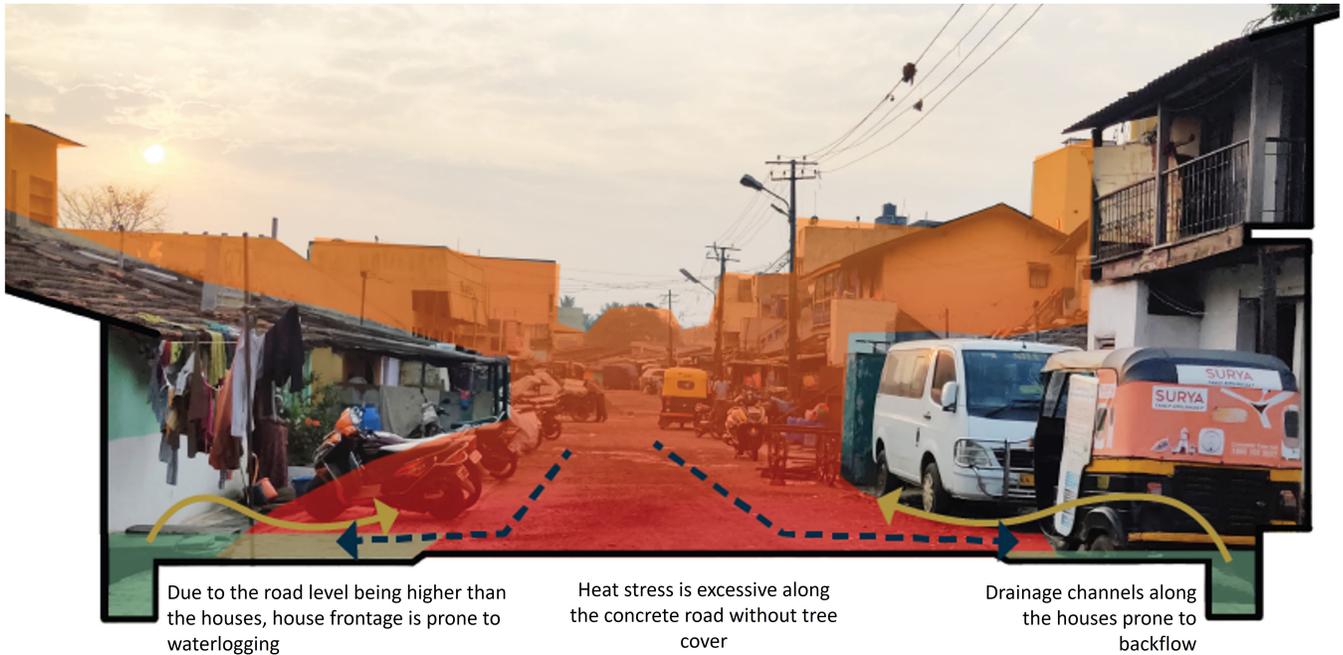


A manual rice puff production unit in Churmuribhatti,
Dharwad.



Level Difference

Flooding inside slums are exacerbated by flaws in the larger urban development initiatives. A scene from Goller Oni, Dharwad where a level difference from the main road and an inefficient drainage system intensifies flooding inside the settlement.



Decrease in common space, loss of vegetation, increased densification, and concretisation of internal streets as a part of redevelopment efforts has increased the heat stress in all the studied informal settlements. Goller Oni, Dharwad.



Common spaces become important spaces for livelihood activities within most informal settlements- be it for industries, scrap work, agriculture related storage, livestock rearing, or for small scale vending. Flooding accompanied by pollution makes these spaces unusable for carrying out these activities and leads to economic impacts.



Rapid urbanisation in the city is leading to increased densification inside informal settlements. Common spaces between buildings are increasingly being occupied by new construction. A scene from Gauhi Galli, Dharwad.



“Over the years many large trees have been cut down in our area. This tree is still standing because of the shrine. Our house doesn’t heat up in summer because of its shade”- Key person interview, Gaudi Galli, Dharwad.



In Moravia, the current high vulnerability to flooding – that tends to increase in a scenario of more frequent torrential rains-is connected to the informal occupation of the creeks and blockage of natural drainage systems.



Concretised drains clogged with solid waste exacerbates flooding incidents inside the settlement. Haveripete, Dharwad.

Flooding coupled with clogged drains and improper solid waste management, and limited access to clean drinking water during these times impact the health of informal settlement dwellers, especially children.

Coping strategies

An understanding of what the urban poor need and undertake to deal with disasters and risk, yield important insights for the restructuring of planning and programming efforts.

Different types of 'coping strategies' are seen across commons and settlements in different geographies in the global South. These include modifying their physical environment,

diversifying income sources, storing valuable assets that can be sold during difficult times and the development of social support networks in their communities.



Temporary roofs are opened during the day for ventilation and to light up the interiors. Haveripete, Dharwad.



Urban poor in the informal settlements use a variety of seemingly simple strategies to cope with heat stress. One such strategy is to sleep outside their house/hutment at night during summer, which was common across most of the urban poor settlements that was studied. Goller Oni, Dharwad.



Residents cleaning clogged drains manually. Saraswatipur, Dharwad.



Sprinkling of water to lower the heat and bring down dust. A scene from Badhbadha, Bhopal.



Dambar (Bitumen) sheets on internal lanes to manage water and air pollution. A scene from Nehru Colony, Bhopal.



Green sheets/net to reduce heat. Bagsevaniya, Bhopal.



Using settlement level common spaces for socialising and carrying out domestic activities during summer evenings was also seen in most of the settlements. A scene from Goller Oni, Dharwad.

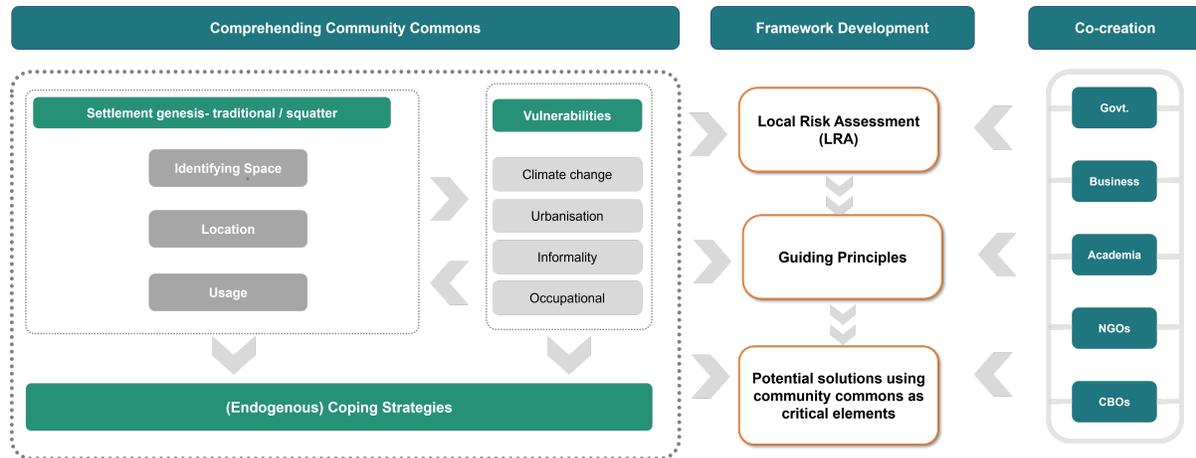
Other insights

The analysis of common spaces across cities and settlements showed that the evolution of the settlements played an important role in the character, scale and use of common spaces in these settlements. For example, traditional settlements- such as urban villages - have organically formed common open spaces (like wide street junctions, and shaded open spaces) owing mainly to its evolved spatial fabric. These are however increasingly being lost due to urbanisation and attendant densification. On the other hand, streets emerge as the most important commons for squatter-turned slum settlements.

Research Outputs

The analyses and insights led to the development of two key outputs:

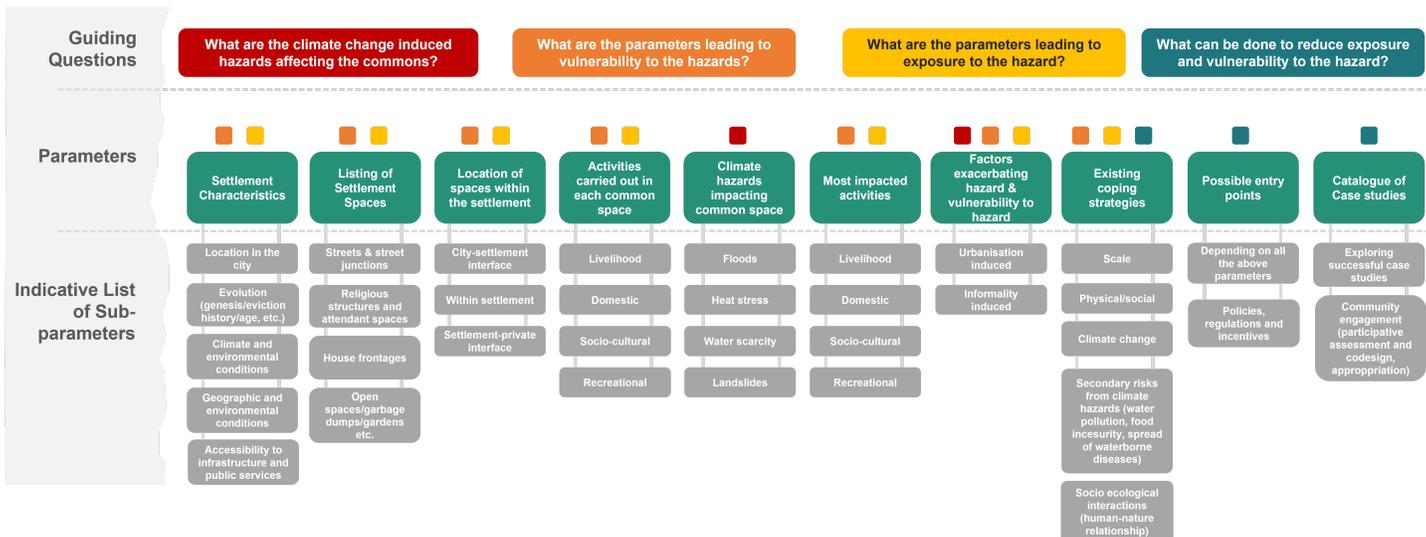
1. Local Risk Assessment (LRA) framework
2. Guiding Principles for creating adaptive and socially just community commons



A potential framework for 'Local Risk Assessment'

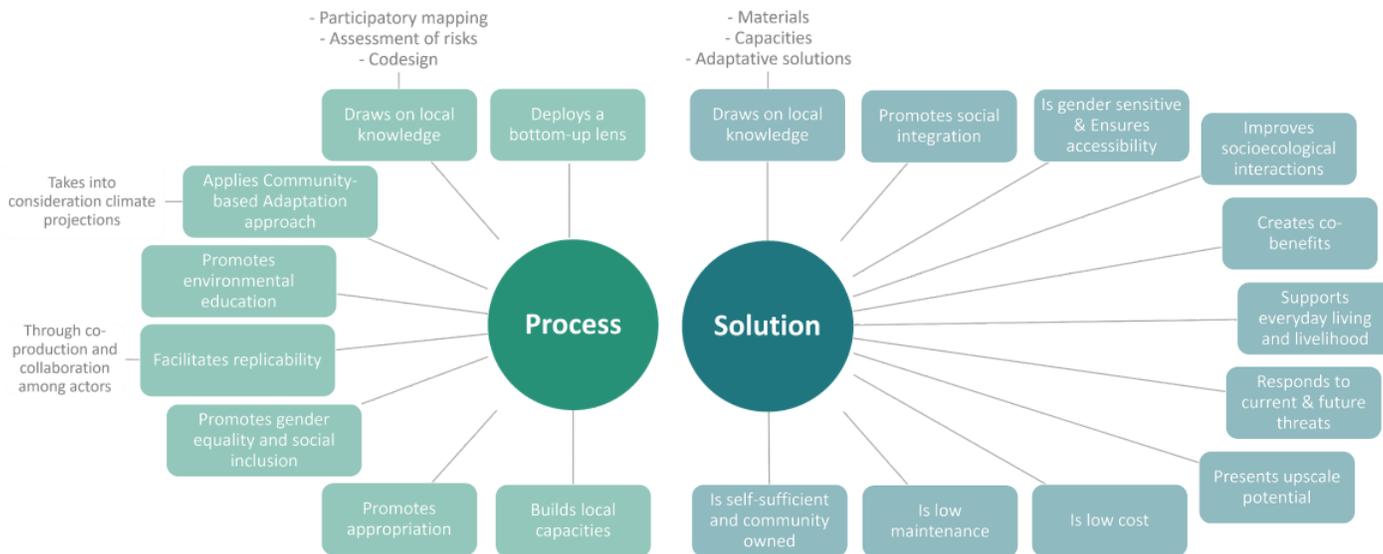
The LRA framework was built around the following guiding questions:

- What are the climate change induced hazards affecting the commons?
- What are the parameters leading to vulnerability to the hazards?
- What are the parameters leading to exposure to the hazard?
- What can be done to reduce exposure and vulnerability to the hazard?



Guiding Principles for creating adaptive and socially just community commons

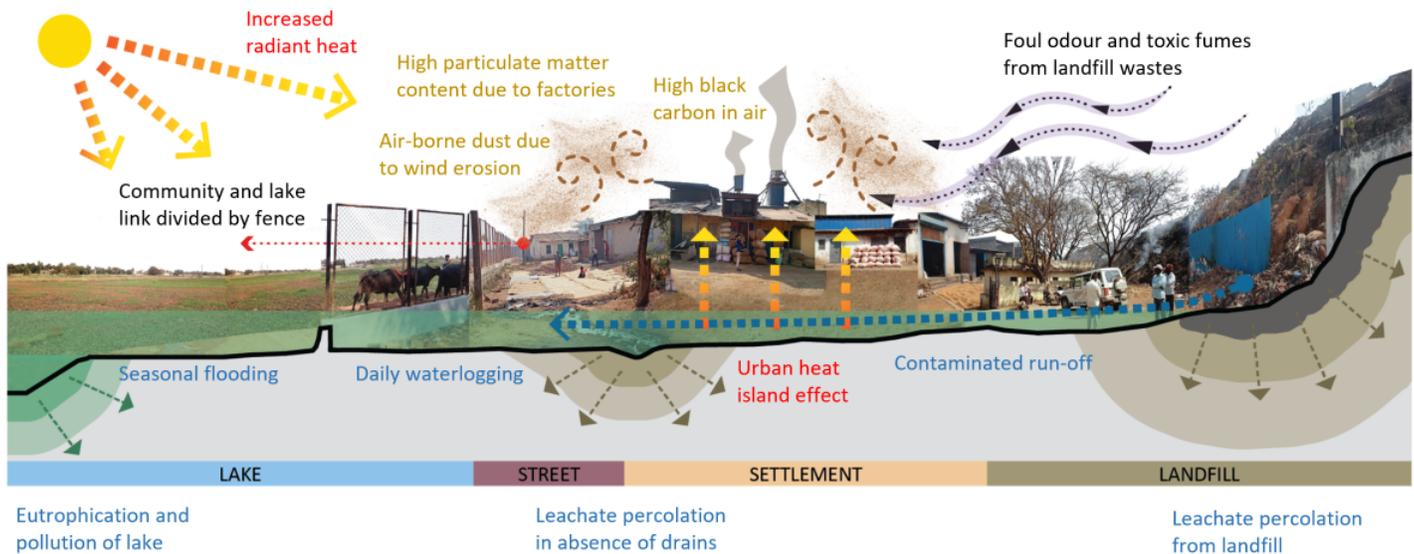
The insights gathered through this study was also used to co-develop a set of guiding principles that can help in not just the creation of adaptive and socially just community spaces, but also help in ensuring that the processes followed for the same are inclusive.



(Contextual) Solutions

The insights gathered through the assessment of common spaces, attendant risks, coping strategies, coupled with an

understanding garnered through case studies was used to develop illustrative solutions in proto-typical settlements.



Example 1: Churmuribhatti, Dharwad

Enhanced vulnerability to urban floods (due to where they live) and increased heat stress (due to the inability to control the temperature of where they live and work) in urban poor settlements necessitates adaptive solutions. This is a settlement- sandwiched between a landfill site and a lake- engaged in the production of puffed rice. The common open spaces are used by the factory units to dry their rice and husks. The settlement lacks an efficient drainage system which leads to residential and industrial waste water flooding the common spaces. The lack of green cover, proximity to a landfill, and crematorium, exacerbates the vulnerability of the settlement to climate change impacts. While the fumes from the landfill and crematorium, and dusty pavements greatly

impact the air quality and increases heat stress, leachate from the landfill, especially during heavy rains impacts the areas used for livelihood and the lake water quality as well while possibly polluting the groundwater in the area.

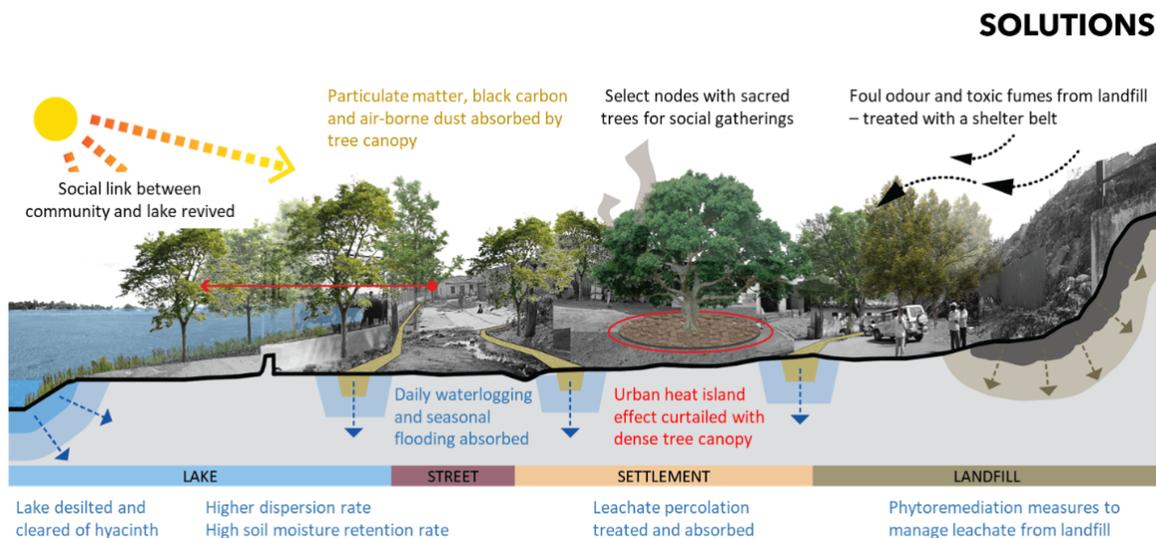
Potential solutions for Churmuribhatti, Dharwad

Green spaces:

- Buffer vegetation along the lake edge to revive lake ecology and to provide shaded areas used for domestic, livelihood and social activities.
- Buffer vegetation near the landfill to block toxic fumes and improve air quality in the settlement.
- Green cover along the edge of selected lanes to combat heat island effect.

Elements to increase surface permeability:

- Percolation trenches(with aggregate layers) to decrease surface run-off and filter it before it percolates.
- Permeable pavements to allow recharge of run-off water and bring down the issue of dust.





Example 2: Goller Oni, Dharwad

The main livelihood of the settlement dwellers is scrap work. Organised along the five lanes (Oni), this squatter turned slum settlement lacks defined common (open) spaces within the settlement. In the absence of such spaces, the five streets evolve into common spaces for the community. These emerge multi functional dynamic spaces, with a potential adaptive capacity. An existing large derelict open space at the rear of the settlement is currently used for garbage dumping.



Due to the road level being higher than the houses, house frontage is prone to waterlogging

Heat stress is excessive along the concrete road without tree cover

Drainage channels at the houses prone to backflow

Heat stress and flooding emerged as important issues affecting the quality of life in the community.

Some of the suggested measures to address these issues include:

Blue-Green spaces

- Green spaces along the streets to reduce heat island effects and create spaces suitable for recreation, social, and livelihood activities.
- Conversion of the derelict open space into an active usable community space which can be multi-functional (usable for social, recreational, livelihood activities). A water retention pond within this open space will play the dual role of bringing down the heat island effect further and also act as a retention pond to hold and recharge excess run off storm water.

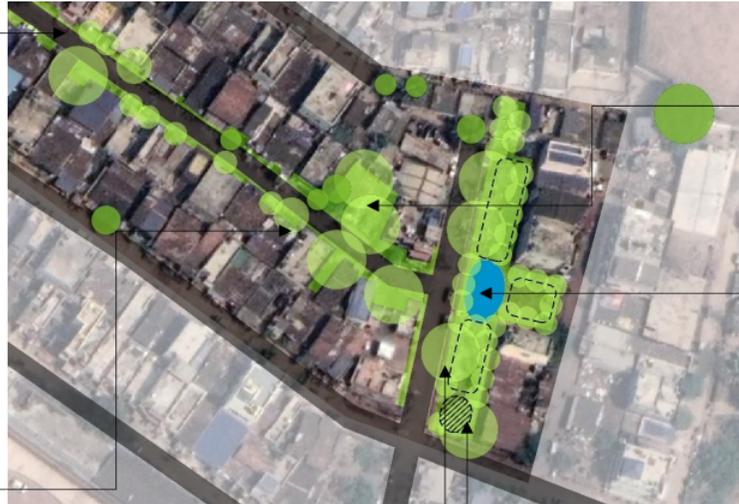
Elements to increase surface permeability

- Percolation trenches(with aggregate layers) to decrease surface run-off and filter it before it percolates.

Using buffer space between house and road to create recharge trenches that will allow water to percolate and curtail waterlogging

Recharge trenches will also mitigate flooding by holding runoff and allowing percolation

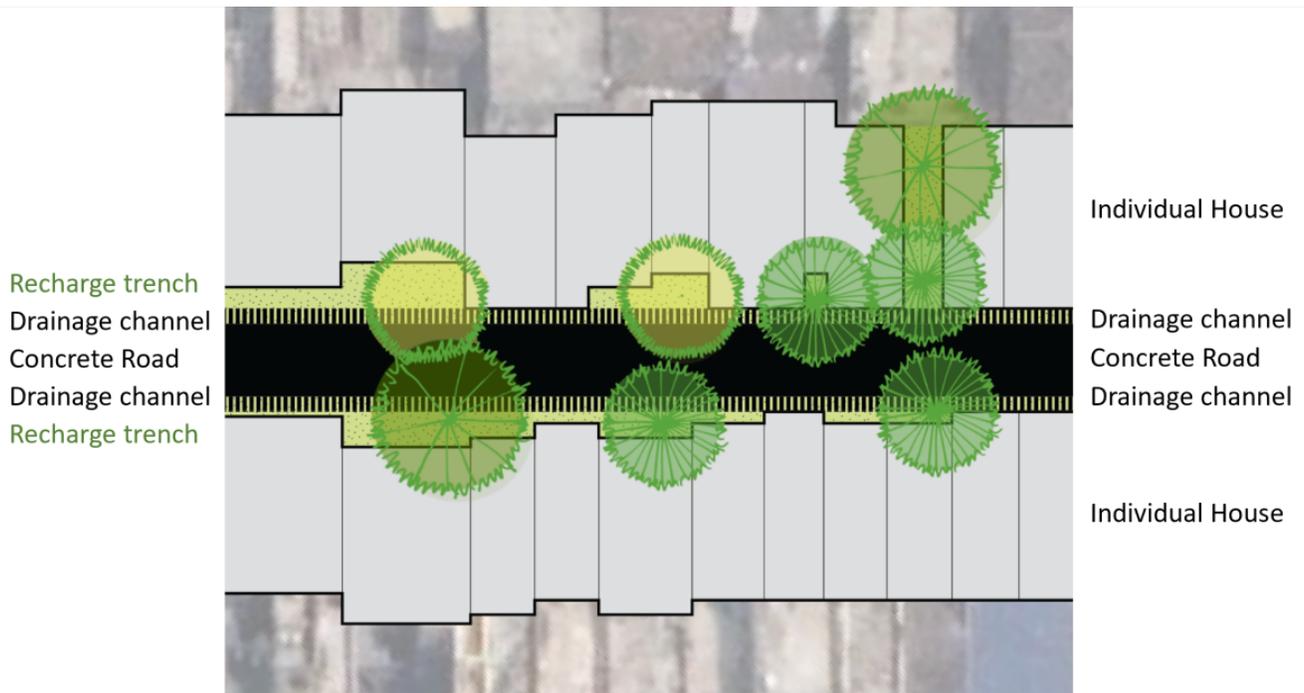
Creating an active usable public space with public amenities like open gyms, walking tracks and play areas



Increased tree cover to help reduce temperatures and create more conducive common spaces for primary social activities

Water retention pond created to absorb and hold excess run off from the settlement.

Designated area for waste collection and segregation



Proposed trenches along the available house frontage with native species of trees to manage :

- Local heat stresses and improve microclimate
- Sheltered social spaces
- Absorb rainwater and backflow



Recharge trenches designed **along available frontage of the houses** to

- curtail waterlogging
- recharge ground water
- absorb backflow from drains

Heat stress reduced with tree cover along the concrete road

Permeable surface also acts as active social front



Example 3: Moravia

Moravia is one of the places with the highest population densities in Colombia. The neighbourhood was established as an informal settlement in a vacant land close to an abandoned train track and to an informal landfill that helped configure a local economy associated with separation and recuperation of recyclable materials from the trash. Moravia is one of the densest dense urban poor settlement in Medellín, Colombia. The neighbourhood emerged as an informal settlement in a vacant land close to an abandoned train track, abutting an informal landfill. It offered livelihood options pertaining to the separation and recuperation of recyclable materials from the trash. Eventually, this emerged as an important local economy associated with waste.



Since 2004, an integral urban project is being implemented by the local government. This included the relocation of the families that occupied the hill of trash, the decontamination of this area and its transformation into public space.



Transformation of the hill of trash into a public space by the Integral Urban Project in Moravia.

Way Forward

While establishing the potential of urban commons as socially just and adaptive spaces, the study identified three major gaps.

- First, the urban poor are a heterogenous group within which there are the “marginalised amongst the marginalised”. Women, elderly and the disabled are a near invisible striation. Comprehending commons through an intersectional lens becomes pertinent in this regard. While a broad LRA framework evolved out of the co creation process, this needs further elaboration and detailing drawing from these stratifications. A detailed framework can assist in evolving contextually better suited adaptation/mitigation strategies.

- Second, there is a lack of integration between the adaptation strategies at the urban poor settlement, neighbourhood, and the city scales. City level initiatives (including city climate action plans, city risk assessment frameworks, etc.), do not capture the mixity and complexity of the risks experienced by the marginalised groups. Thus, granular and nuanced local risks assessments leading to decentralised community owned and driven solutions require institutionalising ground up initiatives in larger city action plans.
- Third, there is a dearth of qualitative and quantitative data on the urban poor, the spaces they inhabit and co-habit. This impedes their integration in city level development frameworks while also negatively impacting their everyday living .

These gaps point to potential entry points for furthering and expanding the insights of this study.



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