RESTLESS DEVELOPMENT

CLIMATE CHANGE IN BANGALORE THROUGH THE LENS OF YOUNG PEOPLE

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List of Acronyms and Abbreviations

BBMP	Bruhat Bengaluru MahanagaraPalike
BDA	Bengaluru Development Authority
CBO	Community Based Organization
COP27	27th Conference of the Parties/27th United Nations Climate Conference
COVID	Coronavirus Disease
FGD	Focussed Group Discussion
GHG	GreenHouse Gases
IISc	Indian Institute of Sciences
INR	Indian Rupee (currency of India)
IST	Indian Standard Time
KIADB	Karnataka Industrial Area Development Board
KSNDMC	Karnataka State Natural Disaster Monitoring Centre
NGO	Non-Government Organisation
RD	Restless Development
SDGs	Sustainable Development Goals
SGBV	Sexual and Gender-based Violence
SPWIPT	Student Partnership Worldwide India Project Trust
UNFCC	United Nations Framework Convention on Climate Change
UNO	United Nations Organization
YCAL	Youth Climate Action Lab
Codes Used	
AKH	Adigara Kala Halli
AN	Ambedkar Nagar
AN-RN	Akshaya Nagar-Ramurthy Nagar
DJ Halli	Devarajeevana Halli

1. Executive Summary

Youth Climate Action Lab (YCAL) is a youth-led movement to address the issues of climate change by engaging young people to co-design and lead research in vulnerable communities in Urban Bengaluru. Unabated urbanisation with change in land use patterns, massive concretization, large scale loss of green cover, encroachment of lakes, tanks and drains and lack of attention towards conserving and regulating floodplains of water bodies have led to climate change in the city.

Climate change impacts the lives and livelihoods of the low-income communities, especially the youth who are deprived of access to their basic entitlements like education, health, decent work opportunities, clean drinking water and sanitation. The low-income vulnerable communities, especially young people, are often not involved in the conversations on climate change and the policies related to urban issues.

The major aim of the present research was to understand the perspectives of the communities, with a specific focus on young people on a) their understanding of climate change, b) their experience of its impact /effects, c) their response to climate change in terms of what should be done to mitigate the changes and d) what support is expected from various stakeholders.

The research studied various local issues like i) water distribution, ii) solid waste management, iii) infrastructural issues and iv) livelihood concerns specific to five underprivileged localities of urban Bengaluru - Adigara Kallahalli, Ambedkar Nagar, DJ Halli, Ramurthy Nagar-Akshaya Nagar and Tubrahalli - to understand how these issues contribute to or are impacted by climate change, that directly impacts the lives of the most marginalised and vulnerable communities living in the city.

Putting young people at the centre, the research adopted a youth-led mixed methods research approach, co-designed and led by young leaders, with training and support from Restless Development. Both qualitative and quantitative methods of data collection were employed through surveys and focussed group discussions. The youth leaders were supported to develop semi structured survey questionnaires and FGD guide to interact with various community members to capture information on the themes and perspective on climate change.

Through a survey of 688 respondents and 22 FGDs covering 123 participants across 5 communities, the young climate leaders tried to understand the ground realities and challenges experienced by the communities, correlating it to global concerns around climate change and local actions and initiatives that can address the same.

The programme engaged 8 Youth Climate Champions and 2 Youth Researchers to conduct the study, along with 120-150 Youth Changemakers who support and take forward the study in their respective communities. 296 survey respondents were youth and 9 FGDs were conducted exclusively with student youth and youth from local communities. Overall, 450-500 young people were involved in the study as researchers, facilitators, respondents and advocates.

The major findings of the study against the 5 local themes are:

Infrastructure and Resilience in Tubrahalli:

Being a small informal settlement of migrants with no pucca housing or land rights, access to water, electricity and sanitation are severely limited. Their lives, health and livelihoods are harshly impacted during extreme events, whether floods, increased temperatures or during Covid. The residents identified lack of land ownership, absence of unity in the community and lack of support from authorities and local governance as key challenges to addressing their issues.

Water Management in DJ Halli:

Being an old and large recognised slum, water supply was direct to home through pipes with good quality drinking water. However, water supply was uneven, erratic and irregular in some parts of the slum, indicating unequal access. Muddy water during rainy season and water borne diseases were common and the residents approach BBMP to resolve the water related issues.

Youth and Livelihoods in Adigara Kallahalli:

There has been a significant shift in livelihood patterns over the years, where agriculture, the major occupation of families, became viable due to lack of water, change in land use pattern, rapid

urbanization and climate change. Migration for work or daily wage labor being the norm now, youth in the community want to pursue job-oriented skill-based education/and higher education in order to get decent jobs or start a business. Awareness on government skill development trainings was present, with many availing the trainings. Youth are ready to migrate in search of better opportunities that provide secure livelihood.

Solid Waste Management in Adigara Kallahalli, Ambedkar Nagar and Ramurthy Nagar-Akshaya Nagar:

Less than one third of the residents avail BBMP service for garbage disposal due to inadequate services. Garbage collection was not regular by BBMP in Ambedkar Nagar. The BBMP trucks do not come for collection in the narrow lanes and waste is thrown in open plots overflowing into the nearby water bodies. Residents reported having health issues due to improper waste disposal. Respondents think it is important to segregate waste and would like to practice segregation.

The overall findings on the overarching theme of Climate Change across 5 locations are presented in terms of:

a) Understanding of Climate Change

1 in every 2 youth was aware about climate change as against 1 in 3 older adults. College youth (not residents of the communities) had a good academic knowledge of the issue. Men were generally more informed through mainstream sources, and there was a positive correlation between education level and knowledge on the issue. However, the qualitative data shows that the native wisdom and innate understanding of issues by women and the 'uneducated' was quite accurate and comprehensive despite lower self-reporting in the survey.

b) Experience of Climate Change

Every other person surveyed in Tubrahalli, Akshaya Nagar and Adigara Kallahalli reported personally observed changes in their environment. Rise in temperature was the most common change observed, followed by water shortage, across the 5 locations as a whole. Location-specific changes observed include water shortage in Tubrahalli and rise in temperature and landscape changes in Ambedkar Nagar. The respondents rated Climate Change as affecting their personal health and safety either moderately or seriously.

c) Response to Climate Change

More than a quarter of all youth rated the issue as "very significant". Reducing use of plastic, planting of trees and some 'other' measures were mentioned to tackle climate change, primarily at an individual consumer level. There were some reports on initiatives taken and young people were more active in taking initiative at a personal level. An understanding of larger systemic and structural measures, including how policy decisions at higher levels impact the people on the ground is lacking among most of the respondents, especially the youth. Across communities, the role of the local government agency BBMP was overwhelmingly emphasized, followed by the role of the national government in addressing climate change.

d) Youth-specific FGDs on Climate Change

These were conducted among college going and community youth to understand their specific perspectives. Disparities between them in their understanding, priorities and approach to addressing Climate Change were visible. The role of the individual was mostly recognized and emphasized, though some of the college going youth were able to link it to state and national policy and global factors like industrialisation and consumerism. Both older men and women and young people themselves strongly believed that young people should take the lead, but are currently not. They require to be sensitized, mobilized and organized.

Pathways for forward actions in the communities have emerged, which include – awareness building on climate change, systematic study and documentation of climate impacts, policy engagement and civil

society alliance building, ideas for sustained youth engagement, institutionalized interfaces with duty bearers, among others.

The unique process adopted in this programme has enabled and demonstrated the potential of youth leadership at various levels - from understanding and engaging with global dialogue, academic and policy perspectives, to gathering grassroots experiences, local mobilizing and organizing ground support, to studying and designing evidence-based solutions, and strengthening mechanisms for accountability. The impact of the programme needs to be measured not just in terms of action and impact on the issues on ground, but also in terms of the growth in awareness, leadership and collaboration between young people and networks of young activists, which will steer and sustain the movement towards climate justice. Therein lies the real potential and hope for the future.


WHAT CLIMATE CHANGE MEANS TO DIFFERENT PEOPLE
THE FLOOD-PLAIN DWELLER
THERE GOES HOME.
THE FISH-WORKER
THERE GOES A MONTH'S INCOME.
THE FARMER
THERE GOES EVERY HOPE OF PAYING OFF MY DEBTS.
THE URBAN ELITE
THERE GOES ANOTHER CHANCE TO FLAUNT MY H & M WINTER COAT!
THE ENVIRONMENT MINISTER
THERE GOES ANOTHER MONTH OF SIGNING CLEARANCES FOR INDUSTRIALISTS, WITH MY A.C. ON.
THE INDUSTRIALIST
AH! THE AROMA OF NEW C.S.R AND TAX-EXEMPTION OPPORTUNITIES IN THE AIR!
Sniff
www.greenhumour.com

2. Background/ Brief project description

Youth Climate Action Lab is a youth-led movement on addressing the issues of climate change in Urban Bengaluru. Climate change is one of the most pressing issues affecting young people. Young people's vision of a just and sustainable world is threatened by the ongoing climate change and related systemic problems such as inequitable access to resources due to power imbalances and structural marginalisation. Young people are likely to be impacted most by this uncertain future, including adverse effects on their physical and mental health. At the same time, even as they make up over half the world's population, they are systematically excluded from conversations around climate change.

The 36 month-long phase of the movement commenced in November 2021. It has engaged with 8 Young Climate Champions and 2 Youth Researchers to train, mobilise and support them to collect and share evidence, data and qualitative experience to inform youth-led solutions, together with at least 120 young changemakers, to collaborate and drive change in Bengaluru, Karnataka, India.

Based on the study, the Youth Climate Champions will work on identified problem areas and take lead in gauging challenges arising from the impacts of climate change. They will raise awareness to mobilise communities to take action on the barriers brought about by climate change, especially affecting people in the informal settlement colonies. In the process, the young champions and researchers will engage their peers, communities and key decision makers to build a movement that drives progress toward the State Climate Action Plan.

Restless Development is a youth-led development agency whose mission is to place young people at the forefront of development and change. Currently working directly with 400,000+ young people and many youth organisations globally, Restless Development shapes policy and practice by supporting young people to make their voices heard	Youth Researchers (YR) These are young people in urban Bangalore, who are selected from a call for applications for students and professionals to contribute meaningfully to this research over a period of 12 months (part-time, stipend provided). Irrespective of previous research

at the local, national and global level, and supporting governments and international organisations to involve young people meaningfully in decision making.

SPWIPT (Student Partnership Worldwide India Project Trust), affiliated to Restless Development as the India Hub, over the last 2 decades in India, has touched the lives of over a million young people across the country by enabling community-based youth leaders to lead solutions to development needs that they, their peers, and communities face. With young women and girls' empowerment as a key focus, the organization addresses issues such as sexual and gender-based violence (SGBV), livelihoods opportunities, menstrual health management and child, early and forced marriage with youth-led programs.

Youth Climate Champions (YCC)

The work of the Climate Champions contributes to a simple idea – if young people have the right knowledge, skills and networks, meaningful opportunities to participate and the ability to create and share data, they would be leaders in holding the governments to account and bring the voices of civic participation to core. With the support of Restless Development, they are leading the process of understanding Climate change in informal settlement colonies across urban Bengaluru,

experience they bring in, the researchers are provided with support, training, and mentorship throughout their tenure with the project. 2 Youth Researchers have contributed to this study.

The major responsibilities of the Youth Researchers and Youth Climate Champions are:

- Provide research support to a project on climate change and its impact on young people
- Conduct primary and secondary research around the topics and questions
- Provide guidance and advice on meaningful youth engagement throughout the research
- Participate in key trainings and activities
- Support in the analysis and write up research findings

Involvement of Young ChangeMakers (YCM):

The ChangeMakers are local youth (18-30 years) from the localities/communities where the climate champions work on the primary research. Working on a voluntary basis for a year, they support the youth researchers and champions in data collection, building relations with the community and conducting campaigns. They also support the Youth Champions in identifying likeminded youth and platforms and create a network of change makers

Karnataka and developed accountability frameworks. 8 Climate Champions have been part of the project over a 12 month period.	among their peer group for building awareness on climate change and climate action.

3. Review of Literature

The climate crisis remains the biggest long-term threat facing humanity, with potentially the most severe impact over the next decade, according to the 2022 World Economic Forum Global Risks Perception Survey. The consequences of climate change now include, among others, intense droughts, water scarcity, severe fires, rising sea levels, flooding, melting polar ice, catastrophic storms and declining biodiversity. Human activities, such as the use of fossil fuels, deforestation and unsustainable agriculture contribute to climate change, which decreases the availability of nutritious food and clean water, and destroys ecosystems and secure living environments. This leads to malnutrition, ill health and migration, rendering youth particularly vulnerable (UNO, 2023).

India is ranked at the 7th position in the Global CRI 2021 with a CRI (Climate Risk Index) score of 16.67. India also recorded the highest number of fatalities due to climate change and the second highest monetary losses from its impact in 2018. The country emits 7% of global emissions, despite having 17% of the world population. Temperatures in India have risen by 0.7 °C (1.3 °F) between 1901 and 2018 (Wikipedia, 2023). Heat waves' frequency and intensity are increasing in India because of climate change. Severe landslides and floods are projected to become increasingly common.

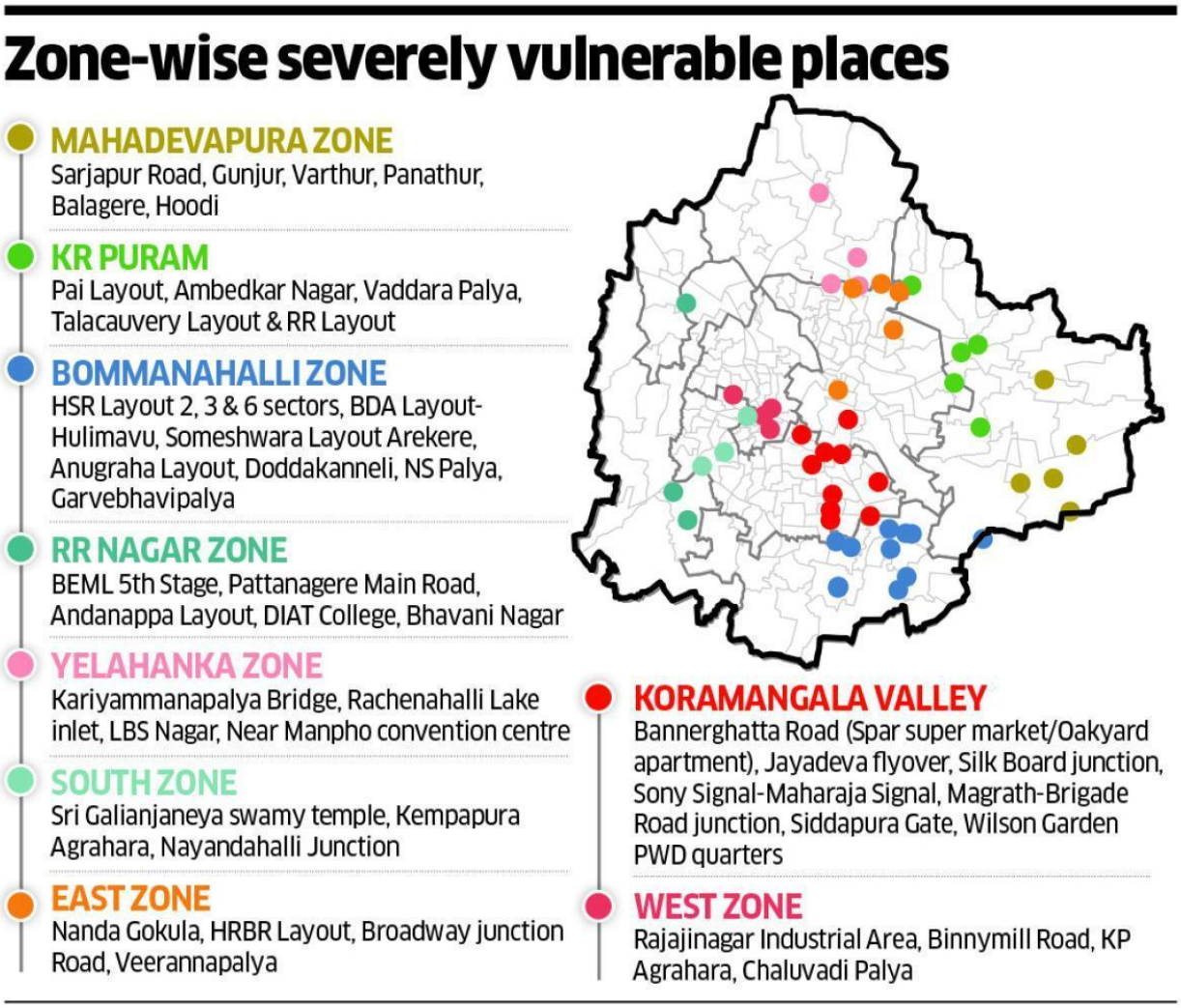
Climate Change in Bengaluru is neither sudden nor new. “Bengaluru, historically, has had a pleasant climate throughout the year, but now it is already facing severe climate change effects such as urban heat islands, flooding... and increased summer temperatures”, according to a study by University of Trento, Italy and Azim Premji University, Bengaluru, published in ‘Land Use Policy’ journal (Bangalore Mirror, 2016). Bengaluru Urban was ranked 224 and categorised as moderately vulnerable to climate risk in the first-ever climate change ranking report in India. The study finds 91% of Bengaluru is at the mercy of climate change. However, the environmental literacy rate in Bengaluru is 3.5 per cent (Ramachandra, 2022).

The study ‘Climate change scenario in Karnataka: A detailed parametric assessment’ by the Karnataka State Natural Disaster Monitoring Centre (KSNDMC) in June 2020 concludes that increasing amounts of rainfall, as well as annual variability of rainfall in Bengaluru Urban district are indicators of climate change in Bengaluru. Experts working on urban issues, lakes and flood management said that unabated urbanisation, large scale loss of green cover, encroachment of lakes, tanks and drains and lack of attention towards

conserving and regulating floodplains of water bodies have increased the threat of urban flooding (The Quint, 2023).

India has the largest youth population with over half the population under 30 years, who are likely to face the impact of climate most severely, in the time to come. It is also the second most unequal country globally[1] with 670 million people constituting the poorest half on the country[2], who do not even have the basic essentials for decent living, making them the first affected and most vulnerable to climate exigencies.

[1] According to a report by the Johannesburg-based company New World Wealth
[2] Oxfam Inequality Report 2021



[3]

The low-income vulnerable communities, and especially the youth whose futures are at stake, are not generally involved in conversations on climate change and the policies related to urban issues. The major aim of the present research was to uncover the perspectives of the communities on how they understand and experience climate change, how they are responding to it and what they think should be done to mitigate the effects and the support needed for the same. Studying the context-specific local issues of water distribution, solid waste management, infrastructural issues and livelihoods in five resource poor

[3] https://www.deccanherald.com/city/bengaluru-infrastructure/bengaluru-58-places-identified-as-highly-prone-to-flooding-844974.html

communities in urban Bengaluru, the study attempts to piece together the broader common canvas of climate change, and its impact on the people living in the margins.

4. Purpose and Process of the Study

By co-creating this research with young people from Bangalore, the aim is to ensure that:

- Youth insights are captured by those best positioned to do so – their peers
- Research around youth experiences of climate justice, experience a power-shifting – fundamentally rethinking who is an 'expert'? Who owns knowledge? And who gets to generate knowledge?

This research is guided by the priorities of young people, and aims to contribute to a body of thought and action that places young people at the centre of understanding on this issue.

The expectation is that the research will contribute to a nascent but growing body of literature and dialogue that places young peoples' knowledge, lived experiences, expertise, hopes, and aspirations at the centre of the debate on climate change and climate justice.

The Climate Change & Accountability Toolkit

Restless Development has developed a Climate Change & Accountability Toolkit with an accountability framework. It is a multi-stakeholder action plan for monitoring, reviewing and seeking accountability for the implementation of the SDGs and actions in the country. Young people can and must play a central role in this movement of citizen-led accountability, and this toolkit consists of the tools and knowledge that need to hold governments accountable on the commitments and involve local people in the process to bring the change and have their voices heard. By providing a range of practical tools, resources and information, this toolkit intends to support young people and their organisations to play a meaningful role in seeking accountability and initiating steps towards Fair Urban Transition related to Climate Change, by strengthening the coordination of youth-led community-based organisations (CBOs) and other youth actors monitoring the State Climate Action Plan in Bengaluru.

This toolkit is primarily for Youth Climate Champions, who in collaboration with Restless Development, mentors, peers and other stakeholders, would develop accountability frameworks in Bangalore, Karnataka. The toolkit also aims to support other young leaders and their CBOs, networks and movements working on

accountability initiatives. It has been designed to be adaptable to any participatory accountability efforts, from the local up to the global level. The project also intended to amplify the Accountability Advocates' voices through the Youth Collective - a movement Restless Development is building in support of youth-led change - engaging young changemakers and coalitions of youth-led organizations and partners.

Research Objective*s*

The present research was aimed to develop a nuanced understanding of the following questions:

- How do young people in urban Bangalore understand climate change?
- How do young people expect the effects or interventions surrounding climate change to influence their working lives in the future?
- What support and actions do young people want governments/ NGOs and other organisations to take to mitigate the effects of climate change?

Research Setting

The research was undertaken in Urban Bangalore, Karnataka. The locations were selected by the Youth researchers and champions with the support of Restless Development team through various processes. Altogether 5 locations across Bangalore were selected to conduct research in 4 thematic areas and 1 core area i.e. Climate Change.

The details of the locations are in the Annexure 2

Sampling methods and sample size

Initially it was planned to do a simple random sampling to collect data. However, based on the availability of change makers, community members etc. a combination of purposive and convenience sampling was employed. The total survey sample size was 688 respondents across 5 locations. The FGDs were conducted with men, women, students as specific or mixed groups to gather nuanced personal experiences and subjective responses. A total of 123 people were engaged through 22 focussed group discussions, including women-only and youth-specific FGDs. The details of the study sample and locations are shown in the table below.

S.No	Name of the Location	Theme of the research	Survey Sample	No. of FGDs
1	Adigara Kallahalli (AKH)	▪ Youth and Livelihood, ▪ Solid Waste Management, ▪ Climate Change	296	--
2	Ambedkar Nagar (AN)	▪ Solid Waste Management, ▪ Climate Change	56	2
3	DJ Halli (DJ)	▪ Water Management, ▪ Climate Change	134	4
4	Ramurthy Nagar-Akshaya Nagar (RN-AN)	▪ Solid Waste Management, ▪ Climate Change	152	--
5	Tubra Halli (TH)	▪ Infrastructure and Resilience ▪ Climate Change	50	7
6	College students from different locations and community youth from Sarjapur	▪ Climate Change	--	9
	5 locations	4 local themes + 1 core theme	688 survey respondents	22 FGDs with 123 participants

Research Tools

Both qualitative and quantitative methods were used to collect data.

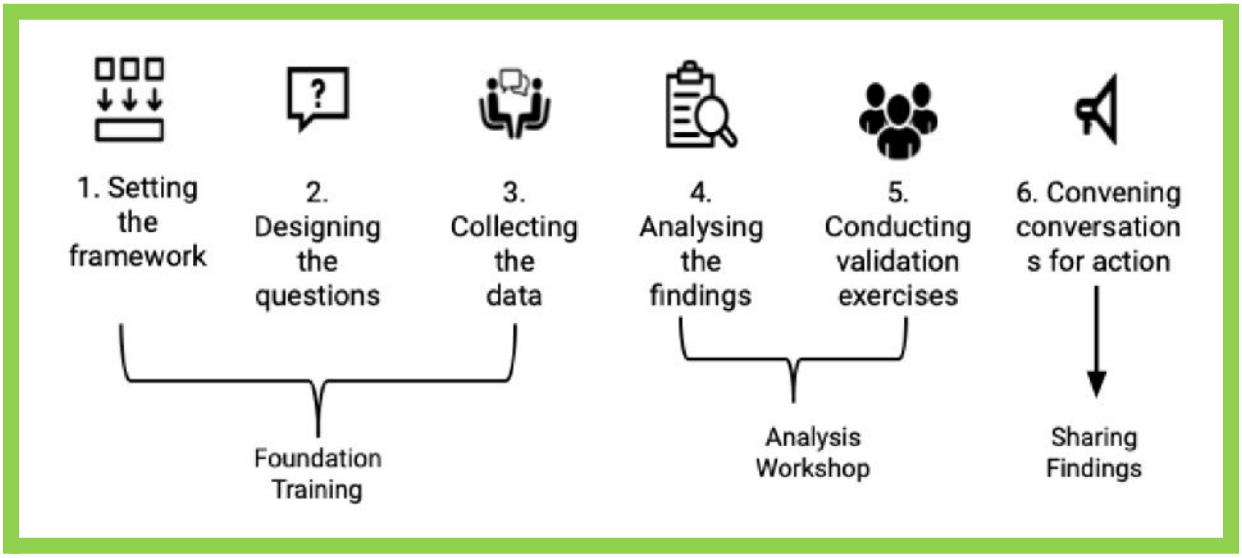
Quantitative: Semi structured survey questionnaires on each theme were designed with basic demographic data and questions pertinent to each theme and perspectives on climate change.

Qualitative: Focussed Group Discussion guide was developed to interact with different age groups/gender to capture subjective information and nuanced personal experiences on the themes.

The tools are enclosed as Annexure 3.

Research Processes

The youth led methodology consisted of six steps aimed at collecting, analysing and presenting the findings through a collaborative process.



As part of the programme, 8 Youth Climate Champions and 3 Youth Researchers trained in the Youth-led Advocacy and Accountability model spread out geographically in different parts of urban Bangalore to identify the local issues impacting the city related to Climate Change and as part of their role as advocates, they have been able to work around identifying and mapping the areas and their ecosystem by building rapport with the community to understand the issues at a much deeper level.

The youth researchers and champions further engaged 120-150 changemakers from across the 5 locations, who supported the Youth Champions and Youth researchers to collect ground experiences from all the 5 locations.

While big picture research questions and objectives were outlines by Restless Development – crafting research tools and objectives, and analysing the findings was done by the young researchers themselves (with RD support). This was done through a combination of primary and secondary research – including both qualitative and quantitative research designs.

The activities taken up by the Youth Researchers and Youth Champions during the period:

- Foundation training and finalization of research questions
- Identifying the locations to conduct the research and also identified the like minded youth from the local communities as change makers
- Providing training to the change makers
- After finalizing the research questions, aims and objectives were articulated, qualitative tools were finalized and mapping respondents for their research.
- Quantitative survey tool to validate or build on the findings from the qualitative research
- Conducted FGDs and KIIs (information about KIIs was not available)
- Analysis sessions were conducted to analyse the data collected and prepare the dossier by substantiating qualitative and quantitative data

Limitations and Adaptations in the Study:

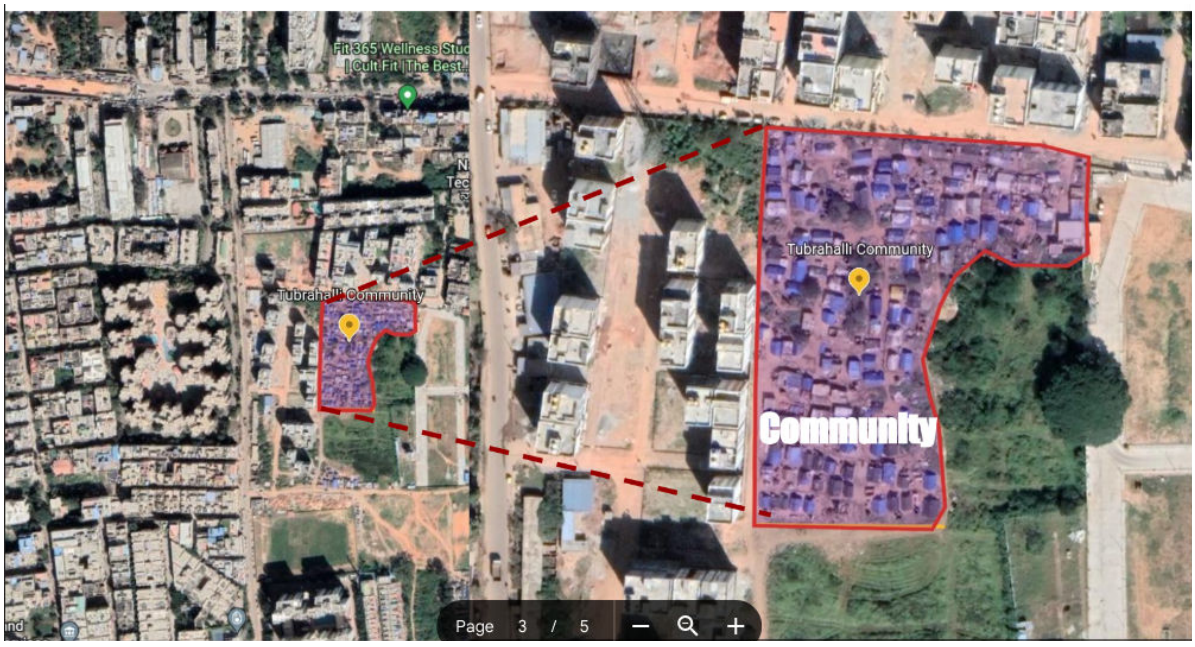
- The study consciously adopted a method that was youth-led and youth centric, giving an opportunity to the young leaders to lead several of the processes in the study. Even though they received intensive training, it is acknowledged that the young people were not professional researchers, and therefore efforts have been made to accommodate and compensate for the same during data analysis and interpretation.
- The study focused on youth; however ground realities in terms of availability of respondents, as well as their ability to contribute to advocacy efforts guided the choice of respondents' profiles. Though there was a lesser proportion of youth in the survey, this was made up for through youth-specific FGDs, wherever possible.
- Though the original plan was to do a random sampling, it was adapted to convenience and purposive sampling based on community considerations and skill level of youth researchers.
- As the survey was designed by the youth leaders themselves, some survey questions did not have standardized options across locations. However, they have been standardized at the time of data analysis.
- The responses on the question of caste were incomplete and varied based on the interpretation by the respondents and researchers. It is to be noted that the responses were taken as provided (without cross-verification) or added into the "others" category when unclear.
- The "Others" has been taken as an umbrella term that includes :
    - 1. Castes which were not part of the official list of caste divisions, provided by the government.
    - 2. Community people who did not identify with any of the other options. This may include those who identified as 'Muslim'
    - 3. People who did not know which caste category they belonged to.
- The constitution and profiles of the focused groups varied across locations and issues, therefore most of them have been considered as mixed group FGDs. Where relevant, individual respondent's profiles or specific 'youth FGDs' or 'women FGDs' have been mentioned.

5. Key Findings (Local Thematics)

The key findings from the study are presented along four thematics – the chief issues of concern to the local community as identified by the Champions through their secondary research, personal visits and interactions with youth and other key community stakeholders and groups.

Theme: Infrastructure and Resilience (IR)

Location: Tubrahalli



Study Site: Tubrahalli is a small community of migrants, who were once practicing agriculture in Northern Karnataka - Bayaluseeme and migrated to Bengaluru 30 years back for better livelihood opportunities. It is located in the eastern part of Bengaluru, which is more than 20 kms from the city center. An agricultural land converted into residential area due to development, the area has little vegetation of grass, shrubs and tall trees, and is surrounded by highly developed localities like Whitefield, Varthur and Brookfield. The total population in the migrating community is around 100-150 which varies every year due to migration to other cities for education and livelihood. Currently they are residing in rented land and working as housekeepers, maids, delivery services, rental car drivers etc.

Focus Issue: The study was mainly focused on Infrastructural facilities and resilience of the communities residing in Tubrahalli. The study covered various aspects of infrastructure and services which contribute to

resilience of a community. A survey of 50 respondents and 7 FGDs covering 50 persons including women, men and youth was conducted by Climate Champion Ms.Akshatha (profile in Annexure 1).

Respondents: The total survey sample was represented by 60 percent men and 40 percent women. 40 percent of the respondents were youth in the 18-29 years age group and 38 percent were between 30-39 years. The remaining respondents were 40 years and above, including 3 senior citizens over 60.

SEX	%	AGE	%
Female	60.0	18-29	40.0
Male	40.0	30+ years	60.0
CASTE	%	EDUCATION	%
SC	58.0	No formal Education	44.0
ST	26.0	Up to Secondary (1^{st}-8^{th})	40.0
OBC	14.0	High School and above (9^{th}-12^{th})	14.0
General	NA	Dip./ Cert./ Graduation/ PG	2.0
Others	NA		

Key Findings:

- Almost entirely a settlement of migrants, former agriculturists who migrated from Raichur over 20-25 years ago.

Occupation & Income:

- 68% of the respondents were engaged in paid work, predominantly on daily wages.
- Common occupations - construction workers, drivers and domestic workers. Youth worked in the gig economy – with cab aggregators and delivery services.
- Family income was between Rs.10000-15000 (66%) and 68% had bank accounts.

Water & Sanitation:

- Depend on paid tankers for water, spending between Rs.100-1000 per week.

- No access to toilets or drainage infrastructure at all and engage in open defecation and open drainage (98%).
- BBMP does not collect waste from the community and segregation habit is absent.

Electricity & Fuel:

- 60% did not have access to electricity. 40% who did, only had access to a solar bulb.
- None of them had access to cooking gas. All of them use fire wood as fuel to cook.
- Cook outside homes, given the poor lighting and ventilation in the homes.

Education & Healthcare:

- 70% of the respondents have access to ASHA worker/ANM for health care. Nearest Government hospital is a 4-5 kms journey by auto or bus.
- 68% of the respondents having children < 18 years could access school education.Parinam Foundation and Sampark Foundation are helping with ECCE and school education support.

Disaster & Infrastructure:

- Severely impacted during heavy rains with flooding of homes (38%), destruction of property (24%) and health issues due to poor sanitation.
- When temperatures increased due to hot weather in Bangalore, they felt the increased heat during the day time (55%), experiencing fatigue and tiredness (29%).
- 86% faced loss of livelihood during Covid-19 pandemic and children didn't have access to digital education.

Support for Resilience:

- During COVID-19 pandemic most people went back to their native places or took support of NGOs. Support from Government was the least.
- The residents identified the key challenges to addressing their problems as – lack of land ownership and support from the landlord, absence of unity in the community and lack of support from local leaders.

Infrastructure and Resilience and Climate Change

Defining “Resilience” as the ability to withstand, adapt and survive the uncertain conditions of the climate changes, and recover quickly & positively, Climate Champion Akshatha observes, “Infrastructure has multiple layers to it when it comes to a community and they are all interconnected. One does not work well when the other is absent. Education, Livelihood, Health and wellness, Water and sanitation and Energy are multiple infrastructure elements that need to be understood and worked on collectively to build the social, economic, cultural and individual resilience to face the varying effects of climate change. By understanding the challenges, gaps, and anticipating the future issues, communities need to prioritize strengthening the younger generation mainly through infrastructure as they are the ones who will be facing the consequences of the climate changes across the globe. A strong resilience plan with all the parts of the community mentioned above needs to be developed which can mitigate the risks and help the community in recovering easily with minimum damages.”

Reflecting on the situation in Tubrahalli, she also reasons that “The slower impacts of the lack of proper infrastructure, as seen in Tubrahalli, is likely to be reduced working hours, poor health and hygiene, recurring maintenance and replacements of assets, poor overall well being – all of which doesn’t let the community be prepared for the uncertain scenarios of the climate changes and stress.”

Extending the idea of development beyond just infrastructural resilience, she includes self-reliance and self-sustenance of the community as a key factor. She believes, the Tubrahalli community, being nomadic, may be prepared for climate change and its impacts. With support of various stakeholders, they can benefit from nature-based, traditional as well as new technology-based solutions, which can build resilience.

Theme: Water Management (WM)

Location: DJ Halli

Study Site: Under the theme Water Resources and Management, the present survey was conducted in DJ Halli. Devarajeevanahalli (DJ Halli) is one of the biggest government notified slums in the city, extending over 1.15 km with 420 huts and a 'registered' population of 2463[4]. However, on the ground, there are over 10,000 huts in the slum, home to about 35,000 inhabitants, with significant Hindu and Muslim population, and characterized by poor infrastructure, overpopulation, and resource poor slum dwellings.

Focus Issue: The major aim of the present study was to understand the distribution of water resources within the community and assess the quality of water. The survey and FGDs in the DJ Halli locality were led by Youth Climate Champion, Ms. Devika (Profile in annexure1)

[4] https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-019-6756-7#ref-CR9

Respondents: For this study, a total of 134 respondents of the slum were surveyed and 4 FGDs were conducted covering 3 groups of women (>30 years) and 1 group of youth (boys and girls, 15-29 years) in Doddannanagar, DJ Halli.

Of the 134 persons from DJ Halli surveyed, 52.2 percent were male and 47.8 percent were female. In line with the objective of the study to understand youth experiences, almost three fourths of the respondents were youth (men and women) in the 18-29 years age group, while a quarter were in the 30-39 years group.

SEX	%	AGE	%
Female	47.8	18-29	74.6
Male	52.2	30+ years	25.4
CASTE	%	EDUCATION	%
SC	17.9	No formal Education	7.5
ST	20.9	Up to Secondary (1^{st}-8^{th})	17.2
OBC	8.2	High School and above (9^{th}-12^{th})	64.2
General	3.7	Dip./ Cert./ Graduation/ PG	11.2
Others	49.3		

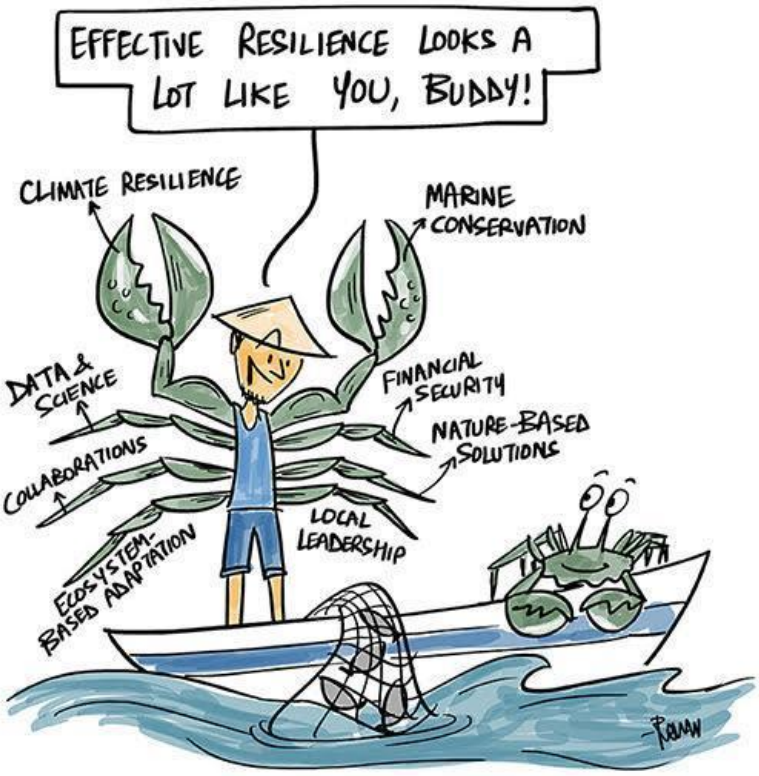
Key Findings:

- Being a government notified slum, water supply was direct to home (96%), either daily or on alternate days, primarily through pipes (86%).
- Most had access to free drinking water (84%), water quality being good (73%) or satisfactory (25%).
- Water consumption varied, ranging from 10 litres to 40 litres per day/per household
- FGDs however revealed uneven distribution of water access, irregular and erratic water supply in different parts of the slum.
- While water was muddy water during monsoon season, respondents boiled or filtered the water, or purchased cans.
- Water borne diseases were common and reported by 87% surveyed, but not in FGDs.

- While 90% surveyed mentioned disputes around shortage of water, FGDs presented a picture of unity and sharing.
- Respondents were satisfied with BBMP performance and approached BBMP to resolve water related issues (47%), while FGD participants found their own solutions.
- Overall, water situation seems to have improved from the past.

Water and Climate Change

As Champion Devika observes, "Water and climate change are closely related. Climate change causes unpredictable water availability, leading to more severe droughts and floods all over the world. Climate change impacts have direct consequences for water security and conflict. On the other hand, the contamination of water bodies, deterioration of marine life, and overutilization of water uses ultimately leads to contributing to polluting the oceans and thereby contributing to climate change." Further, the impact of depletion and contamination of water resources are first and most strongly felt by impoverished and marginalised communities who have few alternatives and support systems in times of water crises. However, as this study shows, urban governance that takes into account the vulnerable populations' needs and public provisioning of essential services can largely address the community's needs in the short run. However, global climate uncertainties and changing local weather patterns, rising urbanisation with increasing density of population and consequent pressure on depleting natural resources, along with disparities and discrimination within the population, needs a long-term policy approach based on a larger systems thinking perspective.


EFFECTIVE RESILIENCE LOOKS A LOT LIKE YOU, BUDDY!
CLIMATE RESILIENCE
MARINE CONSERVATION
DATA & SCIENCE
FINANCIAL SECURITY
NATURE-BASED SOLUTIONS
COLLABORATIONS
LOCAL LEADERSHIP
ECOSYSTEM-BASED ADAPTATION

Study Site: The study was conducted in Adigara KallaHalli, a village located in Anekal taluk of Bangalore district. Spread over 2.8 sq.kms., under the village panchayat, it has a total population of 2915 with about 500 households (2011 census), predominantly Muslim. Their main language is Kannada but Urdu and Hindi are also spoken widely. The area has lot of barren lands which were earlier used for cultivation, which were given up due to unavailability of water and poor economic benefits. However, rapid industrialisation and rising real estate has taken over the land. With all these developments, the ground water has got further depleted and polluted; currently they depend on water supply from nearby tanks.

Focus Issue: The survey on youth and livelihoods was led by Abhishek and Bhavan, Youth Climate Champions (Profile in annexure 1) in Adigara Kallahalli. This theme was chosen based on the conversations had with

Youth leaders, where unemployment and education came up as one of the major challenges faced by youth in the area.

Respondents: For this study, a total of 145 persons were surveyed in Adigara Kallahalli. Both men and women, predominantly youth, were interviewed with a semi structured questionnaire.

Of the total sample, 64.1 percent were male and 35.9 percent were female. In line with the objective of the study to understand youth experiences, more than 60 percent were youth, while a quarter were in the 30-39 years group, and the remaining were above 40 years.

SEX	%	AGE	%
Female	35.9	18-29	62.1
Male	64.1	30+ years	37.9
CASTE	%	EDUCATION	%
SC	11.0	No formal Education	7.6
ST	7.6	Up to Secondary (1^{st}-8^{th})	33.1
OBC	55.2	High School and above (9^{th}-12^{th})	29.7
General	16.6	Dip./ Cert./ Graduation/ PG	29.7
Others	9.7		

Key Findings

- Majority (60%) of the survey sample were youth aged 18-29 years.
- High literacy rate in the community with almost 60% completed high school and above.
- Change in the primary occupation of families reported by 66%. Originally agricultural families, forced to change occupation due to droughts and crop failure, followed by rapid urbanization and real estate takeover.
- 22.8 percent attributed these livelihood changes to “climate change”.

- Agriculture is still the major occupation for 38.6 percent of the respondents' families with 50% of them owning land. 78.7 % of those employed were satisfied with their occupation.
- Youth highlighted their main concern as getting a decent job to sustain their life. Majority of the youth go to nearby cities for daily wage jobs as mechanics, construction workers etc.
- Of the youth interested in pursuing further education, 70% wanted job-oriented skill-based education.
- In terms of aspirations, 31% would like to start their own business. Only 10 percent interested in agriculture.
- 32% were aware of government skill development trainings and 87% of those have availed them.
- 42% are looking to migrate to other cities for jobs. Reasons: availability of better opportunities, better remuneration and work environment, lack of good opportunities in the present location.

Livelihood & Climate Change

Shift in livelihood from farming to other occupations over years and its connection with the changing surroundings like landscape changes, depletion of ground water, introduction of industries, shift in farming to cash crops like flowers are some things that could be linked to rapid urbanisation, contributing further to climate change in the long run. This is also related to the number of people, particularly youth, migrating to cities in search of better employment.

The community is not very aware or capable of exploring the diverse opportunities rather they settle for whatever they are getting from daily wage work. Education, poverty and informal employment are key issues which they consider the most significant. Youth wish to acquire skills so that they are capable of finding decent jobs and to be independent. The communities are still grappling to adapt to the change that has occurred here over the years.

Prior to the survey, Climate Champion Abhishek visited the area and understood the nuances. He initially felt that it was necessary to work with the youth, understand their issues and plan for future interventions. Awareness of government schemes related to skill development, would help in employment generation. Having more well-informed people in the community would help in holding the government accountable as

well. Apart from these, he opined that creating awareness campaigns and educating students on biodiversity loss, climate change, and opportunities for dignified labor and skill development would eventually contribute towards holistic development of the community. He believed that Youth are certainly the most powerful group of people who can bring notable changes to any community. Mitigating climate change should always start from adapting and building resilience to the existing impacts, he believes, creating greater space for understanding the necessity of addressing climate change for long-term sustenance on earth (Abhishek, 2022).

Theme: Solid Waste Management (SWM)

Locations: Adigara Kallahalli, Ambedkar Nagar and

Ramurthy Nagar-Akshaya Nagar

Study Sites:

Adigara Kallahalli: *Adigara Kallahalli* is a locality in South Bangalore, Bangalore Urban District. It is located in Anekal taluk of Bangalore district. There are around 500 households and 3000 people in Adigara Kallahalli as per Census 2011. Indiscriminate dumping of garbage and water scarcity are common here. Due to change of land use pattern, farming is reduced and youth are moving towards the city for job opportunities and work as drivers, factory workers or daily wage workers.

Ambedkar Nagar: *Ambedkar Nagar* is a sub-locality in Whitefield, Bangalore East, Bangalore Urban District. Over 600+ people reside in the slum and the area's major problems are around garbage disposal and education. The challenges that there is no proper infrastructure in place for waste dumping and improper waste segregation, no infrastructure for restroom facilities, with children being infected by the spread of the monkey pox virus. The local authorities don't provide waste-pick up services due to which there is excessive dumping right next to the settlements.

Ramurthy Nagar-Akshaya Nagar: Ramurthy Nagar-Akshaya Nagar is located in the north-eastern part of Bangalore. Akshaya Nagar is a subpart of Ramamurthy Nagar, which is not an officially recognized slum area by the Karnataka Slum Development Board. The area has people from different geographies who are mostly involved in the waste picker and construction labour work. The community is located on a land that is under litigation/dispute. As the settlement is not a "declared slum" by the Slum Board, government support and services are bare minimum to almost non-existent in the locality.

Focus Issue: The study was on Solid Waste Management in the above three locations with the Youth Climate Champions/researchers focusing on different locations. The main objective of the study was to understand garbage generation, types of solid waste, and disposal, issues of solid waste management and solution for proper solid waste management.

Respondents: A detailed survey through a semi-structured questionnaire was done covering the total sample in the 3 locations and two FGDs were conducted to get the insights on solid waste management in Ambedkar Nagar. The details of the study sample (359) and the names of the Youth Climate champions is shown in the table below.

Name of the Location	Study Sample	Name of the Youth Climate Champion/ Researcher/s
Adigara Kallahalli (AKH)	151	Akash & Mayur
Ambedkar Nagar (AN)	56 + 2 FGDs	Satyam Thakur
Ramurthy Nagar-Akshaya Nagar (RN-AN)	152	Parvathy

The profiles of the Youth Champions are given in Annexure 1

The sex-wise breakup of the respondents from these 3 slums shows that overall, men constituted 52.1 percent and women formed 47.9 percent of the total sample. The predominant age group was 30+ years in all the 3 slums. The composition of the three locations is shown in the table below:

Sex	AKH	AN	RN-AN	Total
	%	%	%	%

Age group	AKH	AN	RN-AN	Total
	%	%	%	%

Male	66.9	41.1	34.9	52.1
Female	33.1	58.9	65.1	47.9

18-29 years	27.8	14.3	23.7	24.0
30+ years	72.2	85.7	76.3	76.0

Caste group	AKH	AN	RN-AN	Total
	%	%	%	%
SC	3.3	50.0	25.7	20.0
ST	3.3	7.1	15.8	9.2
OBC	37.1	32.1	30.9	33.7
General	60.0	10.7	0.7	4.4
Others	50.3	-	27.0	32.7

Education	AKH	AN	RN-AN	Total
	%	%	%	%
No formal education	11.9	10.7	59.2	31.8
Up to Secondary (1st to 8th class)	41.0	35.7	33.6	37.1
Up to High School (9th to 12th class)	35.1	21.4	5.9	20.6
Certificate/diploma/ Degree/PG	12.0	32.2	1.4	10.5

Key Findings:

- Predominant age group (30-39 years) -48% and respondents without formal education-31.8%
- Majority of them long-term residents (43.4%) living in the areas for the past 11-20 years
- Across locations, kitchen waste (which can be composted) was the major type of household waste (50%). Ambedkar Nagar had a high percentage of e-waste/sanitary waste (26.8%).
- Garbage collection at household level and use of BBMP truck service was regular in AKH. In RN-AN, most garbage was discarded in the surroundings or burnt, whereas use of public dustbins with only occasional collection by BBMP was seen in Ambedkar Nagar.
- As per FGD, the BBMP truck does not enter the small gullies to collect garbage in Ambedkar Nagar and hence it is dumped in an empty plot overflowing into the lake.

- Communities face health issues due to improper waste disposal – insect bites, respiratory and digestive infections, suffocation due to toxic fumes from burning of garbage, vector-borne diseases, skin and eye infections were common.
- There is good awareness on waste segregation and its importance (63%), especially seen as beneficial for the waste pickers and collectors.
- 65% want to learn more about waste segregation and 49% of the respondents would like to practice it, but complained that dustbins were not provided.

Solid Waste Management and Climate Change

Groundwater depletion was visible in Adigara Kallahalli, with deeper levels of water availability. The ground water was polluted due to the release of pollutants by nearby factories. The sludge from the drains and waste in the lake were also causing groundwater pollution. The groundwater from wells/bore wells was not suitable for drinking. Many of the communities were not able to access clean water. Drinking water was purchased by several households. The tap water would come slowly and water was not sufficient for all households. Land use patterns changed with conversion of farm lands into concrete jungles. Massive construction in the area was another reason for the scarcity of water. Livelihoods disrupted due to climate change in the area.

In Ambedkar Nagar, there was no segregation on waste and the residents usually threw the garbage outside the window or on roads, so there were these randomly picked spots around the locality which had a garbage pile up. Because decomposable waste like vegetables/fruits waste was being thrown into the lake, the lake produced a gas called methane and other polluting gasses which were harmful to the environment. This led to climate change.

Ramurthy Nagar-Akshaya Nagar situation was very grim. There was continuous water logging due to settlement being in a low-lying land without any proper drains for the rain water to flow through. The slum dwellers also comprised of waste-picker community and they live off the waste dumped in the sites next to their settlement. They would segregate out only the waste they deem as “useful” and the remaining majority of the waste was left discarded. This lack of a proper system in place, lack of awareness, along with

the habitual waste dumping appeared to be a serious issue. Burning large piles of toxic waste added on to the existing air pollution in the city as well and would pose threat to the health of people living nearby these waste burning sites. Health issues due to unhygienic/improper waste disposal and exposure to toxic waste was a major threat to the people and animals living in the vicinity and to the environment.

The Youth researchers/champions have reflected that the above challenges could be a good opportunity to teach the residents of the community, especially youth, the basics of solid waste management. More connected issues related to toxic waste dumping can be identified as the interactions with the community progresses. NGO collaborations will be an advantage to educate the communities on climate change.

7. Perspectives on Climate Change

Climate change is one of the most pressing issues affecting young people. Young people's vision of a just and sustainable world is threatened by the ongoing climate change and related systemic problems such as inequitable access to resources due to power imbalances and structural marginalisation. Young people are likely to be impacted most by this uncertain future, including adverse effects on their physical and mental health. At the same time, even as they make up over half the world's population, they are systematically excluded from conversations around climate change.

The major aim of the present research was to understand the perspectives of the communities on what is climate change, its impact /effects, what should be done to mitigate the changes and what support is expected. This study was taken up across all 5 slums/low-income settlements using a semi-structured survey tool developed by the Youth Champions themselves. Along with the survey, 9 FGDs were conducted to capture the insights of community youth, student youth specifically on climate change awareness and solutions. The details of the study sample and the names of the Youth Climate Champions and Researchers is shown in the table below.

S.No	Name of the Location	Survey Sample	No.of FGDs	Name of the Youth Climate Champion/Researcher
1	Adigara Kallahalli	296	-	Mayur & Akash, Bhavan & Abhishek
2	Ambedkar Nagar	56	2	Satyam Thakur
3	DJ Halli	134	4	Devika
4	Ramurthy Nagar - Akshaya Nagar	152	-	Parvathi
5	Tubrahalli	50	7	Akshata

6	Educational institutions in different locations of Bangalore plus Sarjapur youth	-	9	Drishti & Annapurna
Total	5 locations + FGD locations	688	22 FGDs	10 Youth Climate Champions & Researchers

Demographic Study

For the present study, 688 persons were surveyed in 5 locations as stated in the table. Both men and women of different age groups formed the study sample.

The study sample in different locations is presented in the table.

S.No	Location	Frequency	Percent
1.	Adigara Kallahalli	296	43.0
2.	Ambedkar Nagar	56	8.1
3.	DJ Halli	134	19.5
4.	Ramurthy Nagar-Akshaya Nagar	152	22.1
5.	Tubrahalli	50	7.3
	Total	688	100.0

Of the total sample respondents, 44.8 percent were women and 55.2 percent were men. Over representation of men was seen in the quantitative study. Though the participation of women was lower compared to men in the survey, it was ensured to include more women through the qualitative method mainly FGDs. Women-only FGDs were conducted in some of the locations to make sure that gender

perspectives on climate change was included. The FGDs also included non-binary and 'gender fluid'-identifying participants.

The total population was categorized age-wise into youth (18-29 years) and older adults (30 + years) represented by 43 percent and 57 percent respectively. Though the main objective of the study was to capture the views and experiences of young people on climate change and its impact, their participation in the survey was lower. However, youth perspectives were taken into consideration through 9 youth specific FGDs on Climate Change conducted in the communities, educational institutions and other locations. But the participation of older adults also has significance in terms of their observations of climate change and the impact on the communities.

Caste/community wise classification reveal that the sample represents OBC (33.2 percent), 30.8 percent 'Others'[5], SC and ST population with 17.6 and 11.3 respectively. Efforts were made to include the vulnerable/marginalized communities by choosing the right locations. This contributes to the objective of the study to listen to the voices of the backward and other vulnerable communities.

The age, gender and caste composition are presented in the table below.

SEX	%	AGE	%
Female	44.8	18-29	43.0
Male	55.2	30+ years	57.0
CASTE*	%	EDUCATION	%
SC	17.6	No formal Education	22.8
ST	11.3	Up to Secondary (1^{st}-8^{th})	32.6
OBC	33.2	High School and above (9^{th}-12^{th})	30.5

[5]The "Others" is an umbrella term that includes :
1. Castes which were not part of the official list of caste divisions, provided by the government.
2. Community people who did not identify with any of the other options. This may include those who identified as 'Muslim'
3. People who did not know which caste category they belonged to.

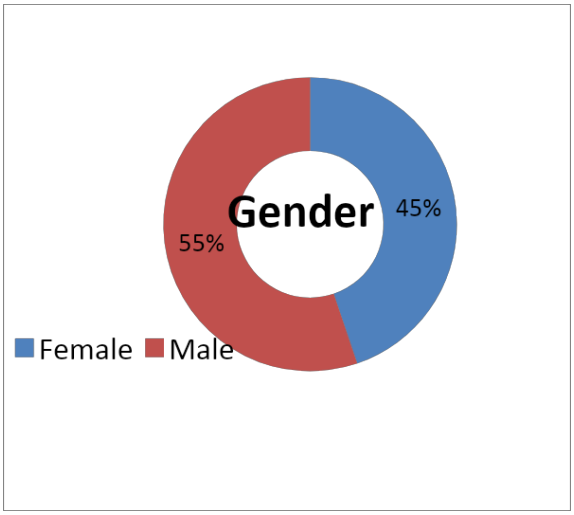
General	7.1	Dip./ Cert./ Graduation/ PG	14.1
Others	30.8		

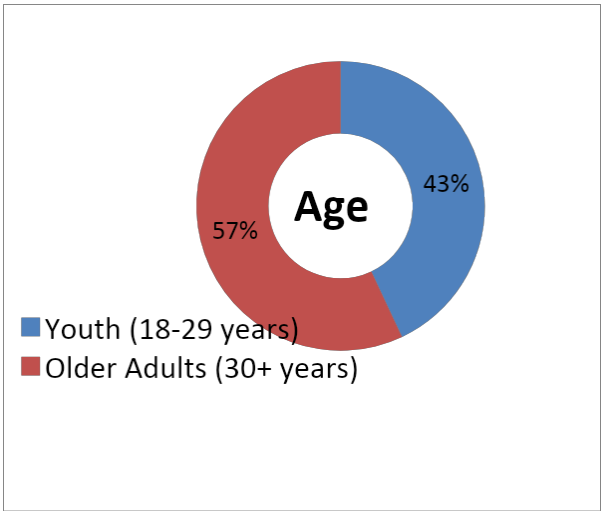
*Caste N =638 as caste data was not available for Tubrahalli

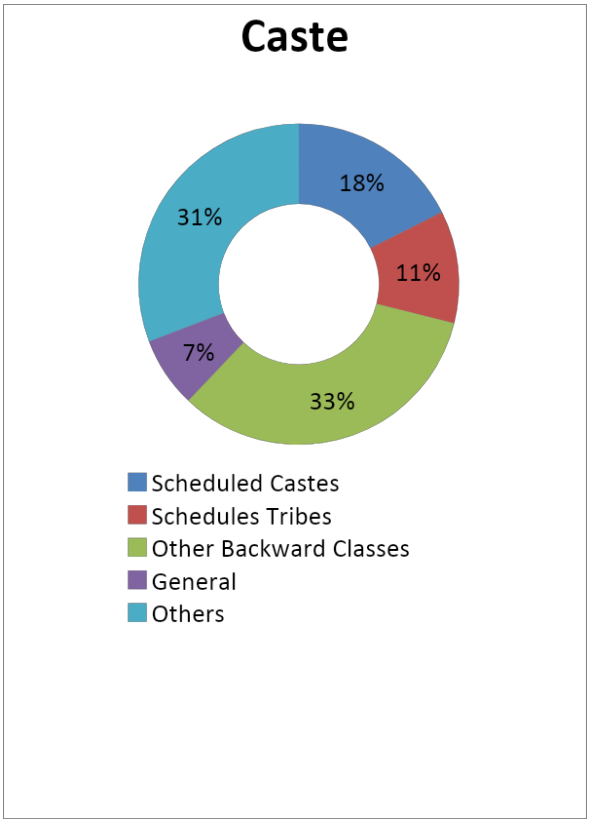
The educational level of the sample showed that 32.6 percent studied/completed up to secondary level and 30.5 percent completed high school education. High proportion (22.8 percent) of the total sample did not have formal education. Access to education being one of the development indicators, the sample covered the population that had limited education opportunities. Those who completed their diploma, graduation and post-graduation together represented 14.1 percent of the total sample respondents. Having lower percentage of high school and above could also be because of the participation of students who were yet to complete their education. The FGDs had a good representation of school and university students as well as few community-based and working youth.

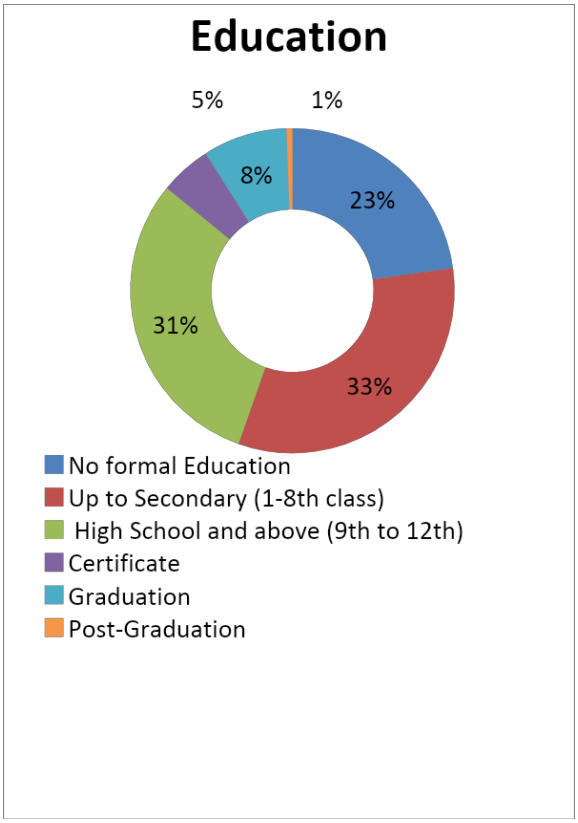
RESTLESS DEVELOPMENT

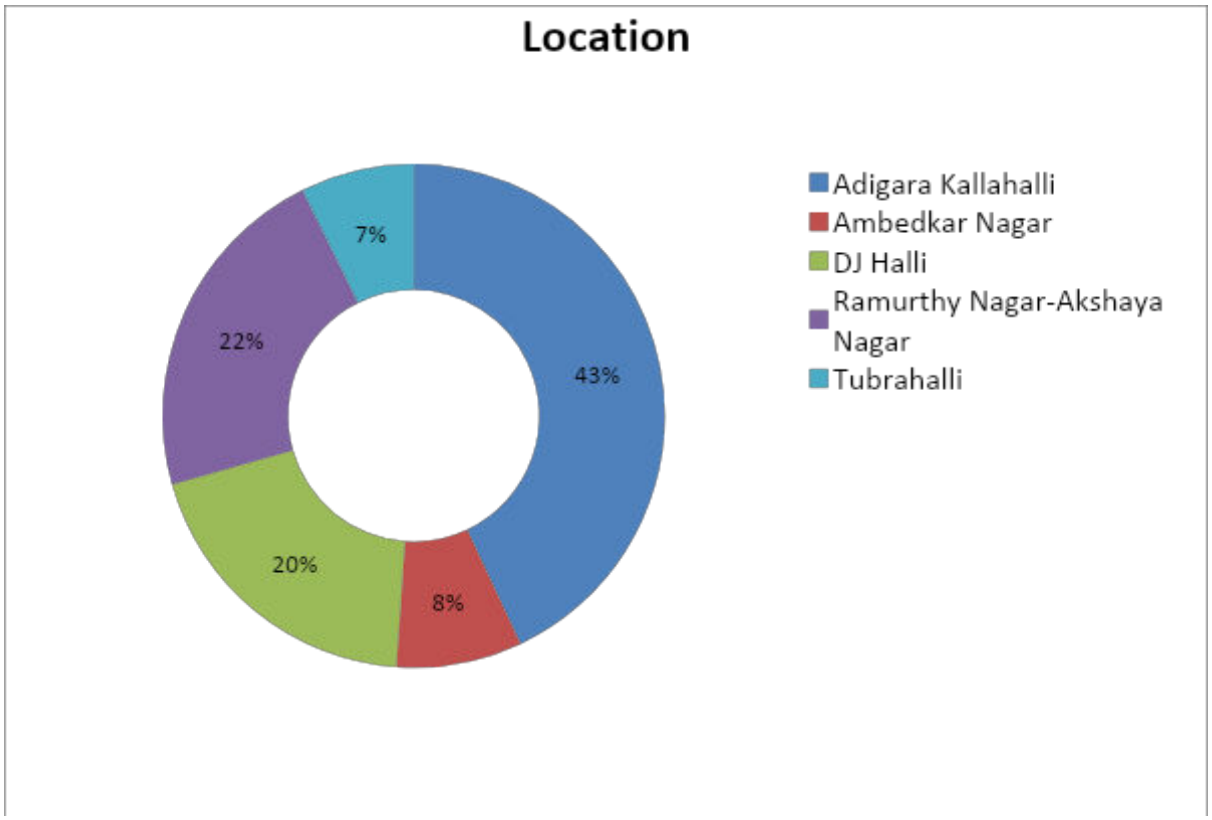
Respondents' profile at a Glance...











CC 1: Understanding of Climate Change

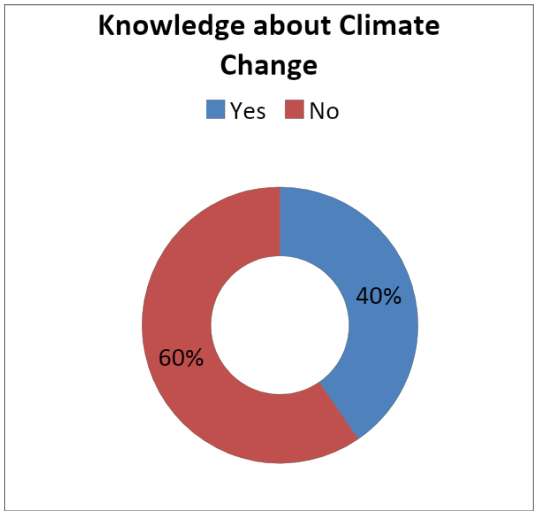
Key Findings:

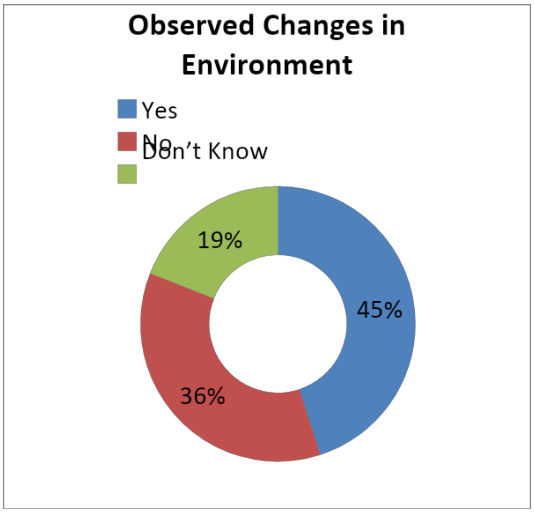
- 40% of the total respondents knew about Climate Change while 45% had personally observed perceptible changes in their environment.
- 1 in every 2 youth was aware about climate change as against 1 in 3 older adults. College youth (not residents of the communities) had a good academic knowledge of the issue.
- Men were generally more informed through mainstream sources, and there was a positive correlation between education level and knowledge on the issue.

- However, the qualitative data shows that the native wisdom and innate understanding of issues by women and the 'uneducated' was quite accurate and comprehensive despite lower self-reporting in the survey.
- Every other person surveyed (50%) in Tubrahalli, Akshaya Nagar and Adigarekarahalli reported observing changes in the environment.

This section of the report elicited information about the respondents' knowledge and experience of climate change in the communities.

Knowledge about climate change





The respondents were asked whether they know anything about climate change. Of the total sample, around 40 percent of all respondents knew about climate change, which included a larger proportion of men (57.2 percent). Among all the women surveyed, about 39% had heard of the term, which is close to the overall total percentage for all respondents. While some women who had heard of the term attributed it to their schooling, others showed a remarkable understanding of the issues despite being 'uneducated'.

"We are not educated. But if there is no proper rainfall, wind, and sun then it is climate change. As people of the soil, that is all we know." (Woman in FGD, Tubrahalli, FIR5).

"No, I don't know much about climate change. But I can say, losing the water system for agriculture is the impact of climate change which made us come here." (Woman, 45 years, who is interested in uplifting the community - when asked about whether they know climate change in depth - FGD, Tubrahalli)

Even though their representation was lower compared to older adults, it is significant that the youth (18-29 years age group) were aware of changes in climate (57.6 percent). Half of all young people surveyed were aware of climate change, as against one-third of older adults who knew about it. The data also confirmed the expected trend that with higher education, awareness of climate change increased. The youth, predominantly university students, listed the following as aspects of climate change (FCC1-4):

▪ changes in weather patterns, greenhouse gases are increasing, heat levels are rising, pollution is increasing ▪ adverse change in climate ▪ long term changes like how it rained in the city (bangalore) the other day when it	▪ Climate change is when there is no proper summer and winter going on. There is too much pollution and so many changes are happening to our environment. ▪ technically speaking climate change is like the shift in	▪ the temperature of the current atmosphere is rising. ▪ Weird weather of Bangalore. It's unpredictable. ▪ it is not a small change, it is something like extreme levels of change	▪ Weather change- change in conditions. It is an environment issue. ▪ Humans have changed the environment so much that it has come to get us. Whatever we have done in the past few centuries has come back for us- like

would not have happened 5 years ago. ▪ Rising global temperature, resulting in harsher climates. ▪ not just affecting the temperature or something. It is also affecting the soil, it is also affecting the air	temperature as well as weather patterns ▪ I seem to associate it with the ice melting at the poles and the water levels rising, penguins dying and stuff.	▪ long term change in temperature and weather patterns. ▪ climate change means change that is happening to the natural climate of the earth and can create trouble for the whole ecosystem	in the last century due to industrialization and all the expenditure, usage, CO2 emissions and resources we have used, everything— now everyone is dying. ▪ increased levels of carbon dioxide

"We are not educated. But if there is no proper rainfall, wind, and sun then it is climate change. As people of the soil, that is all we know."

--- Woman in FGD, Tubrahalli (FIR5)

Respondents were further asked to rate their knowledge about climate change on a scale of 1 to 10 points (0 to 3 -limited knowledge; 4-6 moderate knowledge; 7-10 -good knowledge). The proportion of men and youth self-reporting 'very significant' and 'moderately significant' knowledge on the issue was higher compared with their counterparts who confessed to not knowing about the issue. This observation may be seen to strengthen the argument of men being better informed about their surroundings, including knowledge on climate change, probably due to their greater exposure to the external environment, whereas women were homebound or more preoccupied with domestic matters. There was a positive correlation between level of education and knowledge of the issue. However, the qualitative data presents a different picture of knowledge and practical understanding acquired from different sources by uneducated women, even if they do not self-report as being 'knowledgeable'.

Many sources to gain knowledge on climate change were listed[6]. Analyzing the sources of knowledge against gender, age groups, and levels of education shows some interesting patterns. Education played a major role in expanding access to knowledge on climate change. The respondents who completed graduation and 12th class have accessed knowledge from more formal sources.

Men from the communities gained knowledge from mainstream media and internet, as well as institutional and government sources. Women lagged behind in accessing media and other sources. However, their knowledge acquisition was mainly through friends and family, and the FGDs showed that their innate understanding of issues was far more accurate and comprehensive than knowledge acquired through books, education or mainstream media.

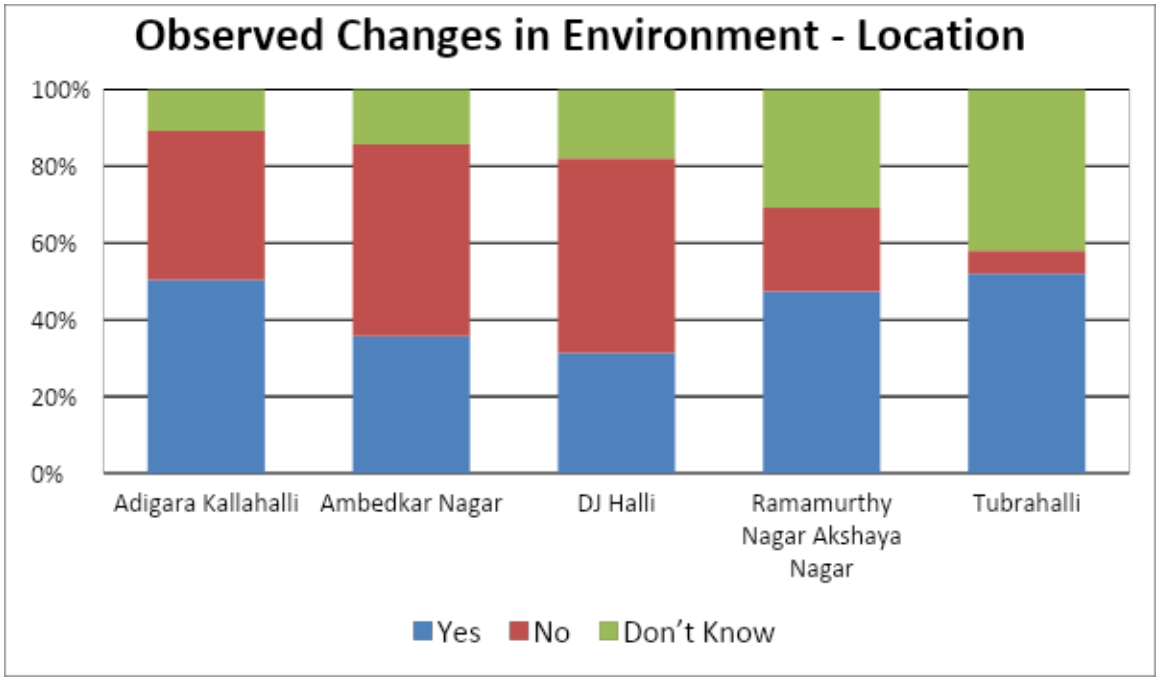
As expected, young people's access to knowledge on climate change from almost all sources was commendable. Youth in FGDs reported gaining knowledge from their school and University, weather reports, and youth groups like Fridays for Future; some also reported hearing the word for the first time from the Climate Champions. Gaining knowledge from different sources and interacting with different people with

[6]1. Main stream media/Print and Electronic: Radio, TV, News Papers
2. Social media- Internet
3. Educational and Expert groups- School/ college/ university; Specialist publications/academic journals; Public libraries; Environmental groups (e.g. Worldwide Fund for Nature)
4. Governmental agencies- Government agencies/ information, Local municipal council, Energy suppliers
5. Friends, family and others

varied ground experiences would help the youth champions to develop multi-pronged strategies for climate action involving a range of stakeholders.

Changes in environment observed:

Not only did more men have knowledge about climate change, more men (58.6 percent) also observed changes in the environment. These changes were observed more by older adults (52.3), probably due to their longer stay in the locations and their greater exposure to the outside world, compared to young adults (47.2 percent). Overall, 45 percent of the total sample population observed changes in the environment.

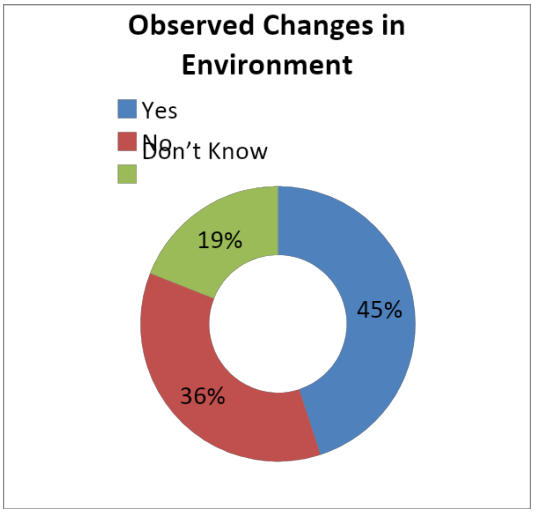


It is noteworthy that Tubrahalli, Adigara Kalahalli and Ramamurthy-Akshaya Nagar had almost 50% of the respondents sample observing changes in the environment. In other words, every other person surveyed in these localities reported perceptible changes in the environment. It is clear from this data that climate change for these communities on the margins was not some far off intellectual debate, but an everyday lived reality.

CC 2: Experience of Climate Change

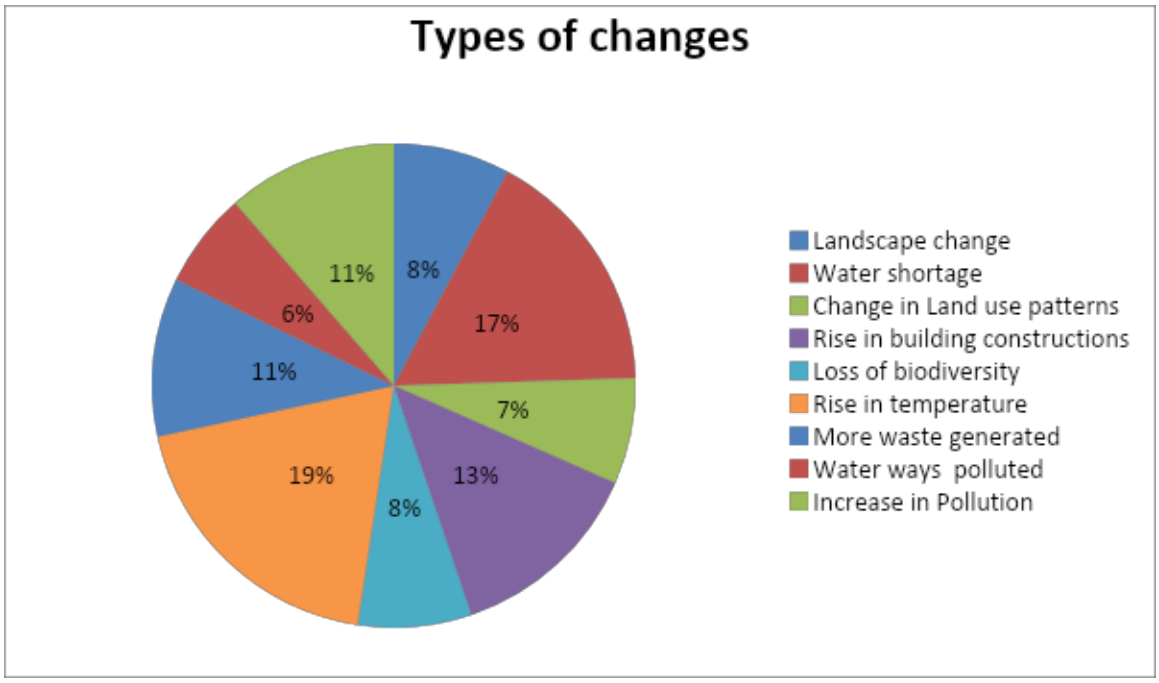
Key Findings:

- 45% of the respondents had personally observed changes in their environment.
- Rise in temperature was the most common change observed, followed by water shortage, across the 5 locations as a whole.
- Location-specific changes observed include water shortage in Tubrahalli and rise in temperature and landscape changes in Ambedkar Nagar.
- Over 53% of the respondents rated Climate Change as affecting their personal health and safety either moderately or seriously. More than a quarter of all youth (27.4%) rated the issue as "very significant".

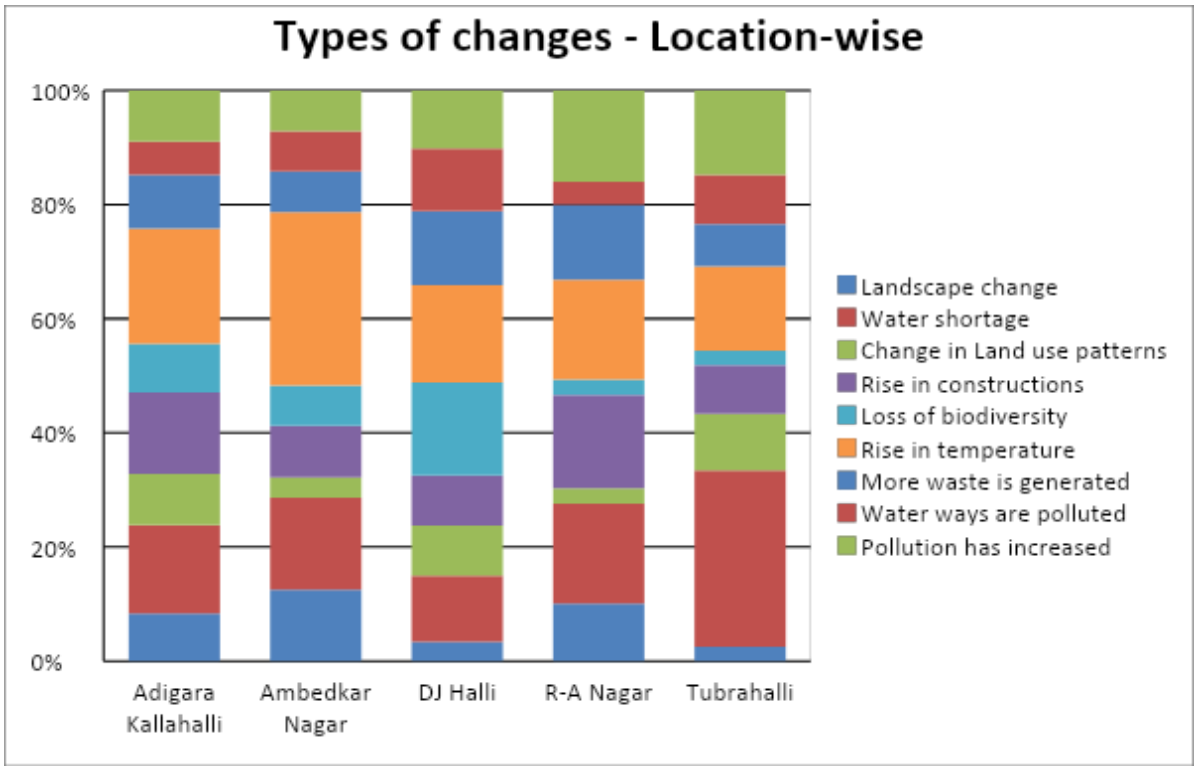


Landscape change, water shortage, rise in construction, increased temperatures, wastage generation and increased pollution have been identified as the changes in the environment linked to climate change by majority of the respondents. Both genders, age groups were almost on the same page about the changes they had noticed, though they were not identified as causes or effects. These changes were experienced by the communities across all locations and had a clear impact on their lives and livelihoods. Overall, rise in

temperature was the most common change observed, followed by water shortage, across the 5 locations as a whole.



Youth in the FGDs further drew a link with health issues and the spread of Covid-19. *"Children's health has been more affected by the changes such as rain and flooding. There is less sun, so more children are falling sick more often than before."* (Youth, FGD, DJ Halli). They also spoke of untimely rains, observing how it is sunny in morning and starts raining at night. As young people, they said this is the first time in Bangalore that they are noticing such changes in weather conditions.

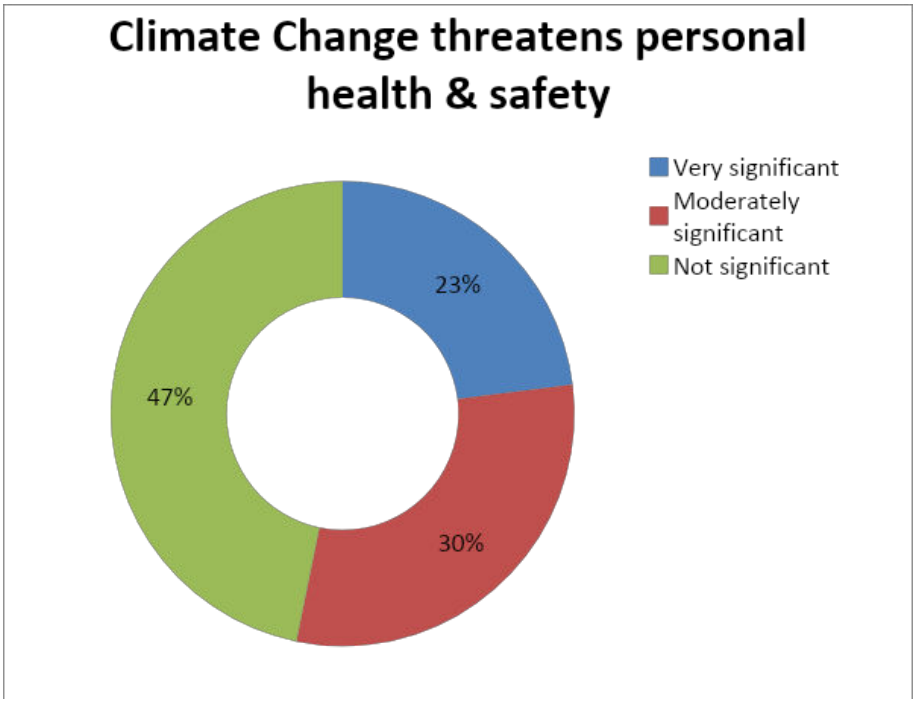


The data on location-wise changes observed provides a clear indicator to the priority of issues faced by each community. While all 5 locations faced water shortage and rise in temperature as major issues, Tubrahalli stands out in terms of acute shortage of water being the major issue. This is further corroborated by the thematic survey (see section on Infrastructure & Resilience) and FGDs conducted in Tubrahalli, where water availability was cited as a major concern, along with extreme heat and lack of ventilation in their predominantly kuchcha houses. Similarly, Ambedkar Nagar has reported a rise in temperature as a major issue, as also change in landscape. The correlation and reasons for this may be further explored, comparing city master plans over the years and corroborating with municipal level data.

Conversion of farm lands into commercial lands in urban geographies, land acquisition for development projects and exorbitant cost of land are pushing the poor and marginalized into crowded areas with lack of infrastructural facilities. This kind of push and pull forces have resulted in lack of work, food insecurity, health issues, inaccessibility of schemes and services. A vicious cycle of climatic adversities with increased water shortage, higher temperatures, pollution, directly and disproportionately impact the poor and vulnerable sections of the population.

> *"We migrated to Bengaluru due to scarcity of water in our native Raichur, which made agriculture unviable. This happened 20-25 years back. But I can say Bengaluru today is on the same path and not far from a similar kind of situation."*
>
> ***Woman FGD Participant, Tubrahalli (FIR 5)***

Climate Change is an issue of major Concern:



In absolute numbers, more men identified climate change as an issue of major concern, also affecting their personal health and safety. Almost half the women surveyed, rated it as either 'moderately significant' or 'very significant' to their lives. One woman FGD participant (DJ Halli) noted, *"Our children should be fed and our stomachs should get food, that's what is important to us. Not these issues (Climate Change)."* However, this needs to be seen in the light that though most women did not report much awareness about climate change, to begin with, they did experience the impact in their lives. Another FGD participant from the same

community DJ Halli noted, *"Climate change impacts us a lot. The heavy rains impact our daily life a lot. It becomes very difficult especially for kids to go to school."* Education also had a bearing on the thinking, and respondents with better levels of education scored it 'very significant' and were better able to relate issues affecting their lives to climate change.

Despite complaints in the FGDs with adult men and women that young people were "busy, self-absorbed, don't care and do not take interest in the community issues", the survey shows that young adults of 18-29 years age group were clearly more concerned about climate changes, not just as an issue of general concern, but also as endangering their personal health and safety moderately and very significantly (63%). In fact, more than a quarter of all youth (27.4%) rated the issue as "very significant". This is probably because they realist that it impacts them not just now, but in the future too.

This was evident from the qualitative data collected from FGDs with youth. Even younger children (13-18 years) talked about mosquitoes and ill-health due to lack of sunshine and unseasonal rain, increasing risk of accidents due to flooded and potholed roads, prices of vegetables going up, rain holidays disturbing their school education.

> *"Houses built in the community do not have any concrete moulding, as a result of which excess rain leads to leakages. There is flooding within houses and overflow of drainage as well. There is further problem when drain water mixes with drinking water."*
>
> - Youth, FGD, DJ Halli

Overall, the major concerns arising from climate change were mainly non-availability of work, crowded spaces, pollution of air, water shortage and unhygienic living conditions for the communities and more so for the marginalized communities. Food insecurity due to crop failures, excess monsoon or drought situations adversely affect the communities and also lead to distress migration.

In addition to the above, it is observed that climate change impacts the personal health and safety of individuals in several ways. This includes increased vulnerability to illnesses as well as disasters leading to disease and death from extreme climate variation, such as heat waves, storms and floods, disruption of food systems that produce water- and vector-borne diseases leading to physical illness, and mental health issues.

"Our native lands have turned barren because of the less rainfall. We don't have rain or water in dams, and the soil is dried due to the heat. Our houses in native and the ones we are staying in here cannot withstand the heat or rain."

- Young woman, 27 years, who is married and moved to Bengaluru in search of livelihood, commenting on impacts of climate change she observed (FGD, Tubrahalli)

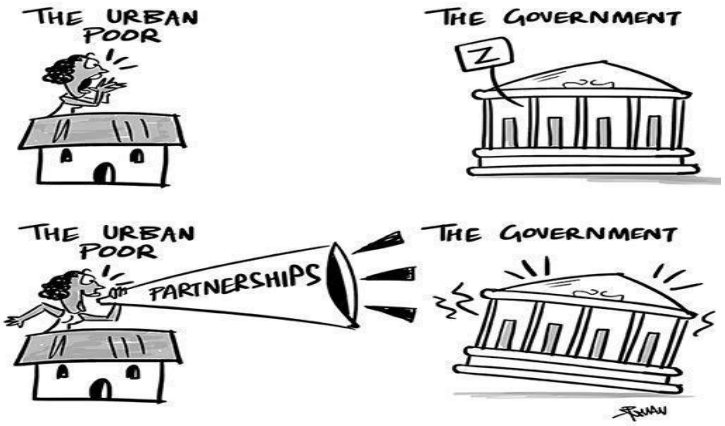
"There has been frequent occurrence of sudden rains. This causes difficulty with work especially delivery, making it more risky."

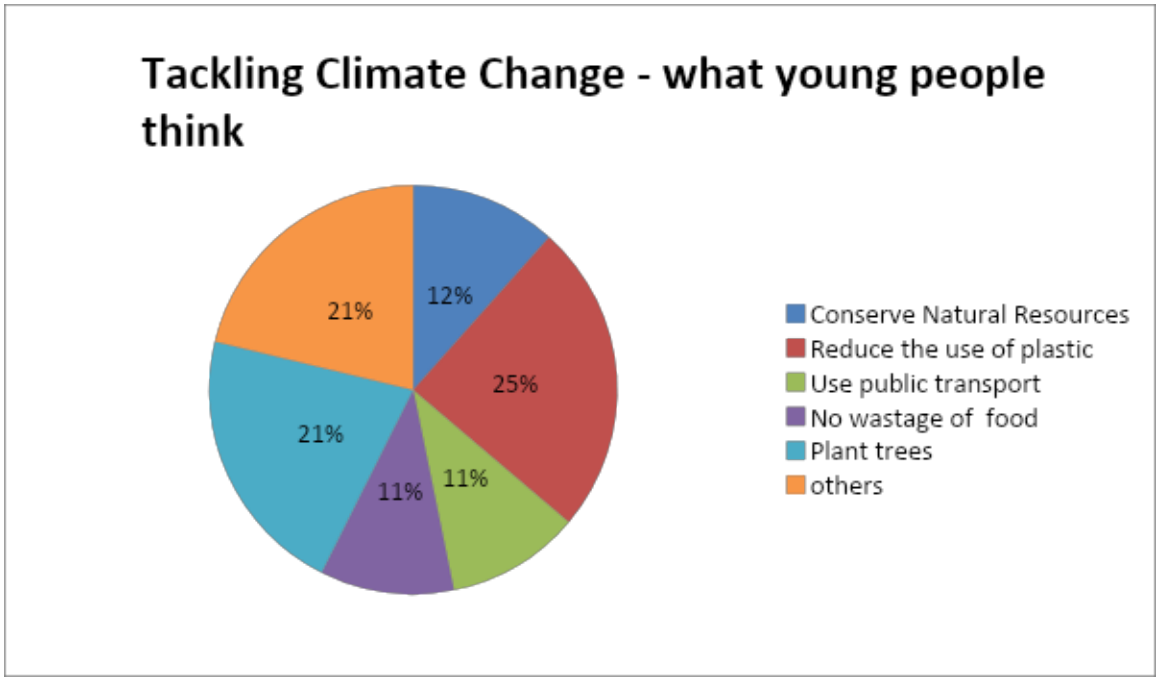
- Youth working as delivery boy, FGD (FCC4)

Key Findings:

- Across categories, reduced use of plastic, planting of trees and some 'other' measures were mentioned to tackle climate change, primarily at an individual consumer level.
- Overall, 39% reported having taken initiative across categories, while 56% had not taken any personal steps to address these issues.
- Young people (18-29 years) were doubly more active (54%) in taking initiative at a personal level than those aged 30 years and above (28%).
- An understanding of larger systemic and structural measures, including how policy decisions at higher levels impact the people of the ground is lacking among most of the respondents, especially the youth.

What kind of measures are needed to tackle climate change? Asking this question and getting insights of the respondents is important for future programming with youth towards climate education and policy advocacy.





Reduced use of plastic, planting of trees and some 'other' measures were mentioned to tackle climate change. The responses were similar with plus or minus percentages across both age groups of young people and older adults. The 'others' category included mindful use of sustainable products; turnoff electrical devices; use energy efficient appliances; use less water etc. These suggestions seem to be in line with what

the urban educated study as environmentally conscious behaviour at a personal level, and may be a reflection of the options provided in the survey tool.

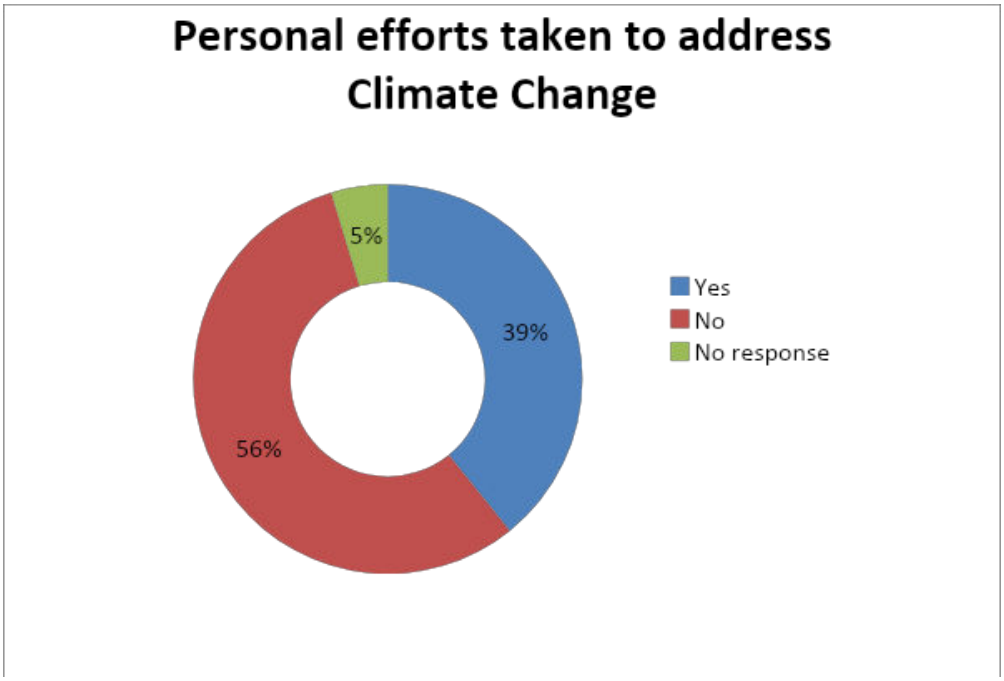
Coming from their own peer age group, the young champions can look into these ideas while planning climate education in the locations. However, it would also be important to integrate the perspectives of those with no formal education, but with years of lived experiences and native wisdom. The FGDs provided some additional valuable insights on how to tackle climate change effects. (see box)

Additionally, it would be important to go beyond immediate consumer-end measures, to also look at larger systemic and structural measures, including analysis of how policy decisions at higher levels affects the proverbial last man or woman on the ground. While the FGDs with University youth were mostly focused on consumer-end measures, a few of them did touch upon policy level and systemic changes. *"These are small measures but we need big measures for any actual impact. Like maybe not mining, not using so much oil."* Beyond, individual level efforts, more importantly, a few of them identified that big business, international cooperation, institutional mechanisms and political will including voting, has a role to play in addressing the situation at multiple levels. Young people understanding ground experiences while also having a larger critical overview of 'development' is essential to tackle climate change.

> *"We used to have Banas in our village which are basically trees left for the Village God and conserved. In a way, this helped retained the green. Nobody used to dare to touch them. We have to bring the traditions and go back to our roots. Our traditions were done considering the future so that people don't overuse and exploit anything. Going back to the traditional practices, roots of our village and communities, understanding why certain things are done, how our ancestors lived without impacting nature and practicing the same now will certainly help the younger generation."*
>
> **--- Woman participant in FGD, Tubrahalli (FIR5)**

Steps taken at Personal Level: Additionally, the study on climate change tried to know the steps taken personally by the respondents to address the issues. Overall, a significant 39% reported having taken initiative, while 56% had not taken any personal steps to address the challenges posed.

Personal efforts towards climate change across two genders, two age groups and levels of education were also analyzed and found that consistently more men compared to women (60 percent vs 40 percent) were taking initiatives. This was repeatedly seen in other parameters of the study, but allowance should be made for lower self-reporting among women. Those who completed secondary and high school education and graduate/certificate holders responded positively to the action taken. Data on the respondents who did not have formal education, but had initiated action towards climate change was indicative of active community participation on climate action. It is very heartening to note that young adults of the 18-29 years age group were doubly more active (54%) in taking initiative at a personal level than those aged 30 years and above (28%).



Looking at action taken across various caste groups, 'others' category, OBC and ST communities were actively taking personal initiatives. However the details of the same were not elicited. Community's participation in climate change mitigation and adaptation is necessary for any sustained change. Involving

the marginalized communities in the study and planning for advocacy would be an added advantage towards youth action on climate change. Personal efforts by youth mostly centred around reducing plastic use, consumerism and pollution.

Support Needed

Key Findings:

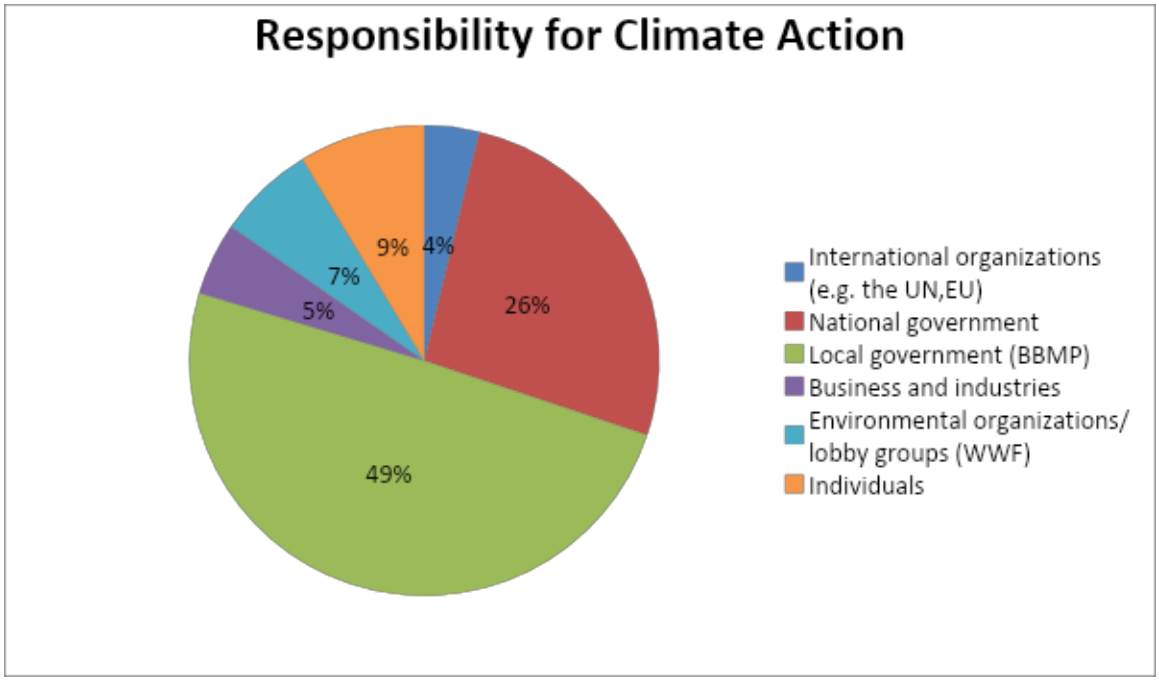
- Across communities, the role of the local government agency BBMP was overwhelmingly emphasized (49%), followed by the role of the national government (26%) in addressing climate change.
- The role of the individual was also recognized and emphasized, especially in R-A Nagar.
- Both older men and women and young people themselves strongly believed that young people should take the lead, but they are not. They require to be sensitized, mobilized and organized.

Tackling Climate Change - Who is Responsible

Tackling climate change needs sustainable efforts of the communities. At the same time support from all quarters is essential towards policy advocacy. Respondents from the 5 localities were asked about the responsibility to tackle climate change. The responsibility of local governance organization, ie., the BBMP, has been emphasized by the respondents from 4 out of 5 locations (Tubrahalli data was incomplete). The role of national governments to tackle climate change was also highlighted along with individual responsibility. There was also a lot of dissatisfaction expressed with their previous efforts at engaging with local Governments and MLAs.

"No one is interested in complaining to the authorities. Once in 6 months people from the MLA office come and make note of the complaints but no action is taken after that."

- Youth, FGD, DJ Halli



In addition to the above options, there was a discussion in the FGDs on the role of young people in taking the lead on climate change. While adults expressed disappointment about young people not taking enough interest in community issues and not coming forward to address them, the youth also felt that they did not have time to do so, as they were facing concerns related to education and livelihood/ career. However, a few young people identified how the two were not entirely divorced from each other, but actually connected. They also recognized that the actions of the privileged sections contribute more to climate change, though the effects are felt disproportionately by youth in the underprivileged sections.

Some youth have been involved in community action, like going along to the MLA office when required, involved in drafting of letters etc. They also talked of mobilising DJ Halli Football group and organising film screenings on important issues to get other young people interested.

"Irrespective of who has contributed to it, young people have to take the lead to take action against climate change. Because we are the ones who will inherit the earth after those who cease to exist."

- Youth, FGD (FCC2)

Conclusion and Recommendations

The Youth Climate Action Lab has piloted and demonstrated how a youth-led research approach can be used to address complex issues like climate change, with a bottom-up perspective. The year-long process involved investing in training and engaging 6 Youth Climate Champions and 3 Youth Researchers, and adopting a mixed methods research process co-designed and led by young people.

This resulted in a cascade effect of these young leaders further engaging 120-150 young people from the communities. Aside of the Youth Leaders, it is these Changemakers who will be key to driving and sustaining the ground-level advocacy for change.

Together, this youth-led, youth-engaging programme has studied and made plans for addressing a range of locally relevant issues having global linkages, by collecting the voices of the most vulnerable communities across five locations in Urban Bengaluru, specifically including the voices of young people, who are the ones who will be impacted the most by the harmful effects of climate change.

Young leaders found that the awareness of climate change as a term and concept was limited, but the communities' personal experiences of environmental changes and challenges were too stark to ignore. The study provided the research team an indepth understanding of the various local issues that are directly and indirectly a cause or consequence of climate change, and also more nuanced understanding of development and its links to power and inequity.

It further pointed to the importance of public policy and governmental accountability in considering the needs and concerns of the marginalised in planning for inclusive development. It also emphasized the need for local collectivization and citizen action for holding duty-bearers to account.

Further, it confirmed the proposition that young people are best suited to lead change in their communities and need to be at the forefront and centre of dialogues around climate change.

Flowing from these findings of the study, adding on the Research Consultants' suggestions, the below section also draws upon the experience of the Restless Development team and suggestions from a workshop with the Youth leaders on their observations and analysis of the findings based on qualitative and quantitative data collected by them.

The report outlines below some suggestions for advocacy plans at various levels and the potential for future actions.

- Awareness building on the interlinkages of local issues with the causes and consequences of global climate change, using creative youth-friendly methodologies: Awareness about climate change is low, especially among youth and women. While issues are seen in isolation, the systemic perspective and interlinkages is missing. Use of theatre, music, art and games to build awareness and understanding would be crucial to developing an informed and engaged next generation.

- Systematic documentation of changes in the environment over the decades may be undertaken, and its possible association with climate change explored along with evidence. It is seen that the elderly and migrants from agricultural lands have many observations, experiences and insights to offer. There is a lot of climate knowledge and wisdom also contained in vernacular language and in traditional songs and stories. These could be collected and documented for preservation of the knowledge, and also to study trends and patterns that can inform advocacy and action.

- Systematic and scientific study to back ground experiences would be key to advocacy. For example, study of masterplans of the city over the years, to understand the changing topography and land use patterns, will give an insight into the possible causes for climate change and offer leads for resolution of current issues in the community. *The Champions were keen to take the findings of this study to a range of audiences – from community women to local heads as well as to the Government and the general public. They have proposed publishing it on the website and using art forms, social media campaigns and engaging youth influencers to put the findings / message across in interesting ways.*

- Building a cadre of committed and engaged youth in the communities is a priority for sustaining the efforts of the programme. The study clearly shows there is interest and concern among young people; however, young people in the communities need to be more involved in participating in and leading collective actions and taking ownership for community issues. *Additionally, the Champions have suggested setting up a center within the community, keeping a stipend/grant for the changemakers to enable them to spare time from livelihood pursuits and offering non-monetary support like form filling, information sharing etc.*

- A schedule of regular interesting activities may be used for mobilization and retention of the young changemakers – like through football, weekly film screenings, educational outings and community activities like lake cleaning, wall painting, biodiversity census, trash trails etc. These could be planned and designed by the Champions individually or collectively for locations. *Existing groups like the football groups in Tubrahalli and DJ Halli may be avenues for mobilization and collaboration, using sports and arts as entry points.*

- Create platforms for interactions and exchange between college youth and community youth – for two way knowledge building. It has been seen through the study that both college and community youth bring very diverse perspectives to understanding climate change. Two-way sharing of ground experiences and global theoretical perspectives will provide a more holistic understanding and enrich action by young people.

- Policy analysis and engaging with policy processes is an essential part of the ecosystem approach to solving climate change. The findings shows that a systematic study of larger systemic and structural measures, including analysis of how policy decisions at higher levels impact the people on the ground is lacking among most of the respondents, especially the youth, and to an extent even among the youth leaders. Such engagement will help identify solution beyond individual personal consumer-end actions to holding producers and policy-makers accountable as well.

- Interfaces with government functionaries and duty bearers to highlight concerns would be the immediate direction for advocacy. Awareness session on roles and interactions with various agencies and individuals, ranging from BBMP, local ward committee functionaries to state and

national levels would help target the advocacy efforts and reduce the fear of the community in representing their needs and rights. The Champions could set it up initially and gradually move towards regular institutionalized setups, like monthly local committee meetings, grievance days and public hearings. *The immediate plan is for organizing a consultation for sharing the results of this study with them.*

- Networking with existing activist groups and youth groups who are already working on these issues will bolster the efforts. There are many organizations and civil society groups already working on these issues at different levels of engagement, ranging from grassroots communities to policy. Many of these have been cited in the literature review section. Forming an advisory group or a coalition of like-minded organizations with varied expertise will help the advocacy be amplified and have a greater reach.

- Last but not the least, climate action needs to have Climate justice as its foundation, based on an understanding of power dynamics. Community's participation in climate change mitigation and adaptation is necessary for any sustained change. Involving the marginalized communities in taking the lead and planning for advocacy with these communities needs to be integrated into every step and will be the way forward for successful youth action on climate change.

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Annexures

1. Profiles of Youth Climate Champions and Researchers
2. Profiles of Study Locations
3. Action Plans
4. Research Tools
5. Consent Form Sample
6. YCAL Practice Activity Outline - Designing Advocacy Campaigns