BENGALURU SUSTAINABILITY FORUM

ANNUAL REPORT

2022 - 2023

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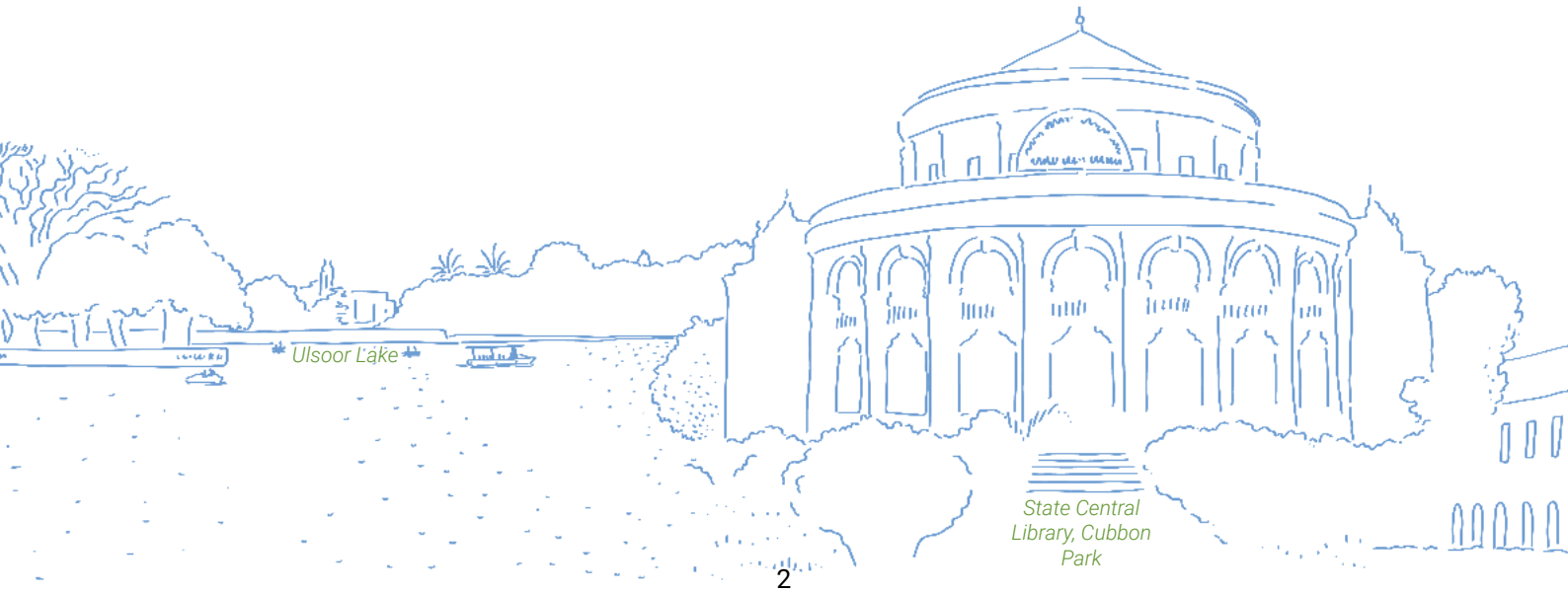


CONTENT

FOREWORD

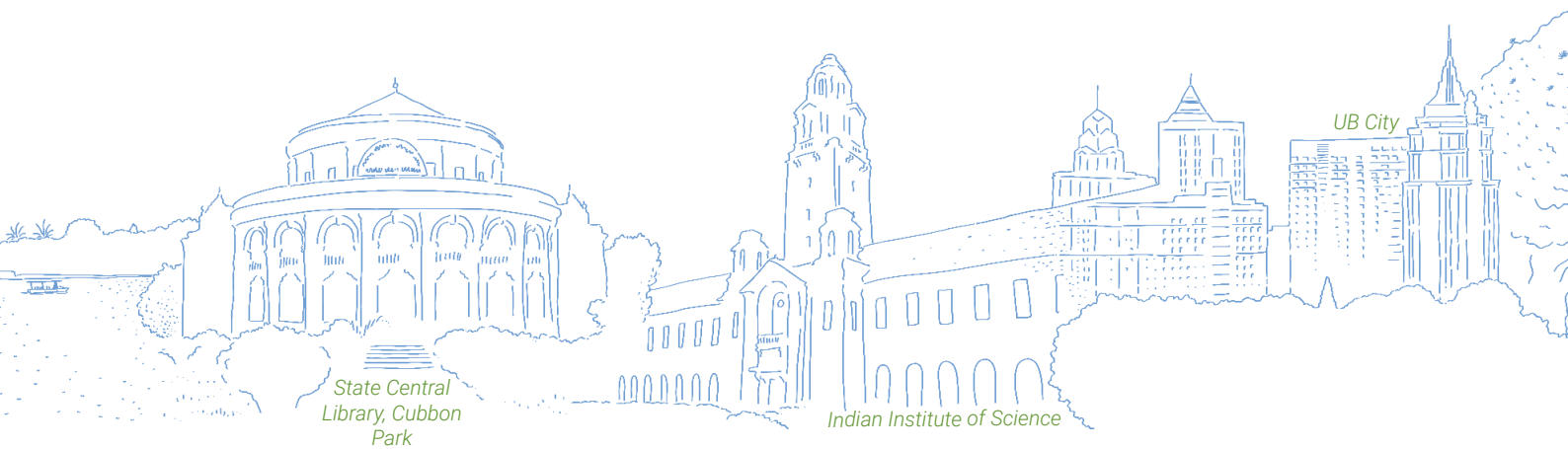
As academics, researchers, practitioners, and institutional heads, we often find ourselves focussed on our own specialized domains, and confined to our institutions. This prevents us from considering the broader context and the interplay between our work and the environment and society at large. Even policymakers and those in positions of authority tend to overlook this interconnectedness.

We were inspired to establish the Bengaluru Sustainability Forum to address this critical gap in the realm of sustainability, considering the number of organizations in the city focussing on sustainability and the presence of many research institutions committed to the cause. Our core belief is that breaking down the barriers between disciplines and promoting meaningful interactions among diverse stakeholders is the only way to effectively address the challenges we face today.

BSF was formed as a forum for reflection, listening, learning, and encouraging interdisciplinary collaborations. BSF's purpose is to catalyze and connect the diverse efforts that are taking place in our city to promote sustainability. Supported by a grant from Wipro Foundation, and housed at the National Centre for Biological Science, the forum is steered by committed individuals from a number of institutions who are working towards the goals of sustainability in our city. It's activities are led by our coordinators Manasi and Namrata.

This report gives a glimpse into the various ways BSF has continued to build on this intention in this past year. Thank you for joining us on this journey towards a more sustainable world where we believe that we have to act locally to effect a global solution.

Satyajit Mayor and P.S Narayan



OVERVIEW

As the world stepped out of the constraints of the pandemic, and resumed a semblance of normalcy this past year, Bengaluru Sustainability Forum continued to drive interdisciplinary conversations and multifaceted interactions on Bengaluru's sustainable future. The pandemic had underscored the need to take the challenges of environmental turmoil seriously. With that in mind, we focussed on one of the biggest issues confronting us today - building resilience and adaptation in the face of a changing climate.

That therefore, was the theme of our very first in-person retreat post the pandemic. Planned over two days, it was a dive into what climate resilience meant for different people and organisations in the city. We questioned what resilience looked like in real life and how it could be built in the spaces and communities in which the participants worked.

The focus on conversations on climate continued with our collaboration with Science Gallery Bengaluru on the **Global We for Climate Action Programme**, spearheaded by the UN Live Museum for the United Nations. It was an attempt to bring many more diverse voices, especially from marginalized and underrepresented communities, into the climate agenda; and was a unique experiment which connected people from across the world via 'portals' using the power of technology.

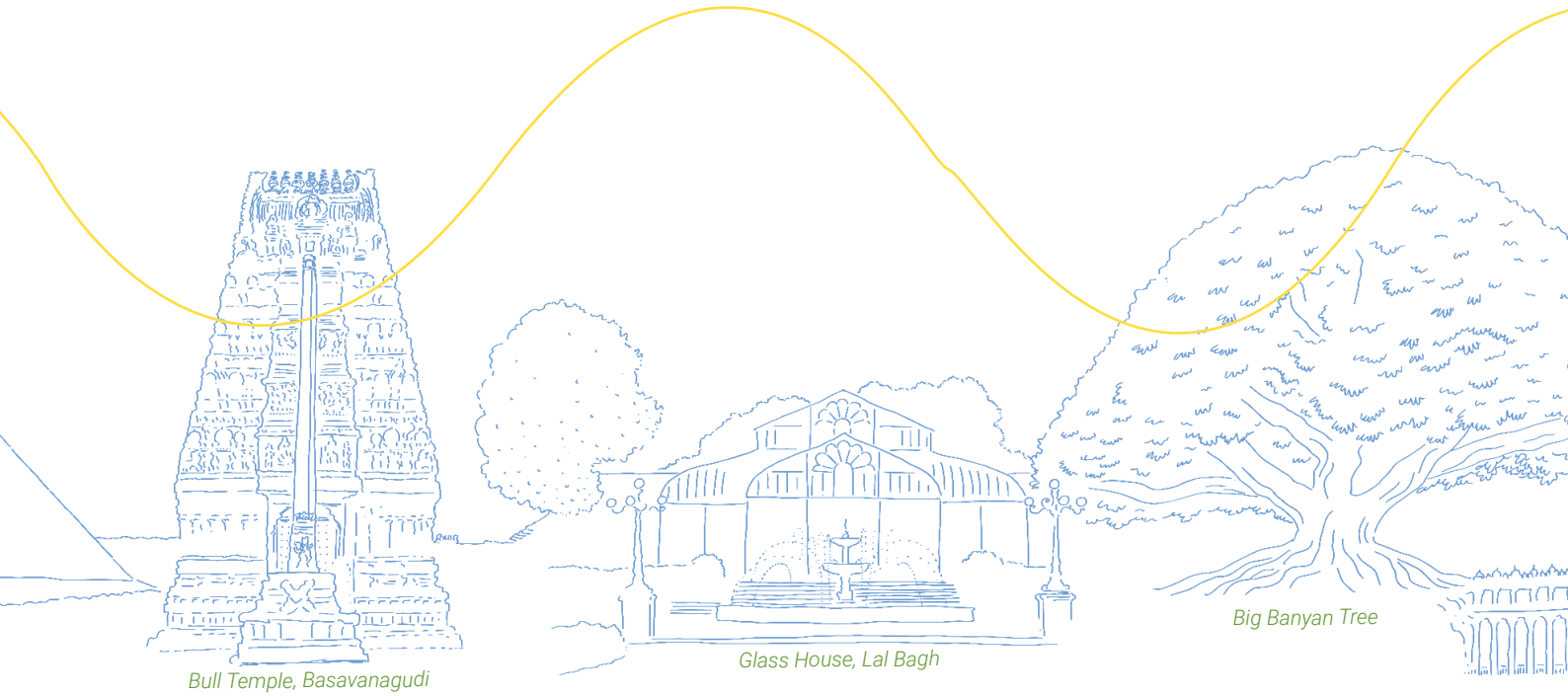
Next up was a collaboration with Swissnex on the Indian screening of the **Global Science Film Festival** 'Into the Glacier' and an accompanying global panel discussion. The film was screened simultaneously at six venues - one each in China, Japan and Switzerland and three in India. The global panel discussion featured Dr Anil Kumar, Climate Scientist from IISc, Bangalore.

The call for the 5th edition of the **Small Grants Programme** announced last year also was themed around climate change and action, and we are excited to see how the selected projects unfold. In addition to information on these new Small Grants projects, this annual report includes updates on some of the projects from the earlier cohorts which concluded in the past year or are on their way to wrapping up.

Lastly, in case you missed the news, we finally released the podcast **Ooru** in September 2022. In this 5 episode collaboration with Vaaka Media, we sought answers to some basic questions about our lives in the city; be it food, work, public spaces, urban planning and infrastructure to what our sustainable future could or should look like. Listen to the episodes, all available on Apple podcast, Spotify or any other podcast platforms of your preference.

BSF will continue with the focus on climate change and climate resilience through the coming year. Do reach out if you would like to collaborate in this effort.

Manasi and Namrata



Bull Temple, Basavanagudi

Glass House, Lal Bagh

Big Banyan Tree


System
Water
Mobility
Ecology
Transport
Air
Justice
Research
RETREAT
Activism
City
Dialogue
Change
Waste
Collaboration
System
Water
Mobility
Ecology
Transport
Air

CLIMATE RESILIENCE RETREAT

JAN 27 - 28 2023

Participants introducing themselves; Photo credits: Bhanu Sridharan

Group photo at the end of Day 1; Photo credits: School of Ancient Wisdom

This was BSF's first in person retreat post the pandemic and it brought together a diverse group of people from various fields to discuss and explore climate resilience; from what it might mean and look like in real life for different sections of the society, to how it could be built in the spaces and communities in which the participants worked.

A break out discussion post the panel; Photo credits: Bhanu Sridharan

The participants included climate researchers, social scientists, politicians, activists, journalists, citizens and practitioners working on democracy, sustainable food, and other related areas.
We began with sharing what Climate Resilience meant to each participant and later went on to discuss 4 main aspects over the 2 days:

- **Climate Realities and Local Capacities**
- **Infrastructures: Intent vs Impact and Politics of climate change**
- **Climate vocabulary and actionable climate science**
- **Adaptation strategies in climate action plans (CAP) and their implementation**

The opening session on ***The Anthropocene, India, and the cityscape*** by Mahesh Rangarajan gave a historical overview looking at how people in the past looked at resource utilization and management and the systems they created to cope with crises like droughts, floods, etc; as also the impact of colonialism on the region's traditional and indigenous production and management systems.

Representatives from the Domestic Workers Rights Union and the Auto Drivers Association foregrounded the challenges of dealing with extreme weather events in low income neighbourhoods.

Overall, the discussions converged on a consensus that:

- **All citizens were entitled to resilient infrastructures and systems as their right**
- **Climate issues intersect with political and social problems and merely technical solutions will not help**
- **Decent standard of living and meeting basic needs of communities is crucial to free them up to think about larger environmental problems**
- **Local, decentralised and democratic decision making and greater political participation are very important tools and can play a crucial role in building resilience.**

Domestic workers (Yashoda, Lakshmi, Chennamma) , Auto Driver's Association representative (Rudramurthy) in discussion with Geetha Menon during the Climate Realities panel; Photo credits: Bhanu Sridharan

'An uncertain winter' film screening; Photo credits: Bhanu Sridharan

Radha Chanchani (WRI) presented the key components of WRI's Bengaluru Climate Action and Resilience Plan; Photo credits: Bhanu Sridharan

SMALL GRANTS PROGRAMME

UPDATES, EVENTS AND PUBLICATIONS

CURRENT ROUND OF SGP PROJECTS

We have been encouraging active work on the ground as well as research driven projects to bring out the best of Bengaluru and its knowledge-rich citizens.

For the 5th edition (2022), we invited proposals themed around **climate change** and **climate action** in the city. We received over 80 proposals from various organizations and individuals.

The final cohort includes on-ground climate work, outreach and communication projects as well as documentation of common resources and biodiversity that are at risk.

- **Flourishing Bengaluru in the era of climate change** - *Socratus foundation for collective wisdom and Manu Mathai*
- **Applying biodiversity lens for a sustainable city** - *Indian Institue for Human Settlements (IIHS) and Saskya van Nouhuys*
- **Reclaiming the commons at the fringes** - *Wildlife Conservation Group (WCG) and Sri Ramakrishna Mission*
- **Sustainable urban development in the era of climate change** - *ICLEI and University of Trans-Disciplinary Health Sciences*
- **Ward Heatwave guide** - *Ashoka Trust for Research in Ecology and the Environment (ATREE), Ajay Raghavan and Abhayraj Naik*

Two other projects themed around water and biodiversity have also been initiated with the current cohort.

- **Vrishabhavati Story Project** - *Bangalore Environment Trust, Kadambari K and C Kathyaini*
- **Kannada Book on Common Butterflies** - *Eco Edu and Karthikeyan S*

Click on the project titles to head to their respective pages.

FLOURISHING BENGALURU IN THE ERA OF CLIMATE CHANGE

Project runtime: April 2023- ongoing

Contact: Bhargavi Nagendra, Socratus Foundation for Collective Wisdom
(bhargavi.nagendra@socratus.org)

Like many major cities, Bengaluru faces a challenging mix of aspiration, opportunity, disruption, and uncertainty. The project is in response to this and the belief that three relevant dimensions to the re-imagination of cities of the future are- Citizenship, Climate, and Collaboration. Namma Ward Namma Dhwani is the project's first major initiative in this frame.

By 2030, the hope is to demonstrate a city where we live well together, despite the emerging environmental challenges. Cities of different sizes and shapes host the aspirations of many young people in India. The collective goal is to experience a city where they flourish, not just survive. In order to progress towards a flourishing society, we need to be equipped with frameworks and tools to engage with the complexity of urban existence and human aspirations. This initiative will develop and apply a set of tools to understand the idea of human well-being as expressed by the citizens of a ward and enable a culture of deliberative democracy. To enable the use of these tools, a process will be incubated at the local level to nurture a culture of deliberative and democratic urban governance.

To know more, click here.

Group meeting with members of a microfinance group in JK Pura, Shantinagar, where the team tried out the "know your ward" tools, including a Ward Quiz; Image credit: Socratus Foundation for Collective Wisdom

APPLYING A BIODIVERSIY LENS FOR A SUSTAINABLE CITY

Project runtime: April 2023- ongoing

Contact: Ravi Jambhekar, Jagdish Krishnaswamy, IIHS
(rjambhekar@iihs.ac.in, jkrishnaswamy@iihs.ac.in)
Saskya van Nouhuys, IISc *(saskya@iisc.ac.in)*

The plan for the project is to integrate data driven research along with citizen science initiatives to study the effects of urbanization and climate change. The focus is on birds and butterflies, with the aim of predicting the vulnerability of these charismatic species to the effects of climate change and urbanization.

Climate change and rapid urbanization threaten biodiversity worldwide. Most of the information on biodiversity loss comes from the temperate countries and forest landscapes. How urbanization and climate change affect biodiversity in the tropics is still lacking. Tropical cities, including Bengaluru are rich in biodiversity, especially birds, small mammals and insects. In the context of Bengaluru: the integration of biodiversity in sustainable urban development requires fostering transdisciplinary and creative linkages between urban ecology, awareness about the biodiversity. Both direct and indirect underpinning of urban biodiversity conservation with ecosystem services such as carbon sequestration, hydrologic services and micro-climatic regulation services for heat-island and global warming heat stress and citizen science is necessary. The work will be done in educational campuses, which act as carbon sinks, biodiversity hotspots and wildlife refuges, to study the persistence of wildlife with respect to campus management and environmental drivers and come up with management solutions for the rest of the city. These campuses will include India's and possibly the global South's first long-term urban ecological observatory (LTUEO) being developed by IIHS in Bengaluru as well as large campuses such as the GKVK and IISC.

Image credit: IIHS

RECLAIMING THE COMMONS AT THE FRINGES

Project runtime: April 2023- ongoing
Contact: Dr. Ashwatha K.N, WCG *(wcg.bnp@gmail.com)*

Urbanization is an increasing phenomena as we now see almost half of the human population living in cities. Bengaluru, is one of the fastest growing cities in India. Bengaluru today, is facing many problems due to urbanization - drinking water, waste disposal, urban congestion, urban population in slums, and encroachment into peri urban areas. The ill effects of these are visible on the commons and we are depriving them by causing destruction, which results in changes in climate and increases global warming.

In order to solve such problems, the role of community and children is very important in addressing peri-urbanization, maintaining the commons and studying the biological ecosystem there. Educating and sensitizing them about the importance of these is very crucial to our current times. In that regard, Wildlife Conservation Group (WCG) and Ramakrishna Mission, Sivanahalli have done and are continuing to do a lot of work. For more information, visit the following websites:
WCG and Ramakrishna Mission, Shivanahalli

The Goals of this project are:
1. Mapping commons at the Grama panchayat around Bannerghatta National Park
2. Documentation of biodiversity of commons:
3. Evolving community based commons conservation plans at the grama panchayat level

Morning walk to survey birds and butterflies' species; Image credit: WCG

SUSTAINABLE URBAN DEVELOPMENT IN THE ERA OF CLIMATE CHANGE

Project runtime: April 2023- ongoing
Contact: Monalisa Sen, ICLEI *(monalisa.sen@iclei.org)*
Abdul Kareem, TDU *(abdul.kareem@tdu.edu.in)*

One of the major challenges being faced by cities is the complete absence of biodiversity conservation in urban planning. Mainstreaming biodiversity conservation is even more imperative in the backdrop of climate change. This will help to plan blue-green infrastructure to address climate change, through nature-based solutions. Development of the City Biodiversity Index (CBI) is the first step in mainstreaming biodiversity conservation. The CBI, also known as the Singapore Index, was developed after the ninth meeting of the Conference of Parties (CoP) in 2008. During this meeting it was acknowledged that that cites and local bodies have an important role to play in the implementation of a country's National Biodiversity Strategy and Action Plan (NBSAP), an important instrument outlining strategies and actions for the conservation of biodiversity. Over the decades, amidst the process of becoming the 'Silicon Valley of India', the city has witnessed a sea of changes in terms of population growth, infrastructure development and associated environmental impacts such as the encroachment of lakes, felling of trees and conversion of green spaces. As the city's urban sprawl spills into the peripheries leading to fragmentation of the surrounding natural ecosystems and loss of green cover, the city administration needs to incorporate planning for ecosystem management and conservation. This will lead to more inclusive and sustainable growth. As a first step, the CBI will be applied, which will support Bengaluru's decision makers to consolidate the available biodiversity-related indicators at the local level. This could then help the city to evaluate its biodiversity conservation efforts and plan for a healthier and more liveable city. The project will develop the City Biodiversity Index for Bengaluru city, specifically for the Bruhat Bengaluru Mahanagara Palike (BBMP).

Image credit: Shutterstock

WARD HEAT WAVE GUIDE

Project runtime: April 2023- ongoing
Contact: Dr. Manan Bhan, ATREE *(manan.bhan@atree.org)*

The project aims to develop a heatwave guide for the Marappana Palya ward in North Bengaluru in a grounded and collaborative manner with ward-level representatives, interest groups and communities to systematically tackle future incidences of heat waves in the city.

The project's vision is to develop a handy reference for collective action which incorporates learning from existing adaptation actions and puts forward site-level actions for adaptation gathered from a participatory process in the ward. There is belief that if adaptive actions are specified, it will enable participatory processes and help to anticipate long-term and systemic effects of heat stress-focussed action strategies, it is only then that one can create local capacity for heatwave preparedness and significantly mitigate the impacts of future heatwaves in the ward.

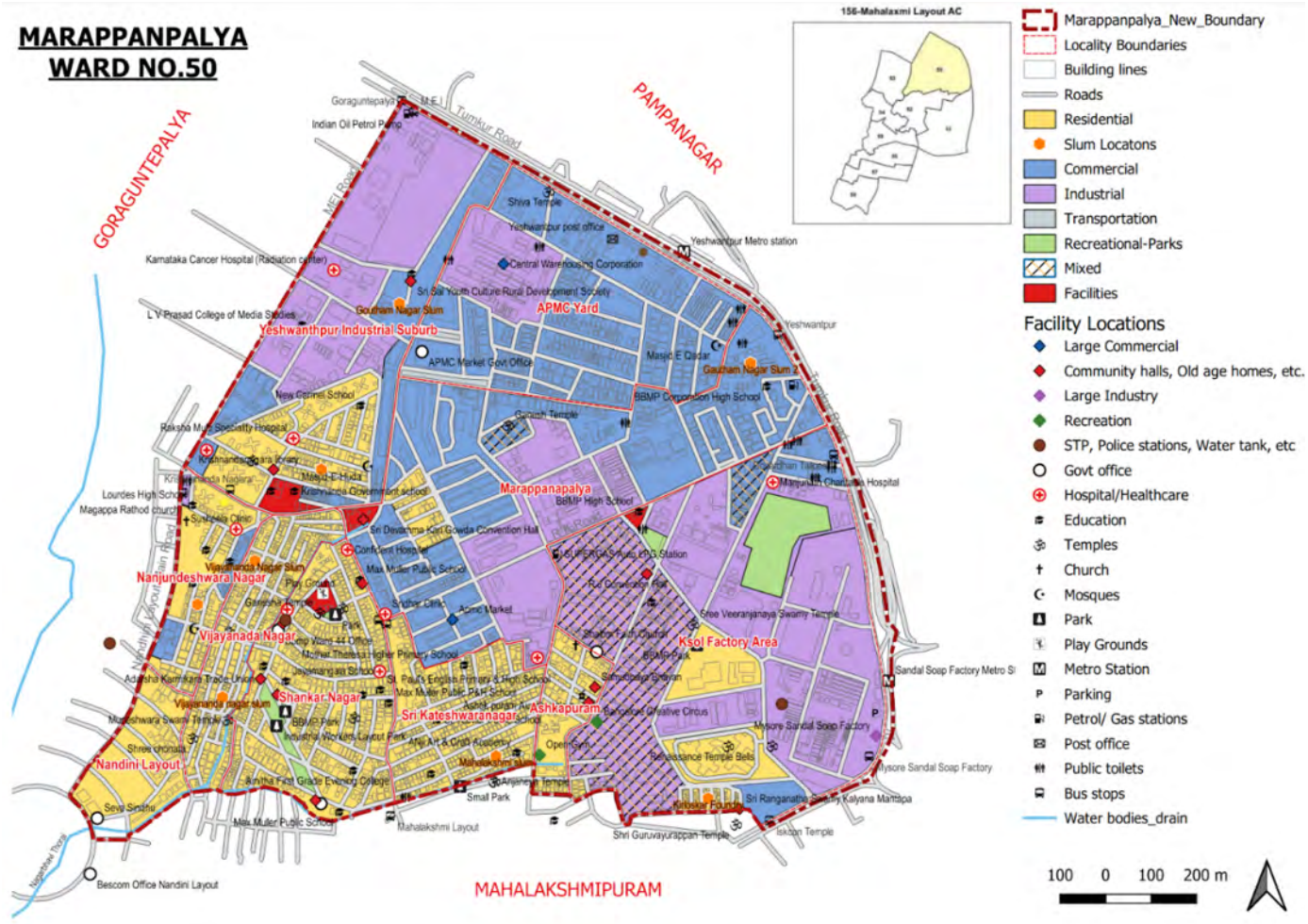


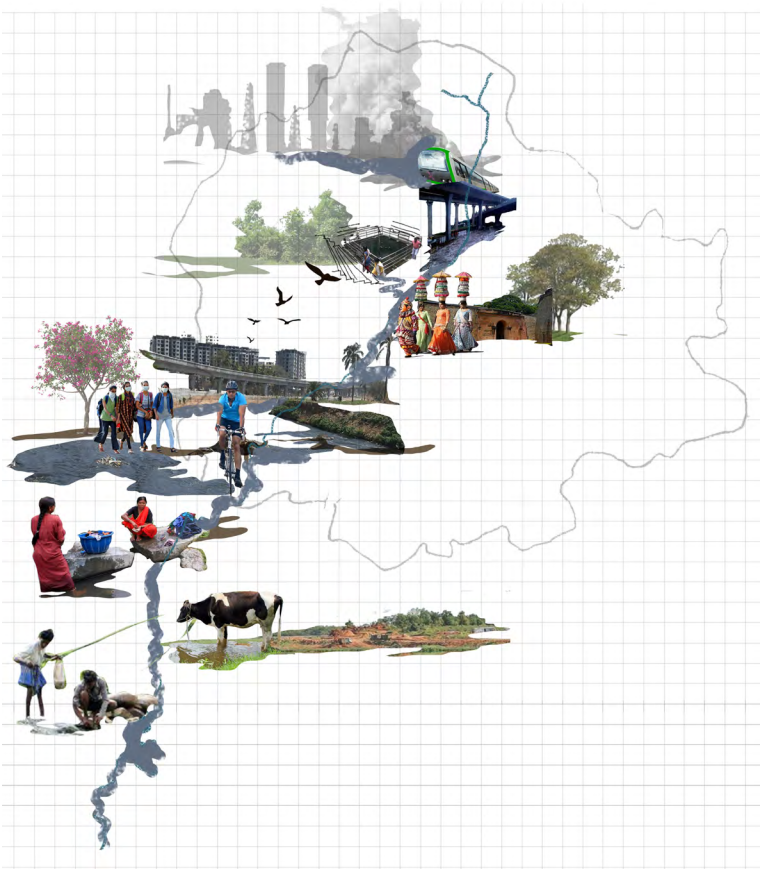
Image credit: Socratus Foundation for Collective Wisdom

VRISHABHAVATI STORY PROJECT

Project runtime: May 2023- ongoing

Contact: Kadambari Komandur *(vrishabhavatistoryproject@gmail.com)*
Nirmala Gowda *(nirmalagow@gmail.com)*

This project is an initiative of a team of Bangalore based designers, in collaboration with Bangalore Environment Trust. The aim of this project is to use their combined expertise to bring to light stories of socio-ecological relevance, in the Vrishabhavati basin.



Since Vrishabhavati is largely invisible in urban areas, it is forgotten and misused. The impacts of this misuse are then felt by the downstream catchment. Therefore, there is a need to explore the river, both for the urban reader, who does not see it, and the rural reader, whose voice is not being heard. For this, stories are an ideal medium. They are not only engaging, but also allow freedom for the narrator to express themselves freely. Contextualizing the larger themes of flooding, livelihood, impact to biodiversity and industrial pollution, this narrative will explore the challenges faced by Vrishabhavati as an entity and study the role that it plays in Bangalore's urban, peri-urban and rural areas. The result of this project will be a bi-lingual print publication, in English and Kannada.

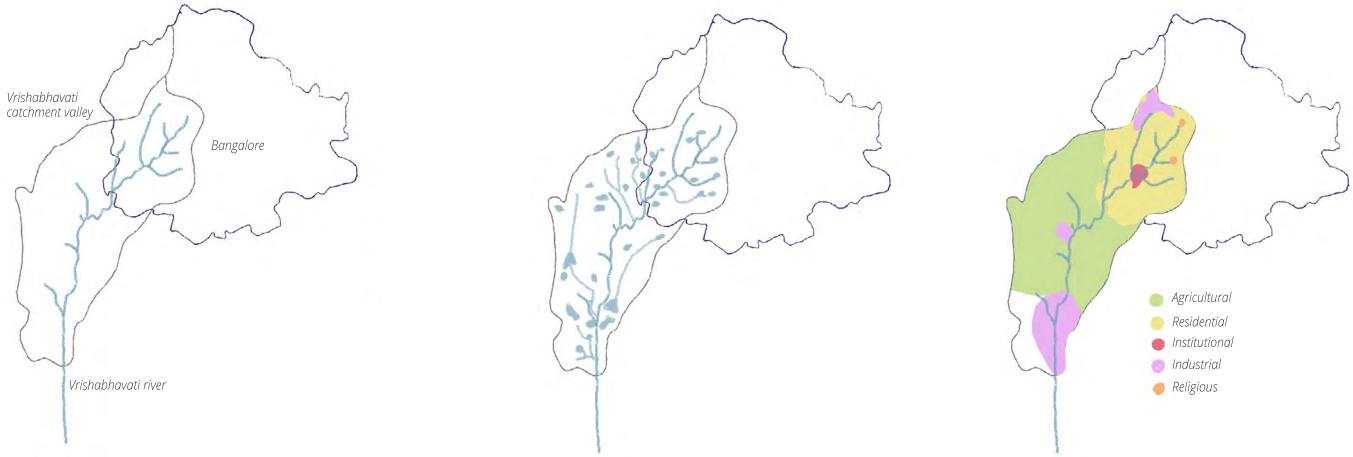


Image credits: Vrishabhavati Story Project

KANNADA BOOK ON COMMON BUTTERFLIES

Project runtime: April 2023- ongoing
Contact: T.S. Srinivasa *(team@ecoedu.in)*

Karnataka is home to more than 350 species of butterflies. However, there are hardly any books/ field guides in Kannada which provide field identification cues or descriptions. The project aims to prepare a field guide in Kannada helping in the identification of common butterflies. This in turn will help in creating awareness on the diversity of these winged wonders and facilitate conservation efforts.

The project will utilize the collective experience of the Authors in Field Work and Environmental Education. The primary objectives include:

• Designing an easy to use Field Guide on the Common Butterflies with good quality photographs and illustrations;

• Providing cues for field identification of the selected species;
• Enhancing observation and identification skills;
• Providing information on the ecological importance of Butterflies and their conservation

This is expected to facilitate quick learning amongst students of vernacular medium. The Field Guide will also help to build awareness at the local schools and communities, thus enabling them to appreciate the importance of the flora and fauna and their impact on the immediate environment.

The previous project on the Kannada Field Guide on Common Avenue Trees by the same authors has been well received and appreciated for it's compact design and comprehensive information.

Image credit: Karthikeyan S

UPDATES OF ONGOING PROJECTS

The projects that were initiated with the support of the Small Grants in Rounds 3 and 4 were around biodiversity, air pollution, climate change, water and waste management in the city. The projects listed were delayed due to the pandemic and are now ongoing or nearing completion. We have exciting progress updates on each of these projects.

Click on the project titles to head to their respective pages.

URBAN BIODIVERSITY

- **Suttha Muttha**
- **Bird Board Game**
- **The Bee Garden**
- **Flash cards on common spiders and insects**

URBAN WATER

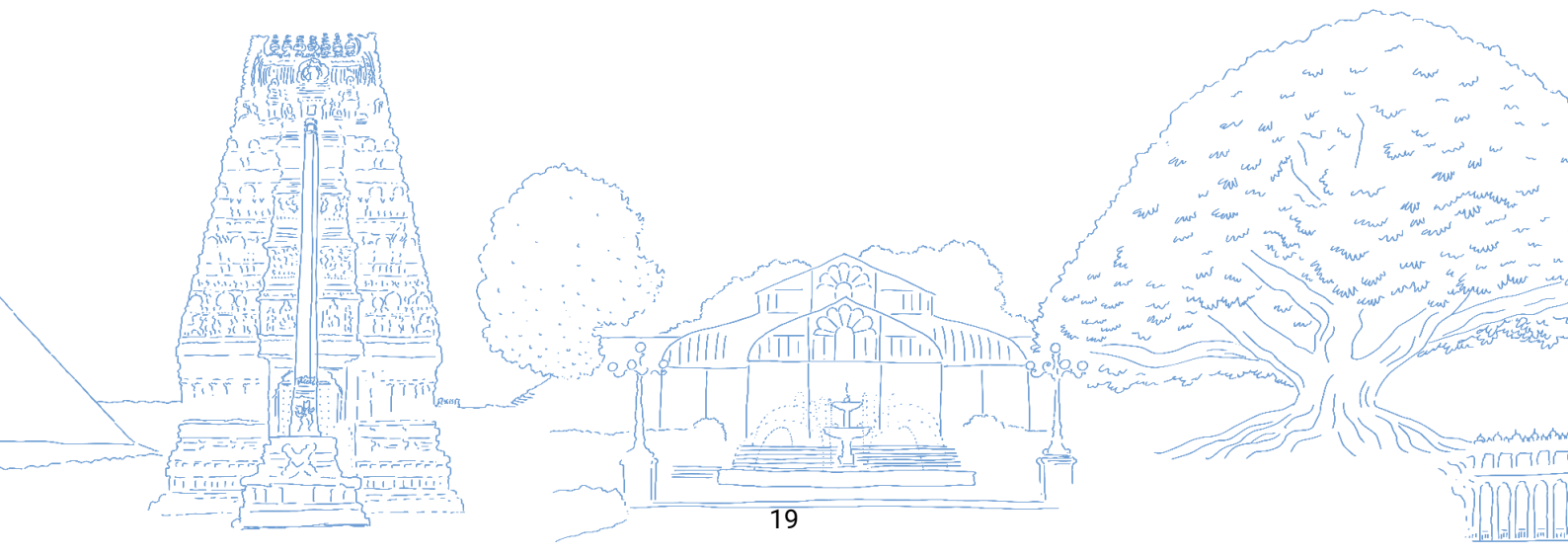
- **Lake Health Index**
- **Water Quality Criteria**

URBAN CLIMATE CHANGE

- **Air quality monitor**
- **Grounds for change**

URBAN WASTE MANAGEMENT

- **Civic crowdsourcing using technology**



SUTTHA MUTTHA

Project runtime: May 2020- Mar 2023

Contact: Roshni Ravi, NCF *(roshniravi@ncf-india.org)*
Jane Sahi, NCF *(janehelensahi@ncf-india.org)*
Vena Kapoor, NCF *(vena@ncf-india.org)*

The Suttha Muttha project aimed at creating resources on local biodiversity around the Silvepura area in the outskirts of Bengaluru city. Along with resource creation, the project also aims at facilitating the use of these resources in a few schools, community library and distribution of the material in other relevant learning spaces.

The 3 themes for resource creation were:

1. Seasons:
A series of bingo sheets were created on summer, monsoon, winter and spring to encourage students and teachers to take a walk in their neighbourhood, look out of their windows and notice what changes around them with the passage of seasons. The Bingo sheets were starting points for conversations around seasons and also led to the students creating a season-based scrap book with the support of the FTLC teachers.


Image credit: Suttha Muttha project

2. Plants around Us:
For this theme, plant posters were created featuring Giant Milkweed, Singapore Cherry and Neem. Along with this, two reading cards were also produced featuring common trees in the region.


Image credit: Suttha Muttha project

3. Biodiversity in a Peri-urban Landscape
The final output is in the form of a picture book that highlights biodiversity in a rapidly changing and dynamic peri-urban landscape. It is a bilingual picture book titled “There’s Nothing There!”/ “ಅಲ್ಲಿ ಏನೂ ಇಲ್ಲಿ !”

All resources created under the Suttha Muttha project are open source and digital copies will be uploaded on the BSF and Nature Classrooms website.

Along with Tarabanahalli Government Primary School FTLC, teachers have been doing a project on the seasons over the past seven months to explore aspects of each season through observation activities, poetry and mind maps. The children have created a book to record their findings using drawings and their own words.

Though the Suttha Muttha project comes to an official close in March 2023, both FTLC and Nature Classrooms/NCF teams hope to continue using the teaching-learning material created as part of the project with students in and around Silvepura and beyond.

BIRD BOARD GAME

Project runtime: Aug 2021- Ongoing

Contact: Prasad Sandbhor *(sandbhorprasad@gmail.com)*
Priti Bangal *(pritibangal@gmail.com)*

This project aims to develop a board game that will help players collectively experience the life of tropical urban birds across three seasons of a year.

Board Game concept and prototype

The game concept is ready and 3 versions of prototypes have been play tested across 8 sessions, version 4 is under development. The design phase has almost concluded and the final version will be ready soon.

Game illustrations and auxillary materials

The bird illustrations are ready and other illustrations are in progress. An information guide about the birds in the game and documentation of the design journey so far will be published.

Background research

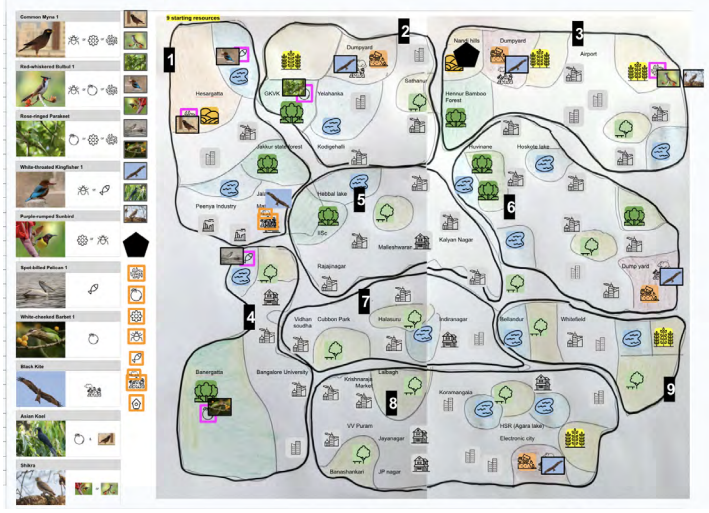
The team has built an extensive literature and media library for the game. This and the material from their interviews with experts like Dr. Subramanya will be published on their website in English and Kannada. Shortlisting birds for the game, identifying elements unique to Bangalore city and its challenges, events and changes in the city are being incorporated into the gameplay through iterations.

Website design (and community outreach)

The website has been launched. It will host outreach material such as blog posts and articles as part of the background research, and can be accessed at the links below:

English: blog link
Kannada: blog link

The periodically published bogs will reveal the game design process while the game is being finished! Their final community engagement sessions with the game will be conducted as both online and offline sessions starting December onwards and continuing past the grant period.



Internal Playtesting with the Bird board game team; Image credit: Priti Bangal

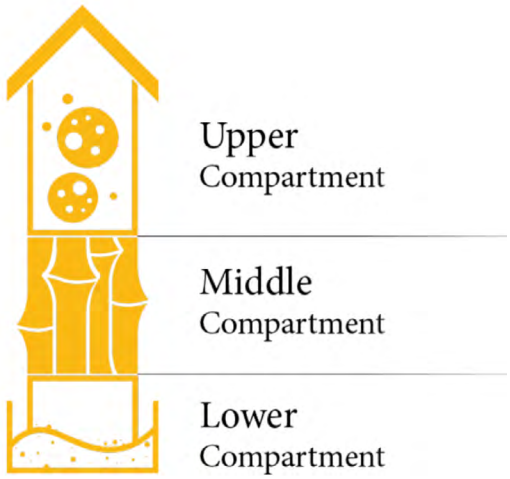
Worshhop on game design conducted by the team at BLR Design Week; Image credit: Bird Board Game project

THE BEE GARDEN

Project runtime: Dec 2021- Ongoing

Contact: Chethana Casiker *(chethanacasiker@atree.org)*
Maria Antony, ATREE *(maria.antony@atree.org)*

The design of the bee hotel was finalized after going through various ideas and options. The team came up with a bee hotel that has three parts, each of which cater to different bee nesting requirements.



The bee hotels have been made using up-cycled material, mainly, old wooden crates used for storing fruits and vegetables. The bee hotels are available in two variants. The lighter variant is best suited for more sheltered spaces (such as balcony or terrace). The heavier variant is better insulated from rain and can be placed in fully open settings (for example, a garden).

50 bee hotels were distributed free of charge to interested citizens of the city. They have developed a phone-based (Android) app alongside the making of the bee hotel. This is critical for encouraging participation and ensuring ease of recording observations. The app, 'Bee Hotel', has been launched on the Google Playstore. It has many features, and is also educational in nature.

Observations including date, time and type of bee activity, along with photo documentation can be logged via the app. It allows users to record bee species and information on relevant fauna and surrounding landscape features. This is important as it could help correlate bee data with landscape factors. Through this project, people have been trained in bee monitoring. These individuals could involve in or take forward conservation action at a local scale.

Images credit: Bee Garden project

FLASH CARDS ON COMMON SPIDERS AND INSNECTS

Project runtime: Apr 2020 - Ongoing

Contact: Vena Kapoor, NCF *(vena@ncf-india.org)*
Priya Venkatesh *(priya.images@gmail.com)*

The project imagines around 50 flash cards featuring 20 commonly found insects and spider groups. The content will have natural history information, behaviour and easy visual markers to aid in identification in fun and exciting forms. These flashcards on common spiders and insects around us are aimed at children and adults and can also be used by nature educators on guided walks.

The design is such that all the flashcards will be in a roller binder so that it is easy to carry around as a unit but also removable as separate cards so that they can be placed anywhere and used as teaching aids and educational games. This flash card pack can be used in nature groups in schools by educators to promote learning and initiate conversations.The set can also be used as group games during gatherings with family and like-minded friends in residential complexes. The design and content will be open source so that others may use the information to create/ modify it to suit their context or requirement for educational purposes.
A few more groups (Antlions, Lacewings, Spittlebugs) have been added.
Image sourcing and cleaning and final fact checking of species is underway

Praying Mantis

- Prominent large eyes and a triangle-shaped head that can move sideways
- Prominent, longer first pair of legs armed with serrations (toothed) and often held in prayer-like posture
- Weak fliers. When foraging, escaping, hiding they exhibit swaying to and fro movements

Images credit: Vena Kapoor

PRAYING MANTIS

They are a large diverse looking group - and some mimic (look like) twigs, grass, parts of flowers, tree barks and even ants! In fact, the young (juvenile/nymph) stages of many mantis species resemble different species of ants. This potentially helps them escape being found and eaten by their predators when they are still not ready to fight and defend themselves.

Look out for their triangle-shaped head (that they can turn 180 degrees!), large patterned eyes and comical, quizzical stares when you come across one.

LAKE HEALTH INDEX

Project runtime: Jun 2020 - Ongoing
Contact: Ramprasad V *(friendsoflakes@gmail.com)*

This project focuses on driving lake health into the conscience of the citizens and the stakeholders using data driven citizen program that will engage them directly by giving them the tools required to make the observations (pH, TDS, P, N etc.) The final output was the creation of a tool or a portal which anyone can use to gain knowledge of the lake surrounding them and give guidance on the steps necessary for maintaining sustainability.

The findings of this study suggest that educational apps can be effective in increasing knowledge and awareness about lake water quality, providing a convenient and accessible way to disseminate information. By equipping individuals with knowledge and awareness, educational apps have the potential to contribute to the conservation and protection of lakes, ultimately leading to better water quality and a more sustainable future for our freshwater resources.

A website and a mobile application is built to be used by the citizens, stakeholders and enthusiasts.

Image credit: Friends of lakes

WATER QUALITY CRITERIA

Project runtime: Jun 2020 - Ongoing

Contact: Annapurna Kamath *(jalaposhan@gmail.com)*
Sumita Bhattacharyya, ATREE *(sumita.bhattacharyya@atree.org)*

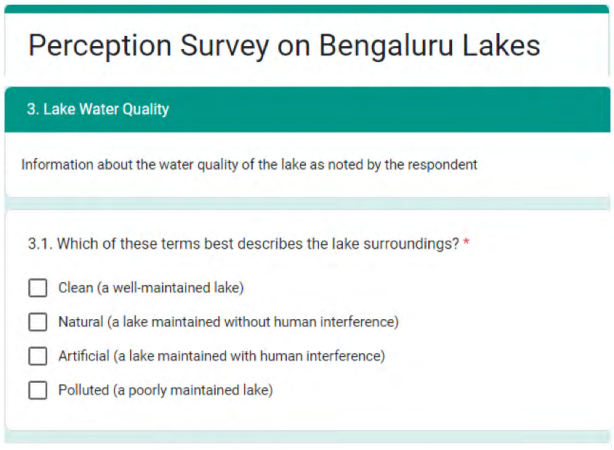
The project was designed to establish a working definition of clean and healthy urban lakes, with corresponding water quality criteria and targets, to ensure the sustainability of community needs and urban biodiversity.

This project is collaborating with the Lake Health Index (LHI) project through data exchange. The water chemistry data collected by the LHI survey (Primary users) can be indicative sample collection location for the Pro Users or researchers for robust accurate sampling for water quality analysis. The water quality, bioindicator and lake water quality perception data collected by WQC in turn can be fed back to LHI for recalibrating the weightage given to the indicative parameters in LHI. This would help in creating a more accurate and robust dynamic lake health index. LHI's awareness and converting of Primary users to Pro user with a better understanding of lake health can aid to have more inclusive discussions and approaches to lake management

The final deliverables of the project were the Water Quality Criteria (WQC) for urban lakes for different lake uses and a list of bioindicators for lake water quality monitoring by local lake stakeholders such as lake groups.

The data required for preparing these have been collected and are being analyzed and the insights are being synthesized. Following this, there will be discussions and workshops with the lake groups to further improve and modify the documents generated. Subsequently, the documents will be shared with the lake groups and the government agencies to further development and modification.

Water sample collection at Agrahara Lake; Photo credits: Rashmi Kulranjan



Screen shots of the lake water quality perception survey

AIR QUALITY MONITOR

Project runtime: Dec 2021 - Ongoing
Contact: Gautam, Reap Benefit *(gautamp@reapbenefit.org)*

Currently, air quality monitoring is an expensive government initiative, data from which is not available to the general public in real-time. The objective of this project is to provide easily accessible, comprehensive, and real-time air quality data via cost-effecttive means. The air quality data will be made easily accessible through Reap Benefit's website and web application, such that communities can monitor it and take required action. The data will be comprehensive and real-time as it will be collected by a large network of moving cabs, which will have GPS and Wi-Fi enabled monitoring devices. Currently, the devices cost Rs. 5000 (without power source and GPS), which is very cost-eective when compared to the current expenditure on air quality monitoring stations.

Using this data, there will be civic-engagement drives, to make communities understand the importance of air quality, and push them towards working on improving the locality's air quality. The data will also be used to hold government authorities accountable, and help them in their eorts to monitor and improve air quality.
2 types of devices have been built so far:

1. Portable AQMs - Raspberry pi based AQMs, which could constantly log the values on their internal SD card. These were reliable to record data on SD cards, but there were issues syncing the offline data to a remote server. These paired with the -

2. Fixed AQMs - NodeMCU based AQMs
- ESP8266 is a single core wifi enabled microcontroller – this has been most reliable in transmitting data. However, it struggles to reconnect on power outages without help
- ESP32 – dual core wifi and Bluetooth enabled microcontroller – this is a new variant and is being tested to improve its reliability. The data was being pushed to a google sheet to make it more accessible to users who would want to analyse it.

One on One engagement by the volunteers in the early days to build confidence about their knowledge and to understand what kind of questions they could anticipate; Photo credits: Reap Benefit

Latest iteration of the oine AQM designed to engage viewers - All components are visible to indicate the simplicity and to focus on the Dust Sensor, and speak about its accuracy

GROUNDS FOR CHANGE

Project runtime: Aug 2021 - Ongoing
Contact: Arshiya Urveeja Bose *(arshiyabose@gmail.com)*
Babitha George, Quicksand *(babitha@quicksand.co.in)*

The project aimed to transform the way traceability and connections between coffee producers and consumers were perceived, with a focus on valuing both people and nature. There were specific objectives to guide towards this overarching goal, including the development of an interactive traceability platform that would map and showcase the origin stories of coffee.

The aim was to highlight the importance of biodiversity and the daily experiences of smallholder producers, shifting the narrative towards ecological sustainability and farmer livelihoods.

Photo credits: Arshiya Bose

Facilitation of dialogue and interactions between coffee producers and consumers regarding sustainability in coffee value chains through pop-up events across Bangalore were held. Since access and use of internet-based platforms could be limited, it was designed as an offline version of the coffee story to be showcased as pop-up events across Bangalore city.

A survey was conducted to identify potential solutions for traceability platforms, including existing solutions, gaps in the market, and potential challenges. The survey aimed to gain insights into consumer preferences, industry standards, and legal requirements, which informed the features and functionality of the platform. By seeking to understand the pros and cons of existing traceability platforms, informed decisions were made on how to develop an effective and sustainable solution that met the needs of all stakeholders involved

A survey was successfully carried out with 800 coffee drinkers across Bangalore. This online survey prompted consumers to reflect about shared values and concerns, such as changing climate, increasing coffee prices, global market changes, vulnerabilities of smallholder farmers and so on. The results provided an insight into values and willingness to pay for certain physical and symbolic qualities in coffees, all which are valuable for planning sustainability mechanisms across the value chain.

The project is in the final stages of uploading a communication platform that allows coffee drinkers to engage with the complexities and behind-the-scenes process.

CIVIC CROWD SOURCING

Project runtime: Aug 2021 - Ongoing
Contact: Gautam, Reap Benefit *(gautamp@reapbenefit.org)*

Decisions made for public good are often taken by representatives, governments, scholars or policy makers. If the actual stakeholders- the public- are involved, then this will result in more substantial outcomes. The Reap Benefit chatbot aims to leverage civic engagement for this purpose. The Chatbot was used as a means for citizens to instantaneously report potholes and damaged footpaths. A whopping 1,000 responses were recorded in a span of 2 weeks. We aimed to, through this project, expand the framework of the Chatbot to include issues other than potholes e.g. garbage spots, broken urinals, broken street lights etc.

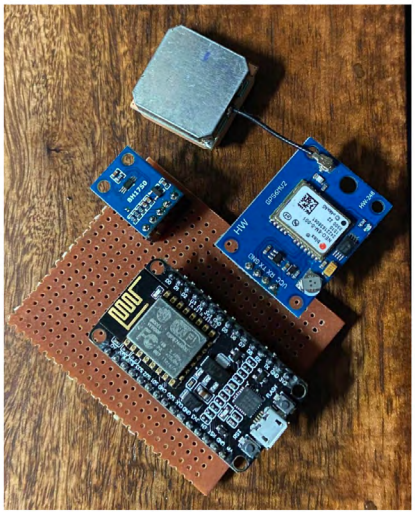
After starting work on the project, in order to reduce friction for citizens to contribute information, the information being collected was broken up into 3 key parameters - Location, Description and Media.

An IOT device with buttons and a GPS module was leveraged to make data capture easy. Once the device was powered on, the press of a button sent the location with a time stamp and string pre-programmed for the button to a google sheet to allow easy mapping or analysis. The MLA of Shivajinagar was interested in trying this as an experiment to not only engage students in his constituency but also capture local issues easily. This was tried out in a Ward.

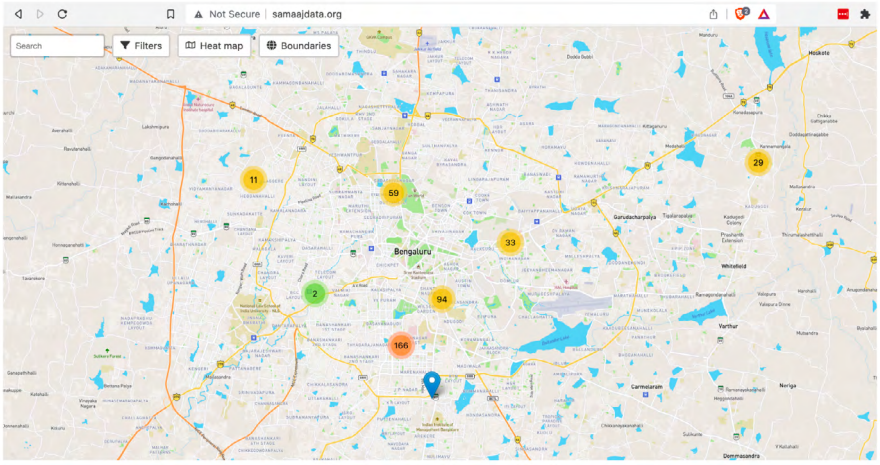
Based on investigation, the most critical information was location, and the solution approach was changed from tackling images to working on location related challenges.

A total of 1,20,000 data points have gotten enriched using this system. The largest being stubble burning data (100k+ data points) from Lat-Long to blocks and Grama Panchayaths in Punjab. Users from more than 20 cities have been using this system.

This system can be used by any partner in the BSF network. Please email info@reapbenefit.org for more details.

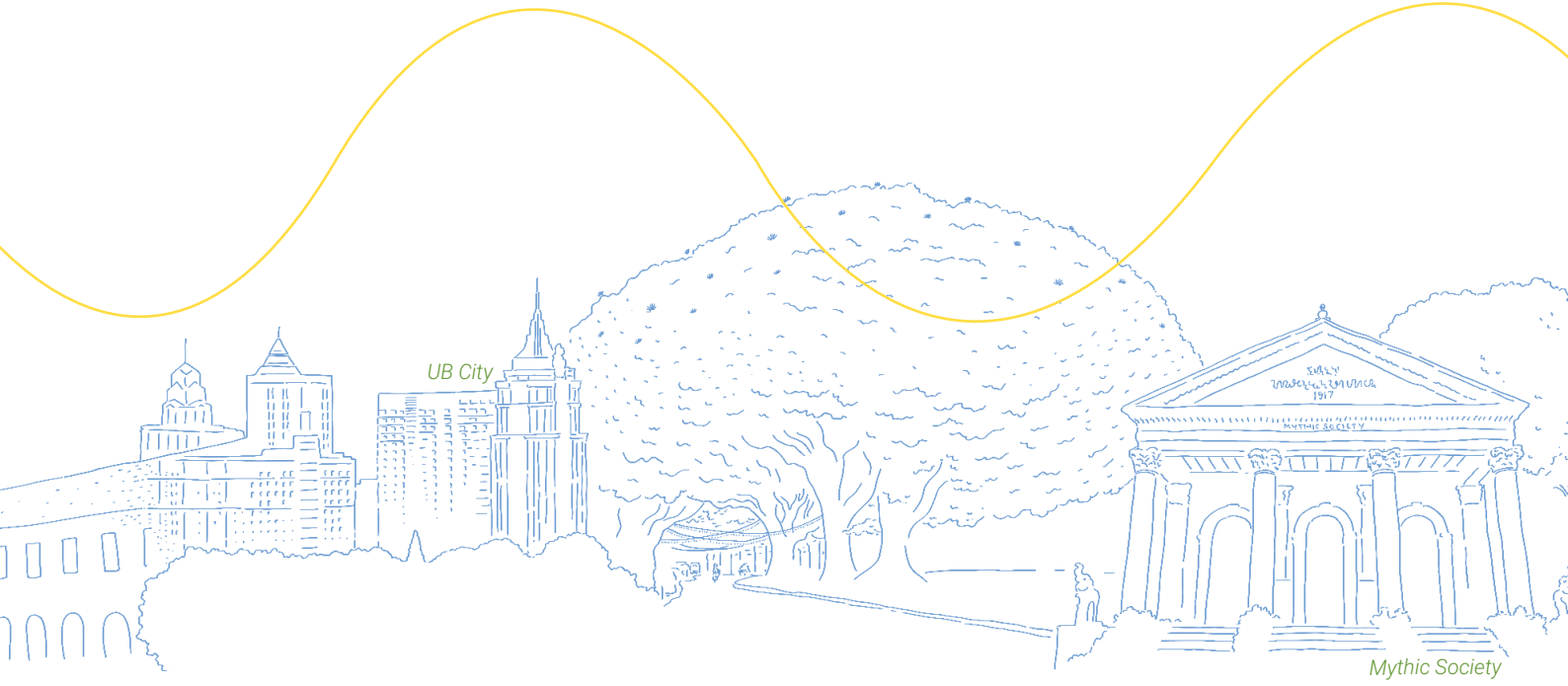


IOT Device; Photo credits: Reap Benefit



Location data points; Photo credits: Reap Benefit

EVENTS



CARBON SUMMER SCHOOL

June 2022

In collaboration with

SCIENCE GALLERY

In the run up to SGB's upcoming exhibition-season CARBON, they hosted a four week, residential Summer School exploring the role of carbon in the Anthropocene.

Our SGP grantees took the participants on field visits around their project sites as part of the summer school.

Puttenahalli Lake walk

Lake Health Index

This seminar and field visit was conducted by V Ramprasad, the convenor of this project at Puttenahalli lake in Yelahanka.

Urban edible Greens walk with Suresh

Sarjapura Curries

Suresh Kumar, the founder of Sarjapura Curries, facilitated a session on urban greens and communicated its importance in our current ways of living.

Samuha Suresh
Sarjapura Curries

Workshop and drain walk by Pinky and Nalini
Photo credits: Science Gallery Bengaluru

As the Drain Goes

Pinky and Nalini (Hasiru Dala) conducted a workshop and took the participants on a drain walk. There was also a small photo exhibition describing the project.

@pinkychandran
@shekar_nalini

@pinky.chandran
@nalini.sekar3

AVENUE TREES: TEACHER'S WORKSHOP

In collaboration with

ecoedu

Azim Premji Foundation

27th Aug 2022

Srinivasa and Karthikeyan presented their book Field guide to common Avenue Trees and took the teachers on a tree walk; Photo credits: BSF

Naturalists Kartikeyan S. and Srinivasa T.S. who published the Field guide to common Avenue Trees book in Kannada as part of the Small Grants Programme, conducted a workshop with teachers in the Azim Premji Foundation network on how the guide can be used in school and educating students on trees around their neighbourhood.

The teachers at the workshop have taken the books to their school to use in their classes. They have gotten back to us with doubts and queries in identifying trees, while teaching their students how to use the book.

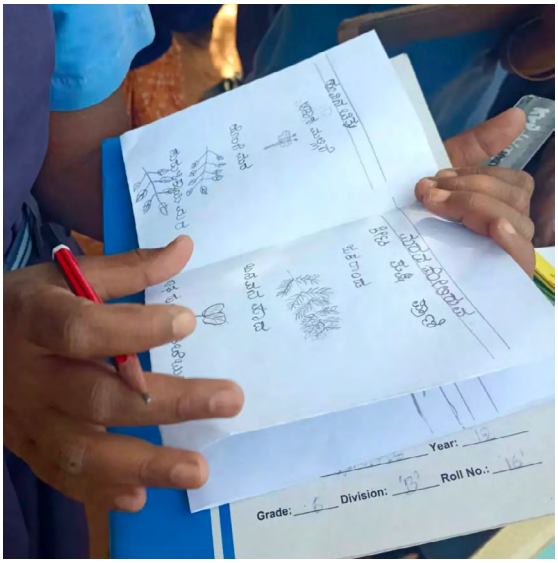


Photo credits: Teachers from the workshop

BLR DESIGN WEEK

Nov - Dec 2022

In collaboration with

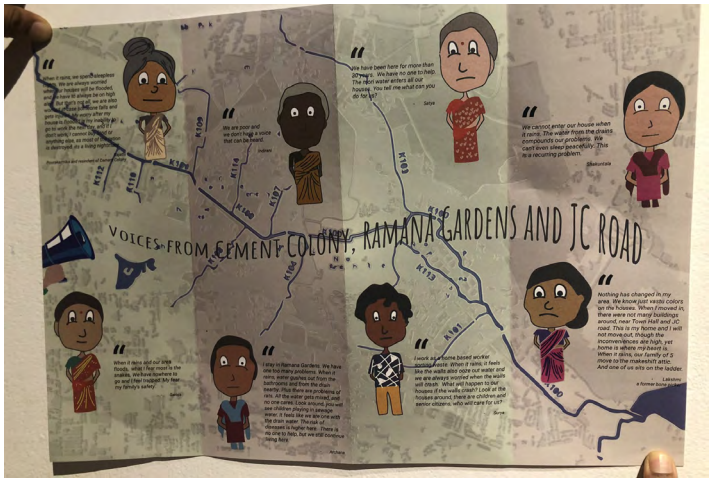


Photo credits: Girish Balachandran via Twitter

As the drain goes: Communicating for Ecological Research around storm water drains

A drain tour was organized around the K100 storm water drain. The tour centered around waste and our relationship with it.

Pinky Chandran also announced the launch of her book As the Drain Goes: A collection of poems influenced by the storm water drains in Bengaluru at 1Shanthi Road along with a photo exhibition.

Photo credits: Bird board game project team

Bird Board Game

The project team hosted a co-creation workshop about visual identity and packaging for their upcoming board game at the Bangalore Design Week. A lot of passers-by at the Metro station joined in to attend the workshop.

Photo credits: Arshiya Bose

Grounds for Change

Arshiya Bose and her team hosted a sincere conversation between coffee growers and coffee consumers - one that aimed to mov beyond the farm-to-cup narrative.

YUGAANTAR FESTIVAL

24 - 26 Dec 2022

In collaboration with

Bhoomi College

Hosted and organized by Bhoomi college, the Yugaantar festival had 60+ diverse workshops by practitioners, artists and educators on sustainability, education, music and wellbeing.

Two of our SGP grantees participated:

As the drain goes

Pinky Chandran held a discussion on storm water drains at the Bhoomi Yugaantar Festival and exhibited a few photos and a virtual drain walk for the participants.

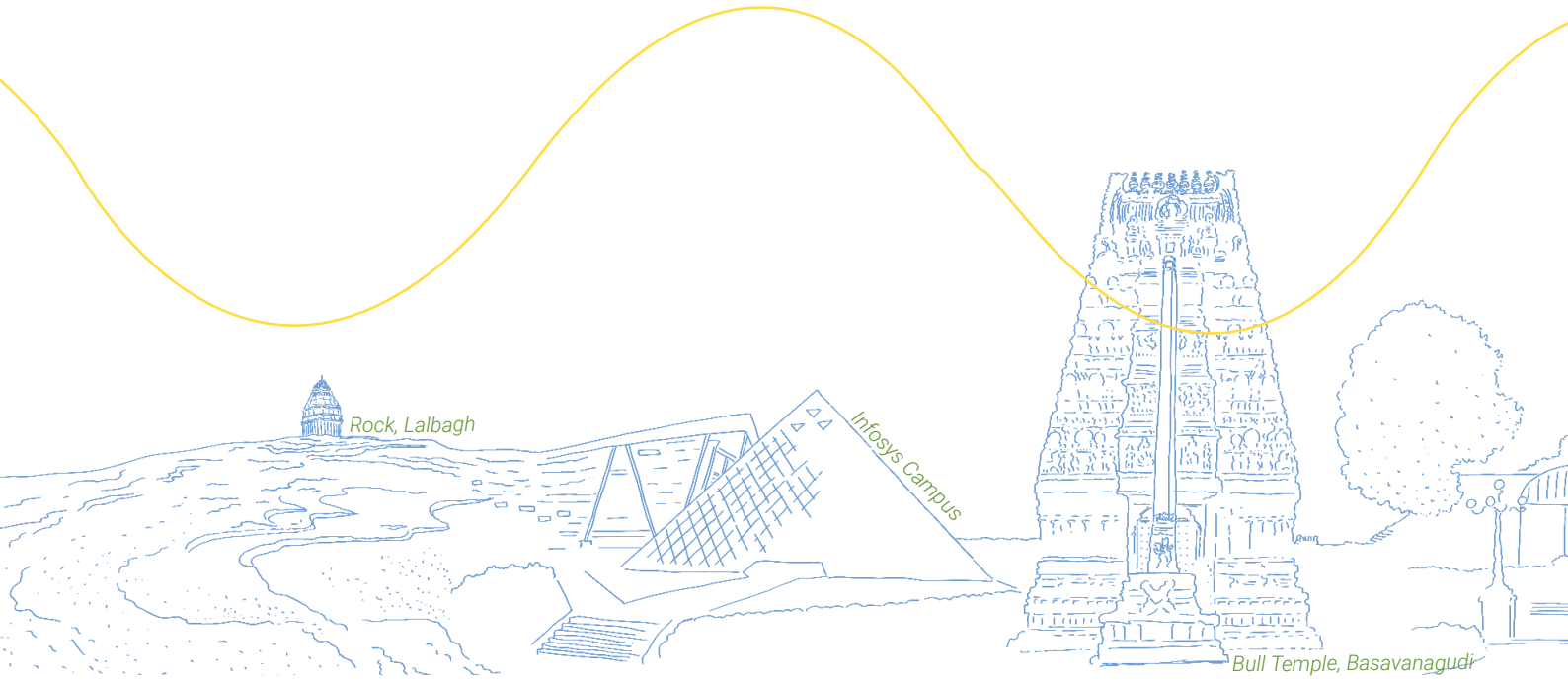
Pinky Chandran with the participants;
Photo credits: Pinky Chandran

City Game

Karthik Natarajan from Fields of View organized the City game for interested participants at the festival. It explores each participant's choices in building and shaping a city.

Photo credits: Bhoomi College

PUBLICATIONS



THERE'S NOTHING THERE

In collaboration with

Nature Classroom | nature conservation foundation | science for conservation

Maadhyama Aneka
ಮಾಧ್ಯಮ ಅನೇಕ

Project runtime: May 2020- Mar 2023

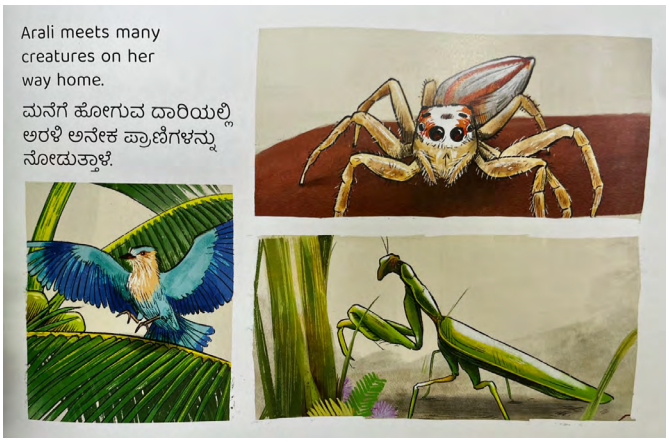
Contact: Roshni Ravi, NCF *(roshniravi@ncf-india.org)*
Jane Sahi, NCF *(janehelensahi@ncf-india.org)*
Vena Kapoor, NCF *(vena@ncf-india.org)*

The final resource of Suttha Muttha was conceptualised in the form of a picture book that highlights biodiversity in a rapidly changing and dynamic peri-urban landscape. It is a bilingual picture book titled "There's Nothing There!"/ "ಅಲ್ಲಿ ಏನೂ ಇಲ್ಲಿ !" The book was illustrated and designed by artist Karunya Baskar.

The illustrations are intricate and centre around the flora and fauna that can often be spotted in and around the school. Wayside plants like the Giant Milkweed, Castor and Thumbe gida can be found amongst the pages and so can common trees like Jamun, Cluster Fig and Gulmohar. Encounters with many creatures are woven into the story – from spiders and insects to birds like the Indian Roller (the state bird of Karnataka) which are common in the area. The book draws from children's experiences, conversations and art work and the attempt has been to capture the local environment, familiar paths and scenes through the illustrations.

In the coming months, there are plans to engage children in and around Silvepura and Tarabanahalli through read alouds, walks, observation activities using the book.

Photos from the book "There's Nothing There!"/ "ಅಲ್ಲಿ ಏನೂ ಇಲ್ಲಿ !"



All resources created under the Suttha Muttha project are open source and digital copies will be uploaded on the Nature Classrooms website.

THE LIVING MUSEUM

In collaboration with

Project runtime: *May 2020- Oct 2022*

Contact: Anisha Jayadevan *(anisha.jayadevan@gmail.com)*
Manini Bansal (maninibansal107701@gmail.com)

The Living Museum book imagines nature in cities as though it were a living museum. It depicts the diverse species in our environment. The jumping spider is the guide and through the course of the book, takes the reader along to understand what critters live in our backyards, our living rooms, the compost and the pavement. An exciting resource for children and adults alike, this book is made by a team of young women with rich knowledge on urban ecology and is paired with fascinating illustrations by Sunaina Coelho.

The book was published as part of BSF's Small Grants Programme, by the Foundation for Ecological Research, Advocacy and Learning with additional support from the Nagarathna Memorial Grant.

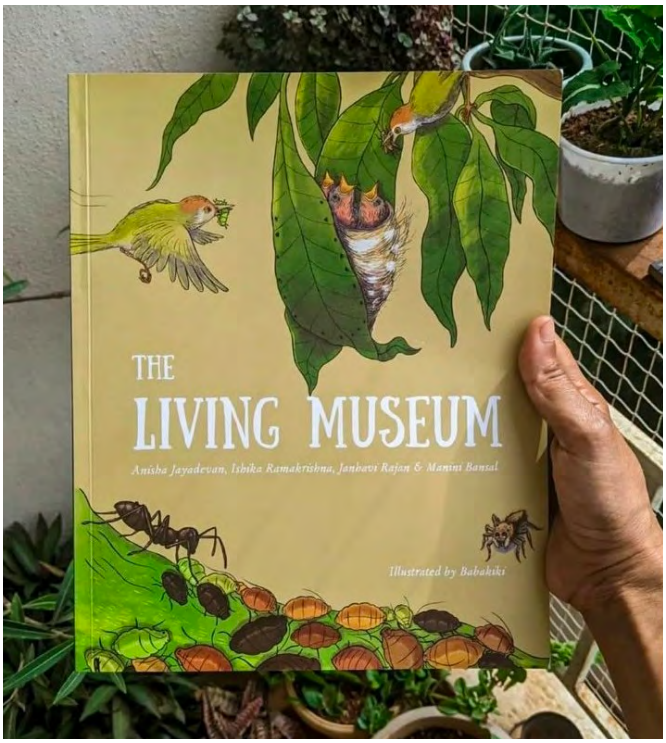


Photo credits: Cafe Oikos

Students browsing through the Living Museum at the Global Science Film Festival at Swissnex; Photo credits: BSF

Manasi with Ishika Ramakrishna, co-author of the Living Museum; Photo credits: BSF

NAMMA OORU NAMMA NEERU

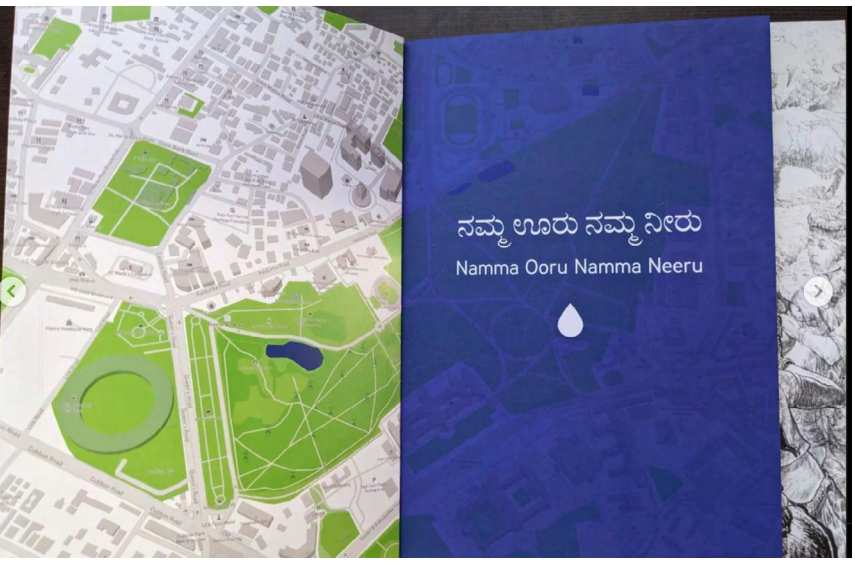
In collaboration with

ART IN TRANSIT ಆರ್ಟ್ ಇನ್ ಟ್ರಾನ್ಸಿಟ್

biome

Project runtime: *Apr 2019 - Sep 2022*

Contact: Shubha Ramachandran, BIOME *(shubha@biome-solutions.com)*
Arzu Mistry, Art in Transit *(arzu@srishti.ac.in)*



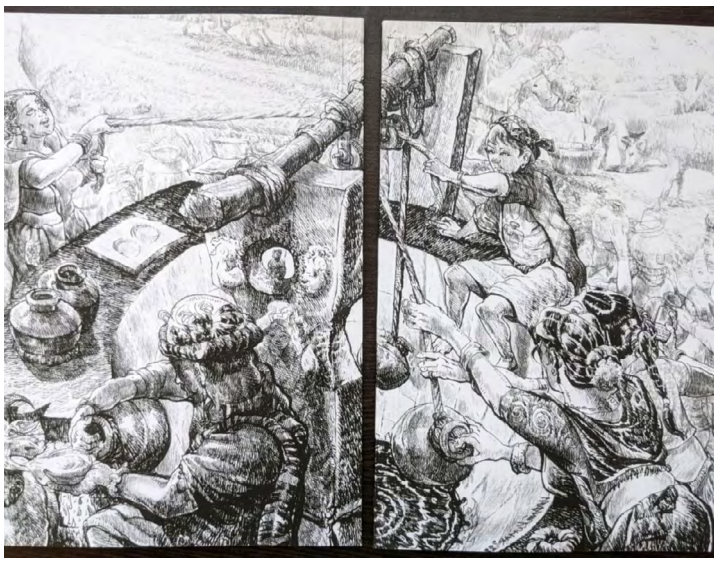
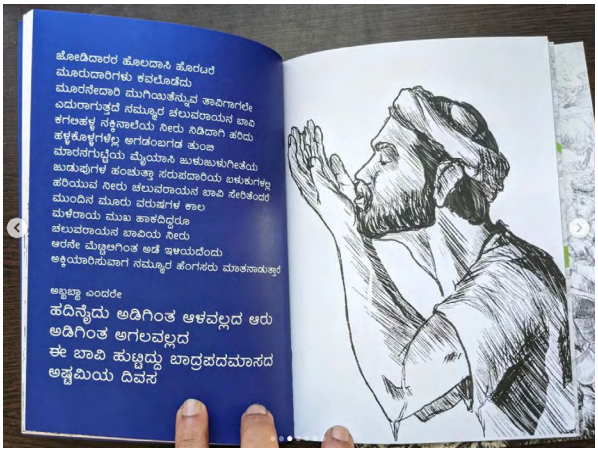


Photo credits: Art in Transit

The project started with a mud mural at the Cubbon Park Metro station. Art in Transit and BIOME organized the completion of the mural and a celebration of the project with an evening of poetry, behind the scenes of the earth mural and conversations with the well diggers virtually.

The book on the project has been released with poems by Mamta Sagar, Chand Pasha, Siddhartha, Reshma Ramesh, Dadapeer Jyman and Shashank Johri. It also features an accordion book of the images of the 150 foot long Mud Mural made as part of the project.

The Mural accordion book; Photo credits: Art in Transit



AS THE DRAIN GOES

In collaboration with

CITIZEN MATTERS

Project runtime: *Aug 2021 - Dec 2022*
Contact: Pinky Chandran *(pinky.chandran@gmail.com)*
Nalini Shekar, *Hasiru Dala (nalinipalyam1@gmail.com)*

One of the outcomes of the project which used mixed media as a tool for engagement, is a book of poems influenced by Bengaluru's storm water drains.

Pinky Chandran at the book launch; Photo credits: Girish Balachandran via Twitter

Pinky Chandran launched the book at Bengaluru at 1Shanthi Road as part of BLR Design week. She also shared her poems from 'As The Drain Goes' at the recent Stories of Water held at the Bangalore Creative Circus.

The book was also on display at the Global Science Film Festival organized by Swissnex.

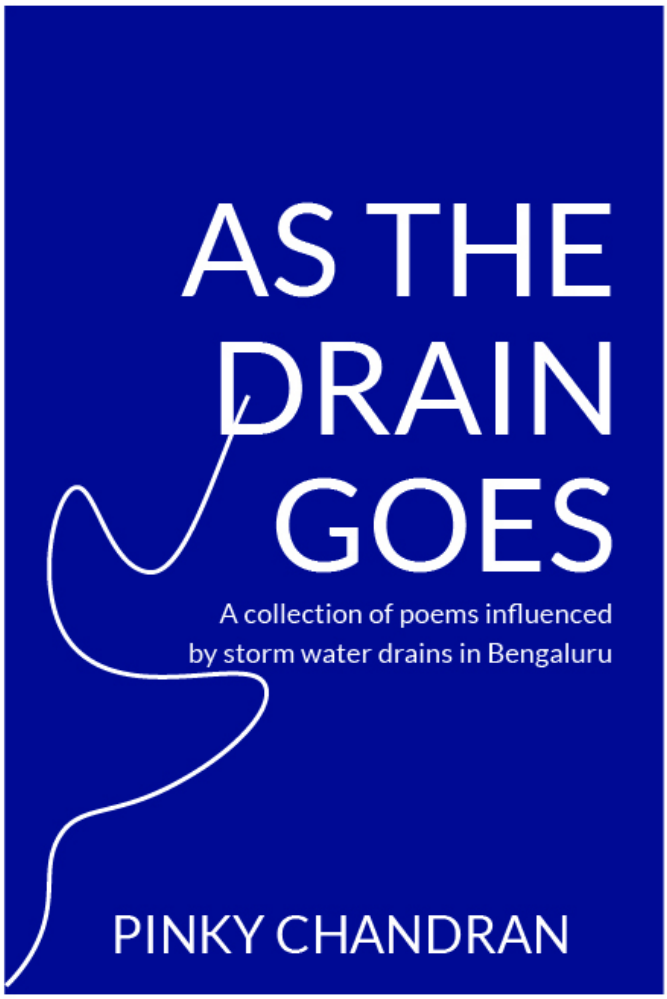


Photo credits: Pinky Chandran

LIST OF COMPLETED PROJECTS

URBAN BIODIVERSITY

1. Elephants on the Zebracrossing
2. Sarjapura Curries
3. Pocket guide on common avenue trees in Kannada
4. Know Your Urban Wildlife
5. The Why and how of Bengaluru's Biodiveristy
6. Ocean On A Plate

URBAN CLIMATE CHANGE

7.Climate Change stories from Bengaluru

URBAN WATER

8. STRAINs
9. Namma Ooru, Namma Neeru
10. Understanding Wetland Instrumentality and Dead zone at Jakkur lake
11. Nature's Gurukul
12. Jakkur Community gardens
13. Jakkur Citizen Science Project
14. Project Hanigalu - Participatory Planning for Water Security
15. Integrated Urban Water management at the ward level
16. Sowl Kere: Sustainable Treated Water Feed Project
17. Efficient management and value addition from water hyacinth in Jakkur Lake

URBAN WASTE MANAGEMENT

18. Zero Waste Wards
19. As the Drain Goes

OUTREACH

GLOBAL SCIENCE FILM FESTIVAL

March 31 2023

In collaboration with

swissnex

The event started with the screening of a captivating animated short film titled 'Autosaurus'. This was followed by the main screening of "Into the Glacier" followed by a global panel discussion. The film was screened simultaneously at six venues. One each in China, Japan and Switzerland and three in India. The global panel discussion featured Dr. Anil Kumar, Climate Scientist from IISc. The evening ended with an apero/high tea where all the invitees and panelists engaged in conversations.

BSF also put up the publications from the Small Grants Programme on display for the various participants at the event.

A scene from 'Into the Glacier'; Photo credits: Swissnex Bangalore

In conversation with Dr. Anil Kumar; Photo credits: Swissnex Bangalore

GLOBAL WE PROGRAMME

With SGB, UN Live and Shared spaces

In collaboration with

SCIENCE GALLERY

December 15-16 2022
March and April 2023

Photo credits: Science Gallery Bengaluru

Global We uses the power of portal studios. In its simplest form, portals are repurposed shipping containers that are equipped with large screens and high-quality audio to create immersive experiences, where participants can move freely around the room and have eye-to-eye empathetic conversation across borders.

The program was launched in the Climate Week at COP 27 in Sharm El Sheik, Egypt and has 19 portals connecting from across the world. Since the launch of the programme, there have been numerous conversations with experts across disciplines and organised cultural programmes of various formats such as rap battles and performances by artists in the city. When the programme was extended in March, Bengaluru Sustainability Forum was brought on board as a Community Engagement Partner, and we identified experts working on climate within our network.

BSF has brought over 50 practitioners across fields of water, waste/recycling, food, literature and planning, to add to the discussions around climate action.

OORU

Bengaluru's sustainability podcast

In collaboration with
vaaka

Listen to all the episodes of the series here and subscribe to us on your podcast apps!

Ooru explores questions on the city's planning, infrastructure, food and lifestyle through conversations with diverse stakeholders - communities, projects, institutions and people working on the ground to help Bengaluru move towards a more sustainable future. The 5 episode series was released over the 5 weeks of September.

1

Bengaluru has struggled to keep apace with its rapid growth which has taken a toll on the city, its resources and human and non-human inhabitants. Despite funding to repair roads, build flyovers and metros and fix water supplies all accompanied by promises to make Bengaluru another Singapore, to some the city seems to be coming apart at the seams. In the first episode of Ooru we speak to urban planners, water experts, and those who live in and love this city to find out 'What Should Bengaluru Look Like?'

2

For a city supposedly named after a story about boiled beans, Bengaluru is very much a great food city. But as the city's population grows to embrace people from all over the country, how are the old ways of eating changing? Do all Bengalureans have access to the city's produce? Listen to a food entrepreneur, a farmer, a public health expert and a Bengalurean who loves to run for his thindi answer the question 'What does Bengaluru eat?'

3

Bengaluru once prided itself on being the Garden City, but with more green covers sacrificed for chrome and glass buildings and steel flyovers, how much of the outdoors is left for citizens to enjoy? Despite an active citizenry and comparatively high civic participation, there are challenges in bringing about widespread change. We hear from people who have worked to nurture an interest in the city's biodiversity, make the city's parks more accessible, get citizens to spend more time outdoors, and improve accessibility to public space.

4

For many, Bengaluru is a city of dreams, drawing people from across the country who are in search of better jobs and a better life. But what's the reality of a worker in this city? Is Bengaluru really a good place to work in? Who is it good for? What does good even look like? Easy and safe commutes? Affordable housing? We search for answers through conversations with political activists, senior IAS officers, the head of an ecological restoration foundation and some of the youth in Bengaluru.

5

In this final episode of Ooru, we're asking, what's the future looking like? Listen to answers from a lawyer, an environmental activist, a water expert and a group of young citizen activists trying to measure just how polluted the air we breathe is. In the final episode of Ooru, listen to answers from a lawyer, an environmental activist, a water expert and a group of young citizen activists trying to measure just how polluted the air we breathe is.

STEERING COMMITTEE

Over the last year, we have welcomed new members into our steering committee and our team at BSF. We would like to welcome Shashidhara L.S and Jagdish Krishnaswamy to the BSF steering committee.

Jahnavi Phalkey
Science Gallery, Bengaluru

Jahnavi Phalkey is a filmmaker and historian of science and technology by training. Jahnavi is also the Founding Director of Science Gallery Bengaluru. Jahnavi has authored Atomic State: Big Science in Twentieth Century India and is director of the documentary film Cyclotron.

Jagdish Krishnaswamy
IIHS, Bengaluru

Jagdish Krishnaswamy has a B.Tech in Civil Engineering from Indian Institute of Technology (IIT), Powai, Mumbai and a Master's degree in Statistics and Decision Sciences and a PhD in Environmental science, both from Duke University, North Carolina, USA. He is a field ecohydrologist and a landscape ecologist. He was the Coordinating Lead Author of the Special IPCC Report on Climate Change and Land. He is the Dean, School of Environment and Sustainability at the Indian Institute for Human Settlements, Bengaluru.

L.S Shashidhara
NCBS, Bengaluru

L.S Shashidhara specializes in Genetics, Molecular Biology and Evolutionary biology. He is currently the Director of the National Centre for Biological Sciences (NCBS), TIFR, Bangalore. Prof Shashidhara is one of the founding academic members of IISER Pune and Ashoka University, contributing to their growth. In addition, he has contributed to the Pune Knowledge Cluster, a consortium to promote multi-disciplinary collaborative work to address problems of health, water, environment and sustainable mobility. He has also been very involved in the promotion of science and science education.

Mahesh Sankaran
NCBS, Bengaluru

Mahesh Sankaran is an ecologist whose research interests lie in understanding the impacts of global climatic changes on the structure, functioning and stability of ecosystems. He was the coordinating lead author on the IPBES Land Degradation & Restoration Assessment and a review-editor for the IPCC special report on land.

P.S Narayan
Wipro Ltd., Bengaluru

P.S. Narayan is the Head of Sustainability at Wipro Ltd, and the Managing Trustee & Head of Wipro Foundation, the CSR arm of Wipro Ltd. A graduate in Electrical Engineering with a post - graduation in management, Narayan has more than twenty five years of cross- functional experience. He has led Wipro's Sustainability initiatives since its inception in 2008. Narayan is Visiting Faculty at Azim Premji University and Xavier University, Bhubaneswar where he teaches post-graduate classes in ecology and sustainable development.

Satyajit Mayor
NCBS, Bengaluru

Prof. Satyajit Mayor is an Indian cell biologist. Prof. Mayor has an M.Sc. in Chemistry from IIT Bombay, and obtained his Ph.D. in Life Sciences from Rockefeller University, New York. He has worked in the Department of Pathology at Columbia University before returning to India in 1995 to join the NCBS in Bangalore.

Seema Mundoli
APU, Bengaluru

Seema Mundoli is a faculty at Azim Premji University. Her research focuses on the role of nature in Indian cities in addressing the challenges of environmental sustainability and social justice. Her recent co-authored books (with Harini Nagendra) include, "Cities and Canopies: Trees in Indian Cities" (Penguin India) and "So many leaves" (Pratham Books)

S. Vishwanath
Biome Environmental Trust, Bengaluru

S. Vishwanath is a Civil Engineer and an Urban Planner. He is a Trustee with the Biome Environmental Trust. He has 32 years of experience in the water, waste-water and sanitation sector helping design rainwater harvesting, aquifer recharge, wastewater recycling and ecosan systems. He is an Adjunct Professor and teaches a course on Water at the Azim Premji University, Bengaluru, India. He writes a weekly column called Waterwise for the last 11 years and more in a national newspaper-The Hindu.

Tejal Kanitkar
NIAS, Bengaluru

Tejal Kanitkar is an Associate Professor in the School of Natural Sciences and Engineering at the National Institute of Advanced Studies, Bengaluru. She has worked in the area of Energy and Climate Change for the last 15 years. She has a B.Tech in Mechanical Engineering from Mumbai University, A Master's in Mechanical Engineering from the University of Massachusetts, Amherst, and a Ph.D. from the Department of Energy Science and Engineering, IIT-Bombay. Her work covers the broad areas of energy and emissions modelling, climate policy, and energy policy.

Uma Ramakrishnan
NCBS, Bengaluru

Uma Ramakrishnan is an associate professor at NCBS interested in molecular ecology and conservation genetics. Her work involves using genetic and genomic data to make inferences about populations of endangered species, and suggest measures to avoid extinction. She also investigates the ecological and evolutionary contexts of emerging infectious disease. She is passionate about science communication and science capacity building.

WIPRO ANCHORS

Dinni Lingaraj
Wipro Ltd., Bengaluru

Dinni has been anchoring various sustainability programs for Wipro over the last 11 years. He was closely involved in the design and implementation of sustainability disclosures, climate risk assessments, campus biodiversity and programs with human resources and procurement . A program that he was involved with since the beginning - Wipro earthian, a national sustainability education program - has reached out to hundreds of schools and colleges over the past few years. He is also involved in community projects and is currently also anchoring the urban ecology program. He represents Wipro in key industry forums related to climate change, net zero transition and sustainability.

Nakul Mohan Heble
Wipro Ltd.,
Bengaluru

Nakul is an urban water professional currently helping communities, organisations and individuals secure funding to conserve and protect resources as well as adapt to a rapidly changing climate. In his previous role, he has worked as a researcher on climate and urban water policy and environmental regulation

COORDINATORS

Manasi Pingle

Manasi Pingle is a filmmaker by training. After graduating from the Xaviers Institute of Communications, she worked in the television and film industry in Mumbai. She has directed and produced 2 documentaries on work done by peoples' movements. As a part of BSF she looks forward to working towards just, equitable and sustainable urban development.

Namrata Narendra

Namrata is an architect and researcher from Bangalore. Her practice explored ways to activate and improve the built environment alongside underserved communities. Her research revolves around water, infrastructure and urban socio-spatial governance. Namrata is a runner and avid cyclist, exploring cities by foot and pedal. At BSF, she hopes to advocate for sustainable practices in urban planning and development.

SOCIAL MEDIA AND COMMUNICATIONS

Mukund Krishna Kumar

Mukund Krishna Kumar is a communications professional with a background in development studies. His interests include people-facing research, governance and urban sustainability. At BSF, he hopes to bridge the gap between sustainability solutions and the individuals they impact, creating a more inclusive and equitable future.

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