BBMP

Bengaluru CLIMATE ACTION & RESILIENCE PLAN | Climate Action Cell

MAPATHON GUIDEBOOK

Step-by-Step Process to Identify Open Spaces for Planting

Supported by Cities4Forests

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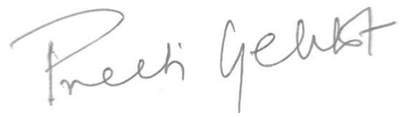
FOREWORD

In our ongoing journey toward sustainable urban development, the importance of community involvement cannot be overstated. Under the auspices of the Bengaluru Climate Action Cell and as a member of Cities4Forests, we successfully conducted a community-led greening initiative called “Mapathon.” This project harnessed digital technology and engaged local citizens to identify underutilized urban spaces suitable for planting. I extend my gratitude to WRI India for their invaluable support as our knowledge partner in this effort. Through collaborative initiatives, we created a comprehensive repository of potential planting sites, which are now poised for site verification and subsequent greening efforts.

The Bengaluru Climate Action and Resilience Plan (BCAP) has identified five climate and environmental hazards for the city, including urban heat and urban flooding. As Bengaluru faces these growing challenges- it is essential for citizens to unite in safeguarding our environment. The impacts of climate change on our city necessitate proactive measures, and community-led initiatives like Mapathon can significantly enhance our climate resilience. By coming together to implement the #BluGreenUru initiative, we can transform our urban landscape and make it more sustainable. This guidebook serves as a practical tool for Resident Welfare Associations (RWAs) and engaged citizens looking to conduct their own Mapathon. It provides a step-by-step process designed to empower individuals to identify and transform neglected urban spaces in their neighborhoods. To scale this initiative further, we have developed a virtual Mapathon hosted on our webpage, enabling citizens to identify potential planting sites from the comfort of their homes. I urge everyone to take part in this initiative, as collective action is vital for building a resilient future for our city. Together, we can foster a greener Bengaluru for generations to come.

Let us step forward, mobilize our communities, and make a tangible difference to our environment. Your participation is crucial to this endeavor, and I encourage each one of you to get involved. It should help all countries integrate climate into their country partnership frameworks to ensure that climate-smart policies inform future



Ms. Preeti Gehlot IAS
Spl.Commissioner (FECCM), BBMP
Chairperson, Bengaluru Climate Action Cell

SECTION-02

ACKNOWLEDGEMENTS

We extend our heartfelt gratitude to all those who contributed to the successful creation of the Mapathon Guidebook. This collaborative effort would not have been possible without the unwavering support, guidance, and expertise of numerous individuals and organizations.From the Bruhat Bengaluru Mahanagara Palike (BBMP), we express our sincere appreciation to:

- **Ms. Preeti Gehlot**, IAS, Special Commissioner of Forest, Ecology, and Climate Change Management (FECCM), and Chairperson of the Bengaluru Climate Action Cell (CAC), for her visionary leadership and continuous encouragement.
- **Mr. Vijaykumar Haridas,** Chief Engineer of Lakes, for his invaluable insights and support throughout the process.
- **Mr. B.L.G. Swamy**, Deputy Conservator of Forests, for his guidance in aligning the project with ecological priorities.
- **Mr. Chandrasekha**r, Deputy Director of Horticulture, for his contributions to enhancing green spaces.
- **Mr. Narendra Babu,** Range Forest Officer (RFO), for his on-ground expertise and dedication to fostering urban greening efforts.

We are deeply grateful to the WRI India (Cities-Urban development) team for their role as knowledge partners, offering critical support and resources throughout the development of this guidebook:

- **Arun Manohar,** Senior Program Associate
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- **Iranna Koppad,** Junior Program Associate
- **Zair Belgami,** Project Associate
- **Rama Thoopal,** Program Head
- **Safia Zahid,** Communications Manager
- **Arundhati Sen,** Program Communications Associate
- **Shanmugam Darjibrother,** Senior Program Associate (IT and Operations)

We acknowledge their significant contributions in developing the content, proofreading, designing, and refining the guidebook to ensure clarity and accessibility for all users.

Finally, we thank all the community members, experts, and stakeholders who participated in the Mapathon activities, offering their time, knowledge and enthusiasm. Your collective efforts have made this guidebook a valuable tool for future initiatives aimed at fostering sustainable urban development. This guidebook stands as a testament to the power of collaboration and the shared vision of a greener and more resilient Bengaluru.

SECTION-03

INTRODUCTION

India's urban population is projected to grow from 410 million in 2014 to 814 million by 2050, with four new megacities expected by 2030. This rapid growth exacerbates climate risks like rising temperatures, unpredictable weather, sea level rise, floods, and droughts, making effective climate action urgent. In 2011, the population of the Bruhat Bengaluru Mahanagara Palike (BBMP), the municipal corporation of the city of Bengaluru was 85 lakhs (Census 2011).

As per the 2023 BCAP Summary Report, Bengaluru, with a population exceeding 10 million and a 170% increase in built-up area from 1990 to 2015, faces severe ecological and infrastructural challenges. This rapid urban sprawl has resulted in the encroachment of 85% of the city's floodplains and reduced green spaces to just 1.5% of the total area, leading to deteriorating air quality, rising temperatures and frequent flood.

Green spaces in urban areas like Bengaluru are essential for improving air quality, reducing runoff, mitigating urban heat islands (UHIs) and facilitating a network for biodiversity movement. For instance, in Bengaluru, the average urban green space provides local cooling effects up to 347 meters beyond its boundary. The temperature within the average urban green space can be up to 2.23°C cooler than at the point where its cooling effects cease (Shah et al., 2021). However, the city's per capita green space stands at a mere 1.3 square meters, far below the 10-12 square meters per person recommended by the Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines.

The BCAP aims to integrate a climate lens into all sectoral and institutional efforts—including the Urban Planning, Greening, and Biodiversity sector. Below are some specific targets set within this sector:

- Conserving and restoring blue-green networks.
- Increasing the city's tree canopy by 10% by 2030 and 20% by 2040.
- Expanding green cover and permeable surfaces to 40% by 2040 to mitigate flood and heat-related risks.

Nature-based Solutions (NbS), such as urban greening (pocket parks, neighborhood parks, roof tops and urban groves and forests), are crucial for tackling the climate and urban environmental challenges. NbS supports climate proofing efforts by modulating local heat, improving air quality, reducing runoff and supporting biodiversity.

However, strategic planning is required for successful implementation. Many cities conduct tree planting drives, but low survival rates often result from poor planning and aftercare. Identifying suitable planting sites through community and technology-based assessments is essential.

Local governments have explored social innovation (SI) as a promising method for integrating value and improving social outcomes. SI involves innovative approaches to addressing societal challenges through collaboration among citizens, societal actors, and government agencies. It bridges different policy areas and fosters new stakeholder relationships, making it ideal for urban greening.

What is a Mapathon?

A Mapathon is an example of social innovation, combining community involvement with evidence driven technology inputs. It is a community-led initiative that engages local stakeholders in identifying and documenting potential urban planting sites. It capitalizes on technology and scientific methods to create a structured repository of sites ideal for greening in cities.

Engaging residents, educational institutions, volunteers, and government bodies, a Mapathon combines local insights with technology-driven assessments. Such a collaborative approach improves site selection accuracy and fosters community ownership and environmental stewardship.

Who is this Guidebook for?

This is a guidebook designed to engage with policymakers, environmentally conscious citizens, Resident Welfare Associations (RWAs), Civil Society Organizations (CSOs) and other community stewards who are dedicated to improve our city's green spaces. It provide practical steps and tools to help users identify and locate potential open spaces for planting.

How to use this Guidebook:

- **Policymakers and government civic departments:** Please use this guidebook as a tool to create a repository of planting locations that will be ready for interventions with the onset of the monsoon. Follow the step-by-step mapping instructions to locate underutilised urban pockets and integrate them into inclusive urban planning strategies for efficient and sustainable greening practices.
- **RWAs:** Use this guidebook to advocate for green spaces within your neighbourhood by conducting local ward level Mapathons to engage with local communities and persuade local Range Forest Officers (RFOs) for development and preservation of green spaces to enhance the quality of living in your community.
- **CSOs:** This guidebook can be applied to plan and execute targeted environmental projects from the repository of verified locations. The projects could include reforestation and community gardens, ensuring effective resource mobilization and stakeholder engagement.
- **Active Citizens and Community Groups:** Use the guidebook to identify planting sites in your neighbourhood. Organize community-driven planting campaigns, and tranform underused spaces into vibrant/thriving green zones, and monitor their growth over time.

Figure 1 | **Objectives of a Mapathon**

Components of a Mapathon

Stakeholder Engagement

Stakeholders: Resident Welfare Organizations (RWA)s, Civil Society Organizations (CSOs), NGOs, volunteers, and government authorities.

Their involvement ensures that planting locations are well-suited to local conditions and supported by the community. Stakeholder engagement fosters a sense of ownership and commitment, leading to better maintenance and sustainability of green spaces. Collaborative decision-making among stakeholders aligns project goals with community priorities, increasing the likelihood of successful outcomes.

Technology and Tools

Tools: Geographic Information System (GIS) software, Google Earth Pro, and OpenForis.

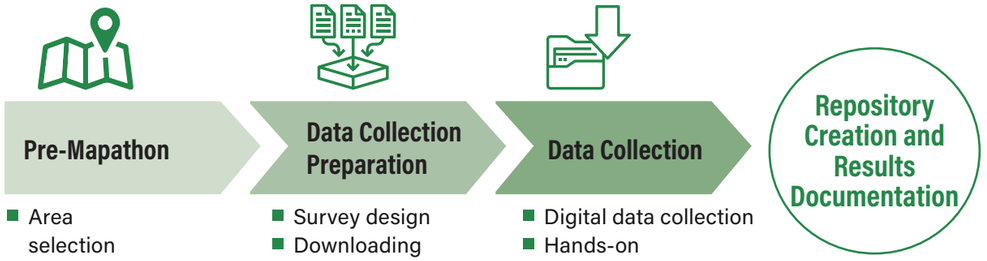
Integrating technology into planting initiatives is vital for their effectiveness and long-term sustainability. They enable precise mapping and assessment of suitable planting locations based on environmental and spatial data. Such a data-driven approach optimizes resource allocation and ensures that green infrastructure projects are well-planned and scientifically validated, enhancing their environmental and social impact.

SECTION-04

METHODOLOGY

As the Mapathon organizer, first determine your data's purpose. Is it to create a repository of planting locations for local government authorities, driven by technology and the community? Or is it for RWAs to identify and plant saplings themselves? Alternatively, is it for NGOs or environmental groups? Specify who will plant the saplings and who will receive the planting location information.

Figure 2 | **Process of conducting a Mapathon**



A. Pre-Mapathon Planning

1. Area Selection

Focus on municipal or residential wards, panchayat areas, townships, educational campuses, industrial estates, commercial sectors or even districts. These units offer distinct settings that enhance data collection and community engagement. As an additional optional step, extract publicly available data on flood risk, land surface temperature, canopy cover, groundwater recharge potential and other suitable parameters to determine vulnerable areas

2. Venue Selection

Select a venue that prioritizes accessibility, with good public transport connectivity, preferably near metro and bus stations. Ensure reliable internet, electricity backup, conducive ambiance, ample space for maps and activities and basic amenities like drinking water and restrooms.

3. Resource Allocation

Allocate funds and provide essential stationery, software and human resources for the Mapathon. This includes the required software for digital data collection, laptops or computers and physical materials like stickers and highlighters. Recruit volunteers for data collection and community engagement. Ensure personnel can communicate effectively in local language about local

issues like water logging, heat and other sustainability challenges.

4. Awareness Campaigns

Launch a comprehensive awareness campaign to encourage widespread community participation in the Mapathon. Include essential details such as organizers' names, contact information, registration process, venue location with directions, and event logistics.

- **Outreach Strategies**
- **Social Media Engagement:** Share updates, announcements, and success stories on Facebook, Twitter, Instagrram, and LinkedIn. Use engaging posts, videos, and infographics about urban greening and Nature-Based Solutions (NbS). Promote event-related hashtags.
- **Printed Materials (optional):** Create eye-catching posters, flyers and brochures for local neighborhoods, schools, colleges and community centers. Provide clear information about the Mapathon and participation details.
- **Local Outreach:** Engage with Resident Welfare Associations (RWAs), Civil Society Organizations (CSOs), schools, colleges, and other community groups directly.
- **Word-of-Mouth:** Encourage participants and stakeholders to spread the word. Connect with local activists and enthusiastic citizens in environmental and community development sectors.

Figure 3 | **Example of a poster for an awareness campaign for the Mapathon**

B. Preparation for Data Collection

Plan the methods for data collection, focusing on digital and technology-backed approaches or physical methods. Information on potential planting sites will be collected through survey questions and community discussions. Design the survey for potential planting sites before setting up the following methods:

- Digital and Technology-Backed Method: Use GIS software, satellite imagery, and online surveys. GIS allows precise spatial analysis and mapping, satellite imagery provides detailed visual data, and online surveys ensure accurate and efficient data collection and community input. Refer Annexure I
- Hands-On Mapping: Utilize printed maps, direct community interactions, and manual annotations with stickers or sticky notes. This approach enables in-depth engagement with local knowledge and conditions, capturing qualitative insights. Refer Annexure I

Additionally, a hybrid method can be employed using Google Earth satellite imagery to drop pins and collect survey responses digitally.

1. Designing the Survey

- The Mapathon survey helps determine the feasibility of a potential planting site based on a series of technical questions. The survey questions may be tailored as per suitability and relevance.
- Some critical information that must ideally be collected is as follows:
- The type of plot identified as suitable for planting activities (for instance, is the identified location an empty plot, roadside, private institution grounds, junction or lakeside ?).
- Ownership status of the land (public or private) and responsible jurisdictional authority.
- Feasible types of greening efforts in the area (for instance, is the location suitable for home gardens, roadside greening, park greening, waterbody greening, block greening, or site boundary greening?)
- Insights into the current green cover in the locality.
- Current maintenance practices in tree planting.

Table 1 | **Sample Survey Questions**

CATEGORY	QUESTION	OPTIONS
Land Use and Tree Count	1. What is the land use in the polygon?	1. Building 2. Roads 3. Vacant land 4. Park 5. Waterbody 6. Land Fill
	2. Number of trees already existing in the plot	1. 0 2. 1 3. ...>30 4. Unknown
Interventions	3. What tree-based intervention do you identify?	1. Home garden 2. Parks with trees 3. Road-side linear plantations 4. Waterway plantations 5. Boundary plantation along a plot/site 6. Others
	4. Can you improve the tree cover in this plot?	1. Yes 2. No

CATEGORY	QUESTION	OPTIONS
Land Ownership	5. What is the land ownership of the plot?	1. Public 2. Private
	5.1. (If public) Identify	1. Institutional 2. Parks/Waterbody 3. Open Spaces/Parking Spaces 4. Roads 5. Railway 6. Other, specify _____
	(If private) Identify	1. Residential 2. Institutional 3. Industrial 4. Other, specify _____
	6. What is the soil type in the area?	1. Sandy 2. Clayey 3. Loamy 4. Rocky 5. I do not know
	7. Are there any existing water bodies nearby?	1. Yes 2. No
	8. Is the area prone to flooding during heavy rains?	1. Yes 2. No 3. Not sure
Community Engagement	9. Are there any existing community initiatives for tree planting or environmental conservation in the area?	1. Yes 2. No
	10. What are the main challenges faced by the local community in tree planting or environmental conservation efforts?	1. Lack of awareness 2. Limited resources 3. Policy constraints 4. Others, specify: _____
Tree Health and Maintenance	11. What is the condition of existing trees in the area?	1. Healthy 2. Diseased 3. Stunted growth 4. Dead 5. Others, specify: _____
	12. Is there a need for tree pruning or maintenance activities?	1. Yes 2. No
Future Planning and	13. Are there any plans for future urban development or infrastructure projects in the area?	1. Yes 2. No 3. Not sure
	14. How can tree planting and restoration efforts be integrated into future urban planning initiatives?	1. Incorporating green spaces in infrastructure projects 2. Implementing tree planting requirements for new developments 3. Creating urban forests or green corridors 4. Others, specify: _____
	15. Any other comments on the plot:	

Source:

2. Preparing for the Digital and Technology-Backed Method

Ensure access to laptops or computer systems. Install QGIS, Google Earth Pro, and Collect Earth by OpenForis, which are freely available.

Set up these tools on your devices before the Mapathon and conduct test runs to familiarize yourself with their functionalities. This preparation ensures smooth operation and efficient data collection and analysis during the event.

The broad steps to download and set up the software are as follows:

- Download and install Collect and Collect Earth Desktop.
- Build a survey in Collect.
- Generate a sampling grid using Google Earth Engine.
- Import the sampling grid into Collect.
- Export the finalized survey from Collect.
- Import the survey into Collect Earth Desktop.

Visit this link for a detailed step-by-step guide for downloading and setting up the software: *https://openmrv.org/web/guest/w/modules/mrv/modules_3/response-design-in-collect-earth-desktop#31-download-and-install-collect*

3. Preparing for Hands-On Mapping

- **1. Printed Maps Preparation**

Choose an appropriate map size for clear visibility and divide the Mapathon area into manageable sections, typically four or more. Ensure the printed satellite images clearly show land features and are well-labeled for easy identification.

To facilitate the walkable map engagement process, the total area of the Bommanahalli zone (approximately 97.7 square kilometers) was divided into four large maps, each measuring 4 meters by 2.4 meters and printed to a scale of 1:25,000. This division ensures that each section of the zone is thoroughly represented and allows for in-depth community engagement across the entire area.

- **Map 1** includes wards such as Yelchenahalli, Jaraganahalli, Puttenahalli, and others.
- **Map 2** covers additional wards including Hongasandra, Bommanahalli, Mangammanapalya, and several others.
- **Map 3** includes wards such as Hosa Road, Kudlu, Kodichikkanahalli, and others.
- **Map 4** features wards like Konanakunte, RBI Layout, Hulimavu, and others.

Optional Preparation with Stickers or Sticky Notes

Optionally, prepare stickers to mark suitable plantation types, such as home gardens, roadside plants, parks, waterbody areas, block plantations, and site boundaries. Alternatively, use plain stickers or sticky notes for manual labeling and marking during the Mapathon.

4. Virtual Mapathon

While fully digital, this method may be more labor-intensive due to managing multiple forms. It does not utilize advanced GIS functionalities but reduces reliance on physical maps and printed materials. Ensure access to tablets or laptops with internet connectivity, as well as Google Earth satellite imagery to view the Mapathon area and drop pins at identified locations. Additionally, create a Google Form to collect relevant information for each pinned location.

The Bengaluru Climate Action Cell, in collaboration with the Smart City Portal, has developed a virtual Mapathon that is now live on the Cell's website. This platform enables residents to actively participate in identifying underutilized spaces for potential greening and blue-green infrastructure interventions from the comfort of their homes. This initiative aims to enhance community engagement in urban planning and environmental conservation efforts.

C. Data Collection

As part of the data collection process, initiate discussions with respondents about the impacts of climate change on urban environments. It is also important to provide information on the city's ongoing mitigation efforts related to climate resilience and urban greening initiatives.

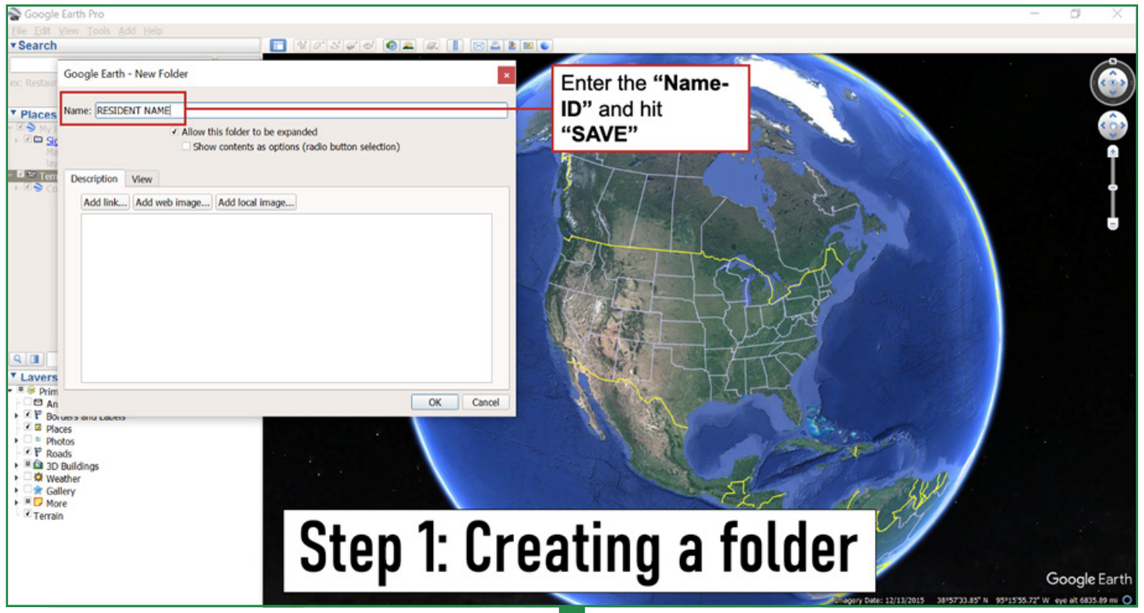
Additionally, encourage participants to share their suggestions and advice based on their local knowledge and community perspectives. The larger aim is to ultimately incorporate these insights into the planning and decision-making processes.

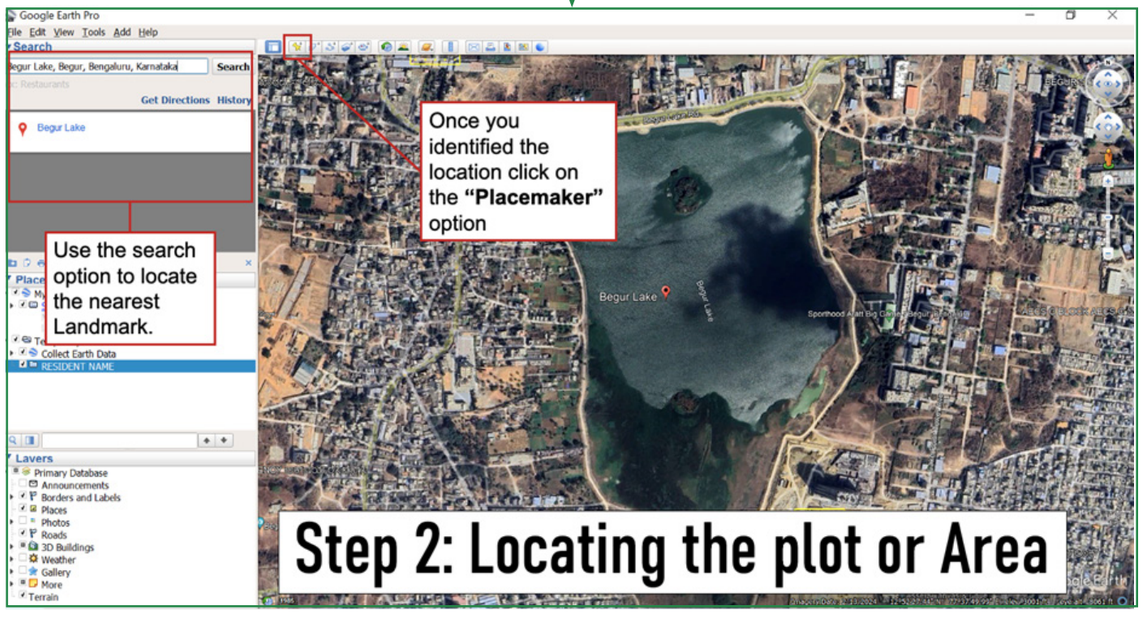
1. Digital Data Collection Method

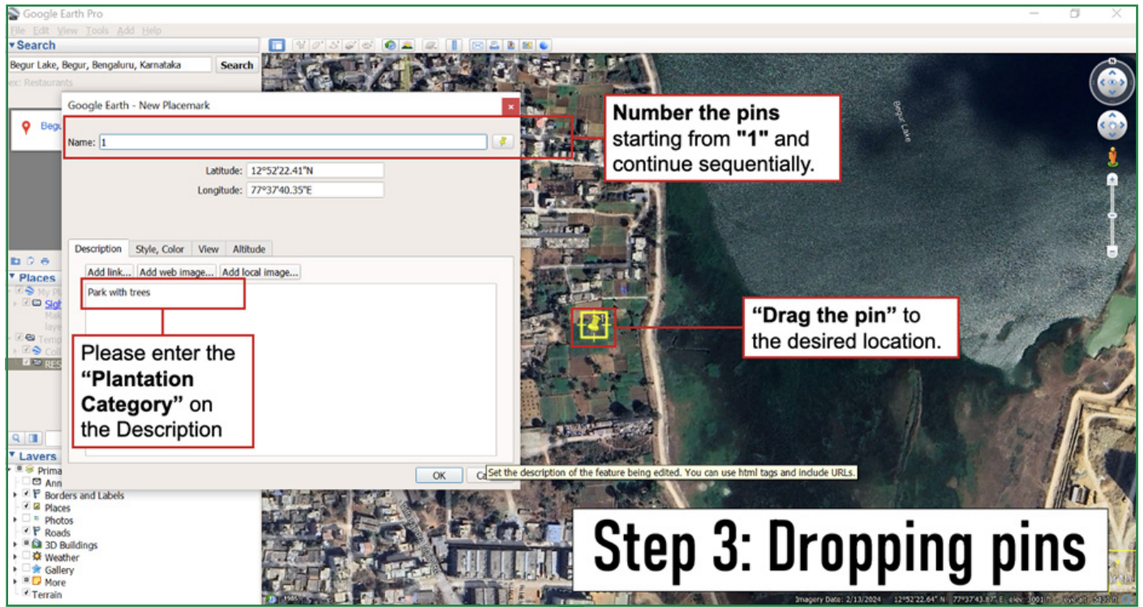
Follow the steps below to collect data using Google Earth and Collect Earth

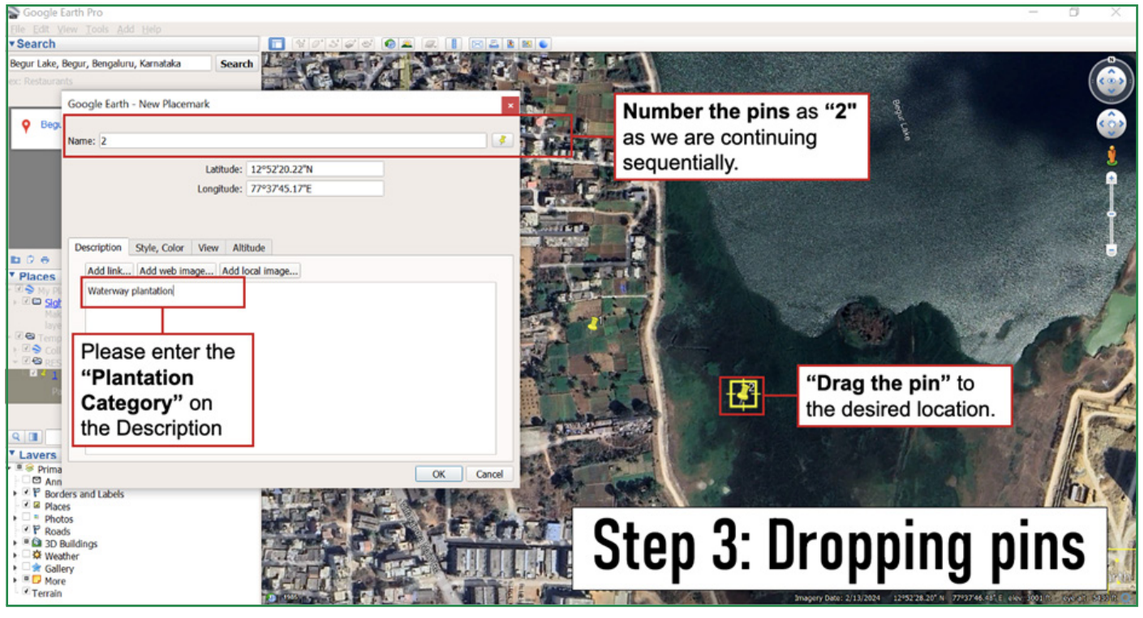
Figure 4 | **Data collection using the digital method**

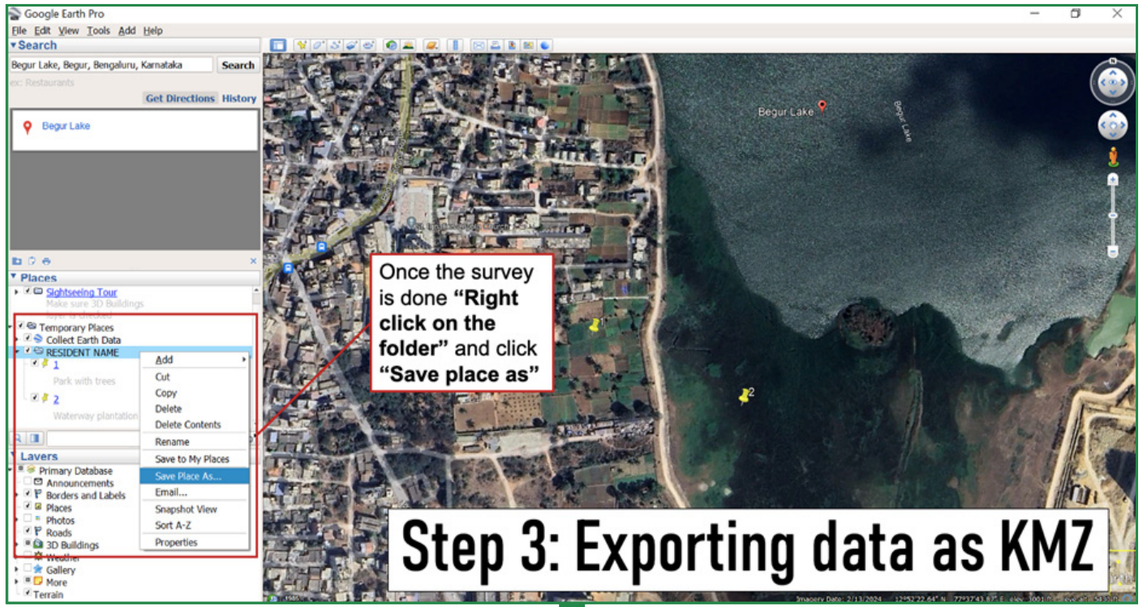
Part I: Dropping Pins in Google Earth

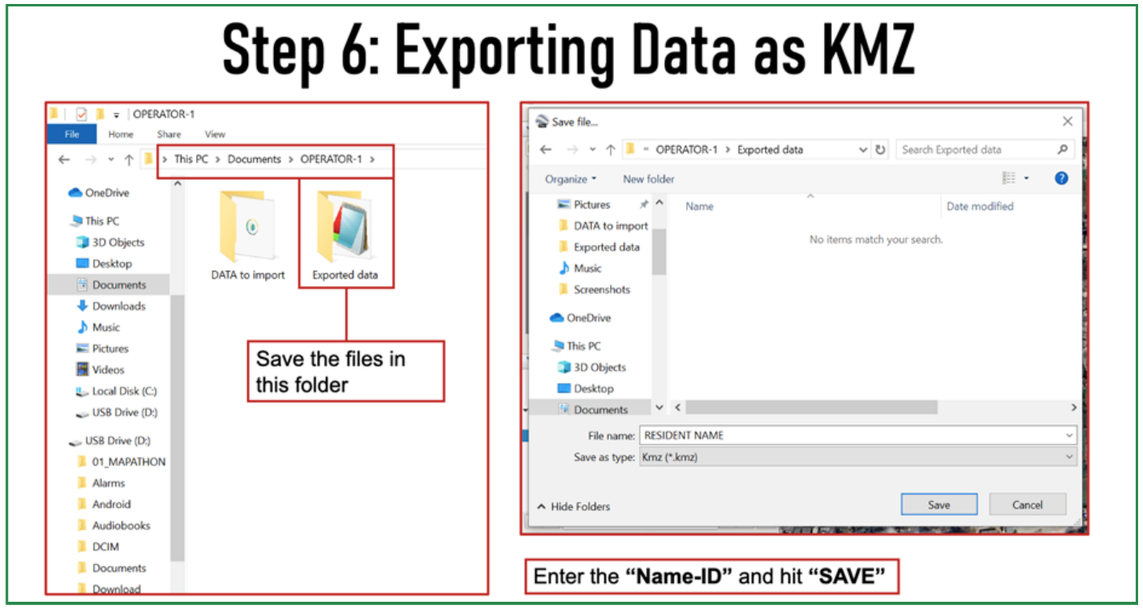


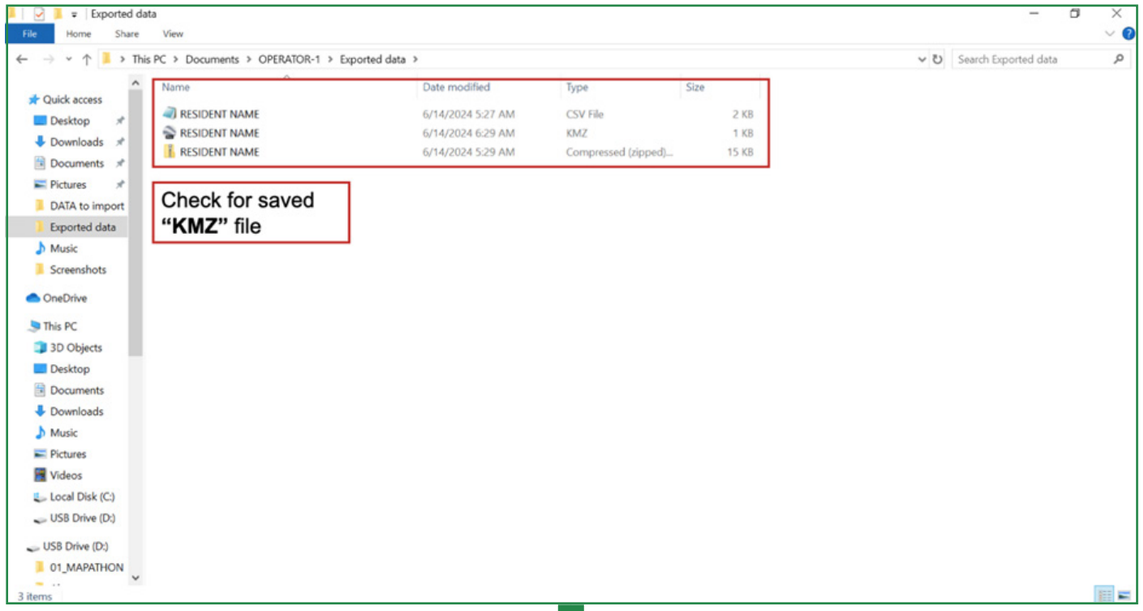



Number the pins starting from "1" and continue sequentially.
"Drag the pin" to the desired location.
Please enter the "Plantation Category" on the Description
Step 3: Dropping pins


Number the pins as "2" as we are continuing sequentially.
"Drag the pin" to the desired location.
Please enter the "Plantation Category" on the Description
Step 3: Dropping pins


Once the survey is done "Right click on the folder" and click "Save place as"
Step 3: Exporting data as KMZ


Step 6: Exporting Data as KMZ
Save the files in this folder
Enter the "Name-ID" and hit "SAVE"


Exported data
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Search Exported data
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6/14/2024 5:27 AM
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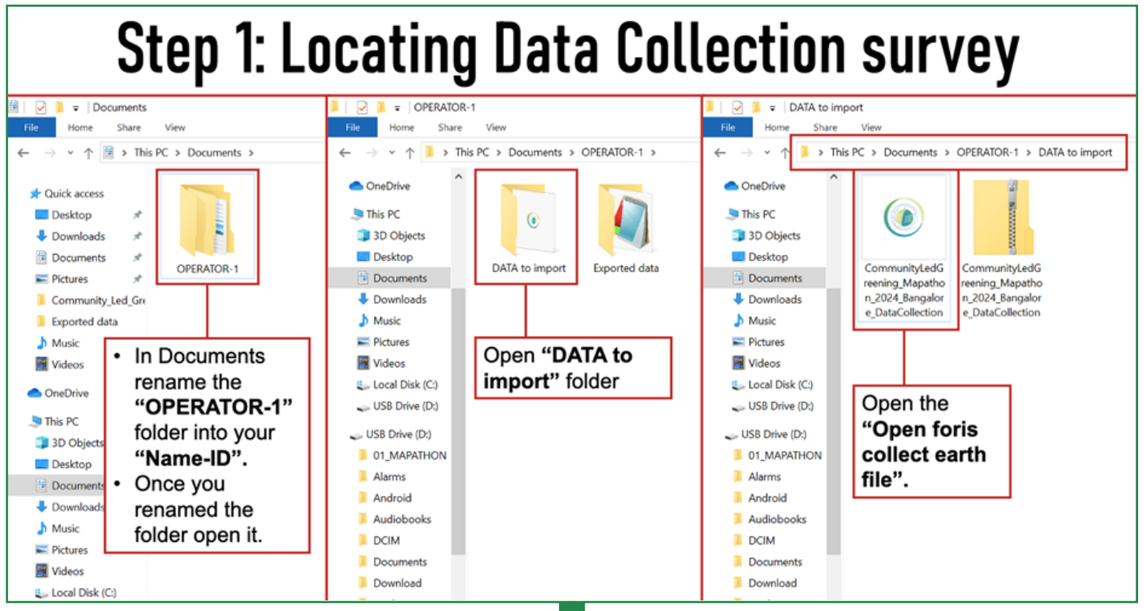
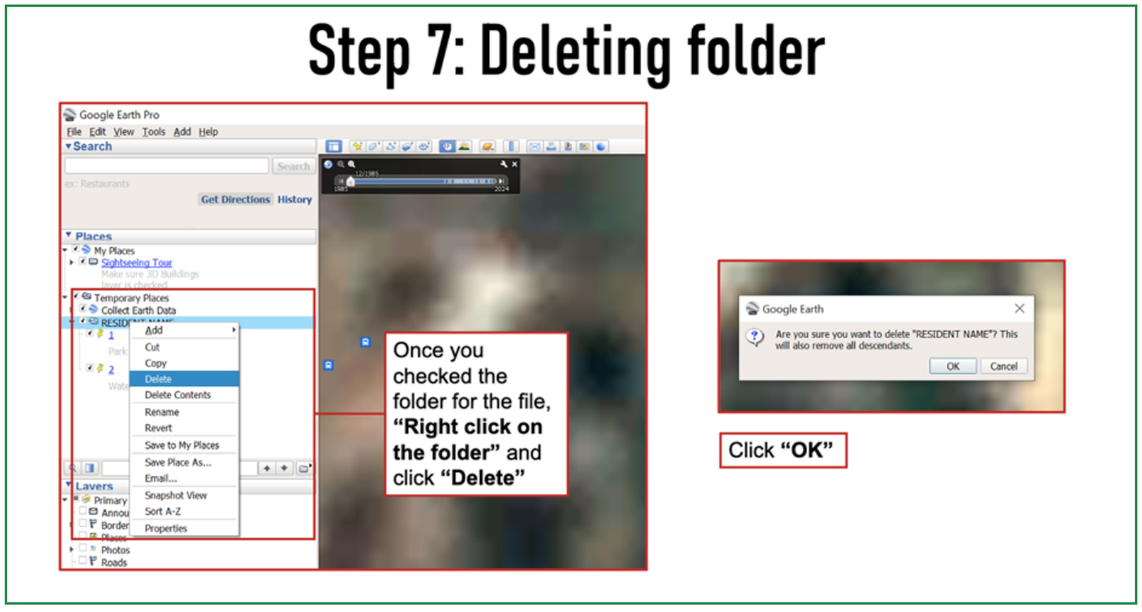
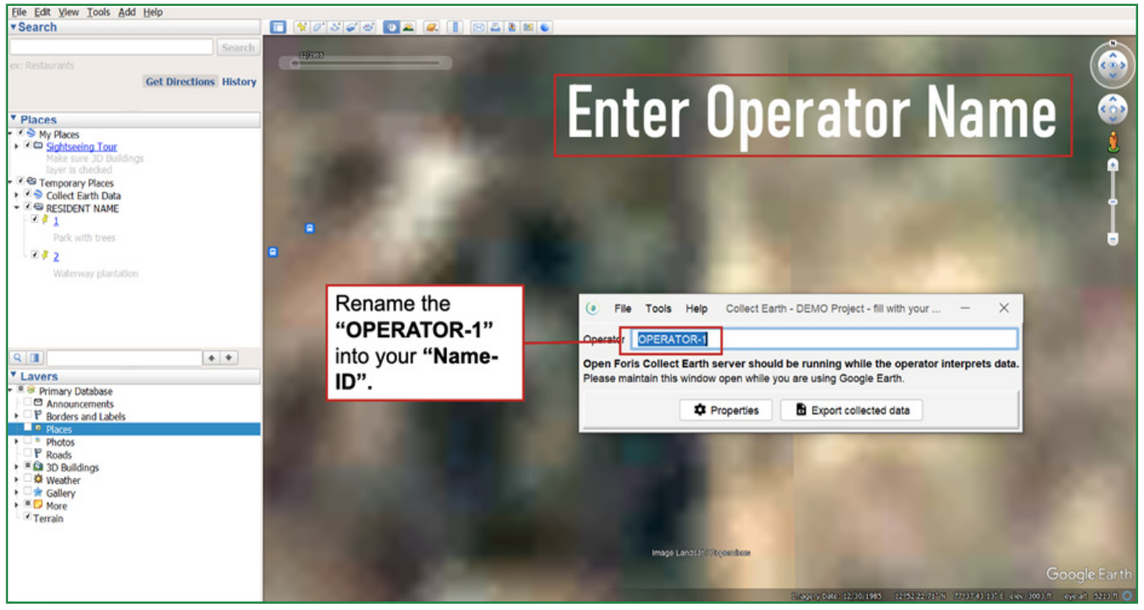
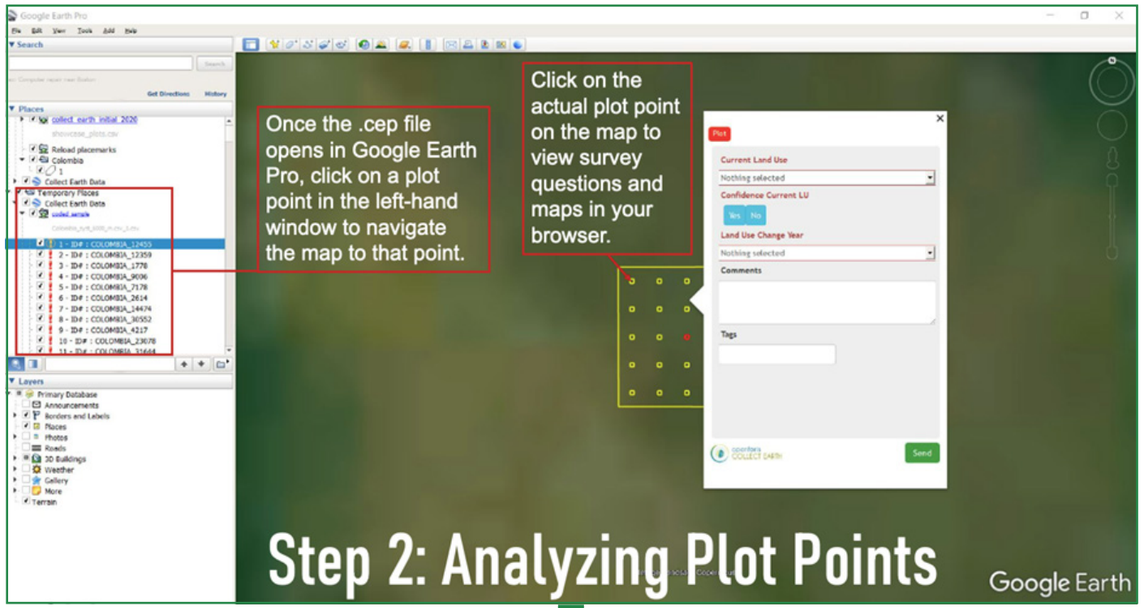
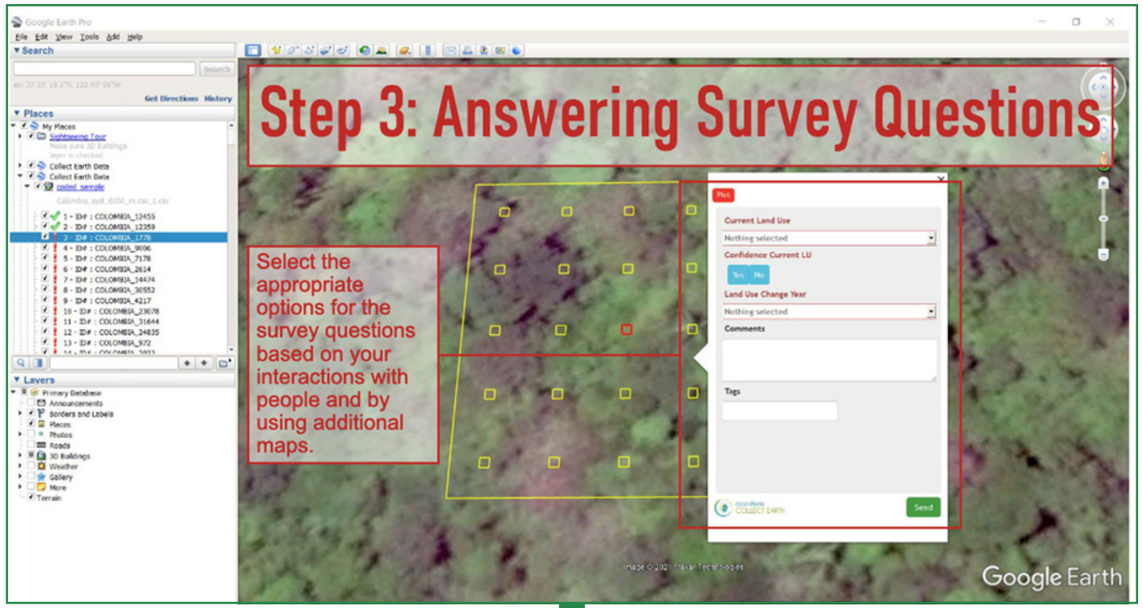

Step 1: Locating Data Collection survey
OPERATOR-1
• In Documents rename the "OPERATOR-1" folder into your "Name-ID".
• Once you renamed the folder open it.
DATA to import
Exported data
Open "DATA to import" folder
CommunityLedGreening_Mapathon_2024_Bangalore_DataCollection
CommunityLedGreening_Mapathon_2024_Bangalore_DataCollection
Open the "Open foris collect earth file".

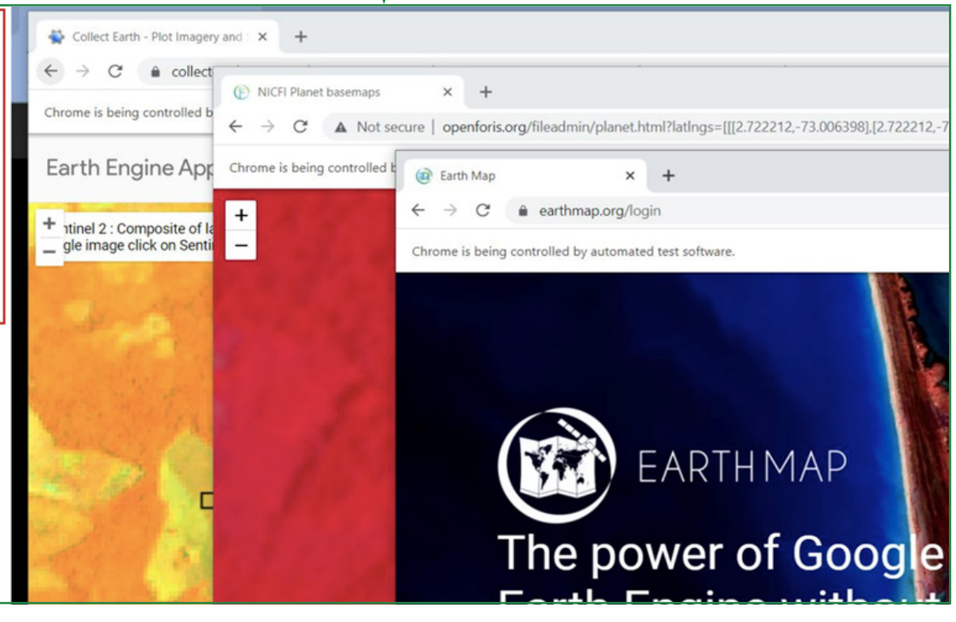

Step 7: Deleting folder
Google Earth Pro
Once you checked the folder for the file, "Right click on the folder" and click "Delete"
Add
Cut
Copy
Delete
Delete Contents
Rename
Revert
Save to My Places
Save Place As...
Email...
Snapshot View
Sort A-Z
Properties
Google Earth
Are you sure you want to delete "RESIDENT NAME"? This will also remove all descendants.
OK
Cancel
Click "OK"

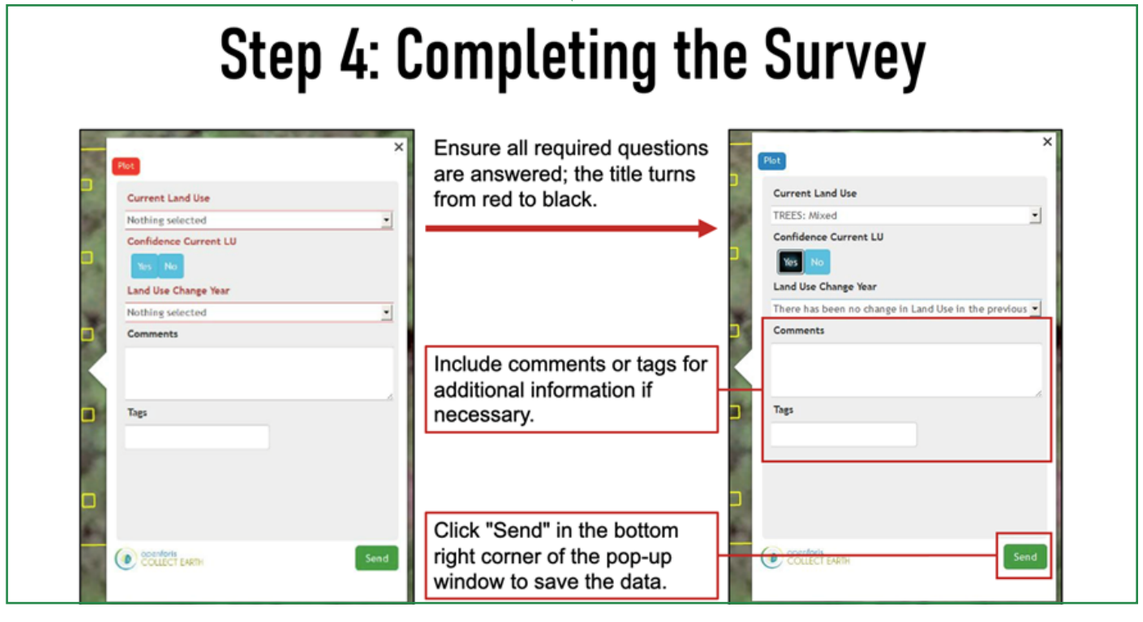

Enter Operator Name
Rename the "OPERATOR-1" into your "Name-ID".
File Tools Help
Collect Earth - DEMO Project - fill with your ...
Operator
OPERATOR-1
Open Foris Collect Earth server should be running while the operator interprets data.
Please maintain this window open while you are using Google Earth.
Properties
Export collected data
Google Earth

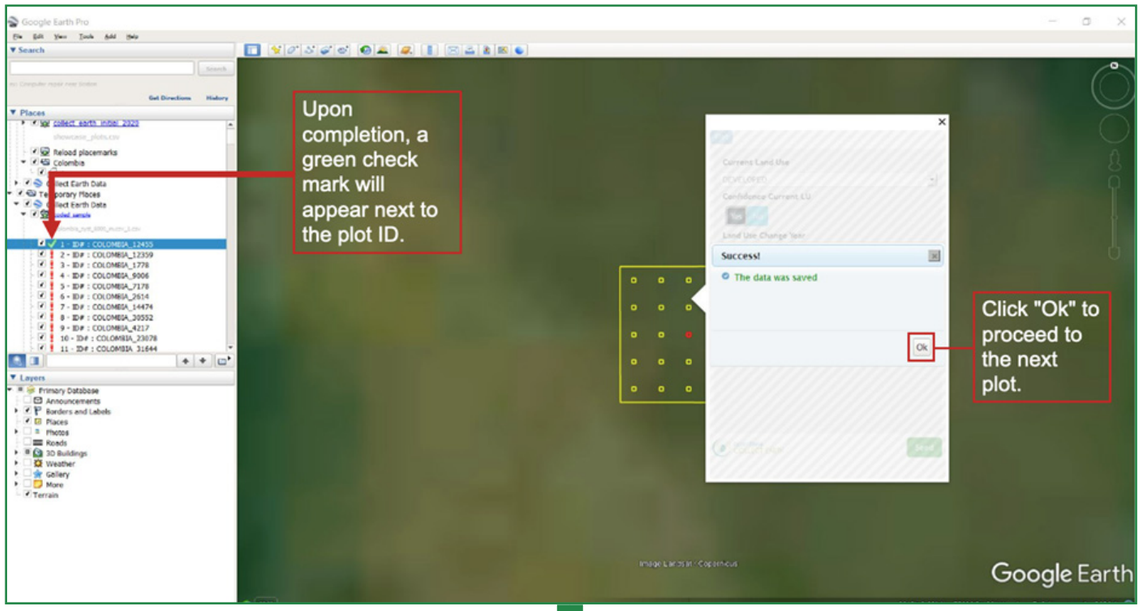


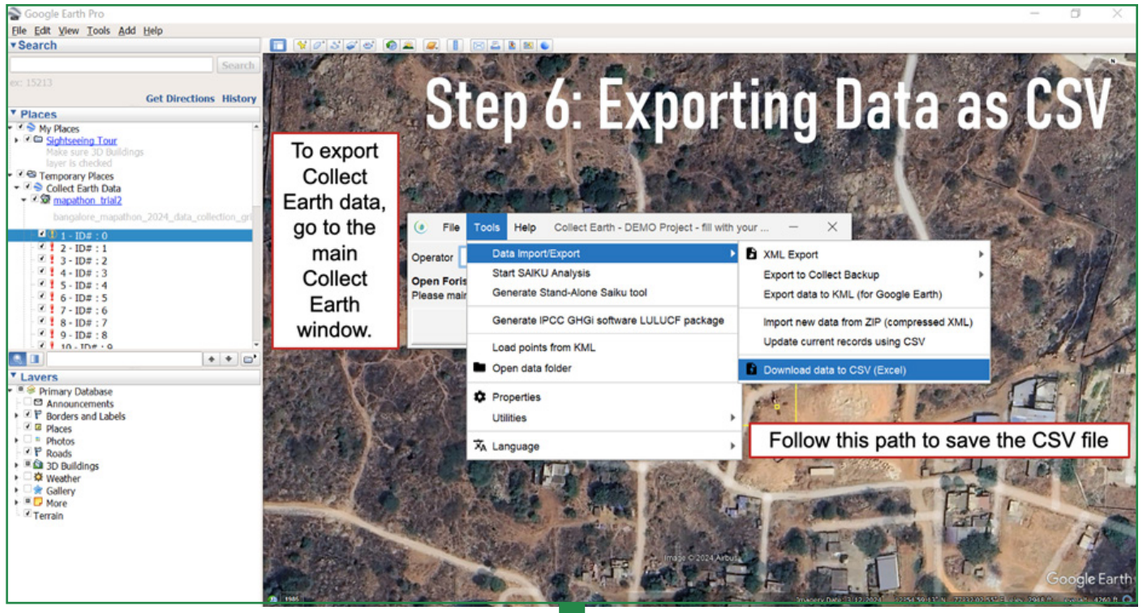


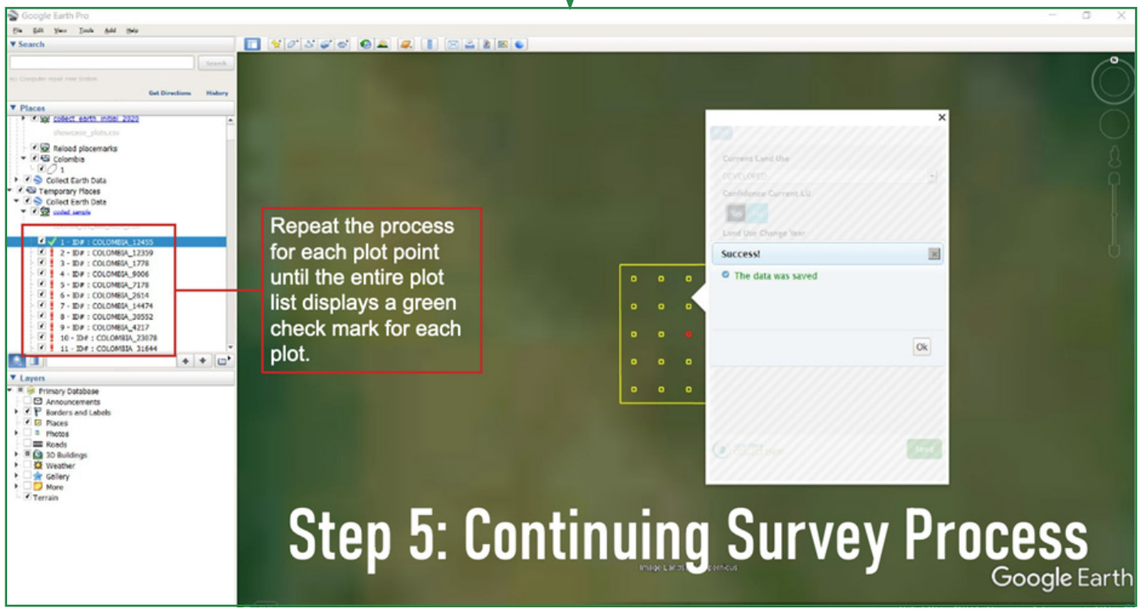
•Utilize Collect Earth Plot Imagery and Statistics, NICFI Planet base maps, and Earth Map to analyze land use changes.
•Sign in to the required maps as needed.

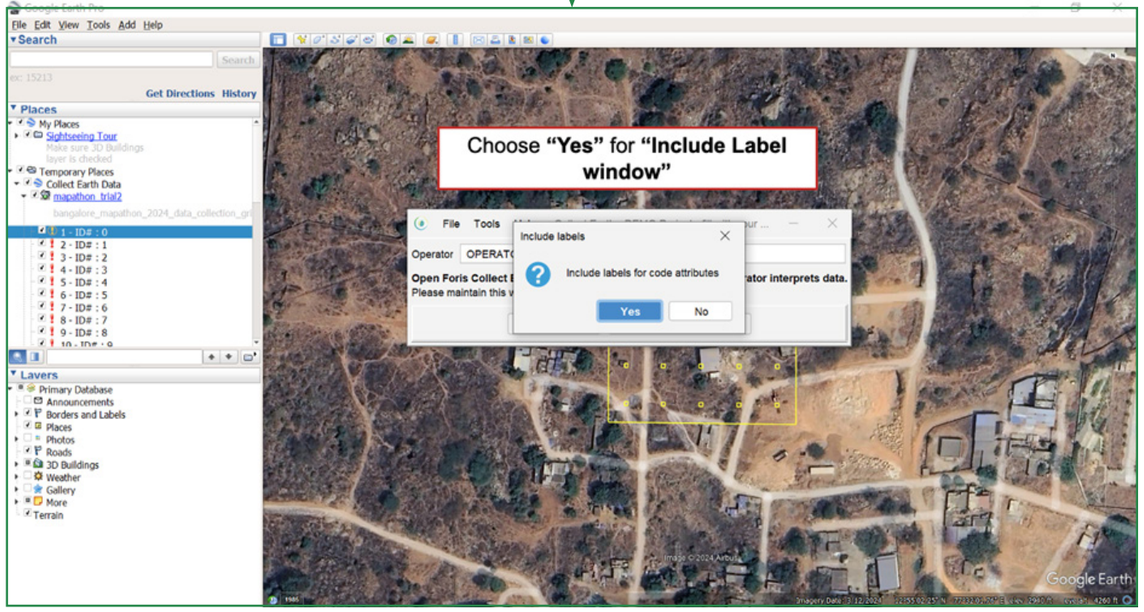




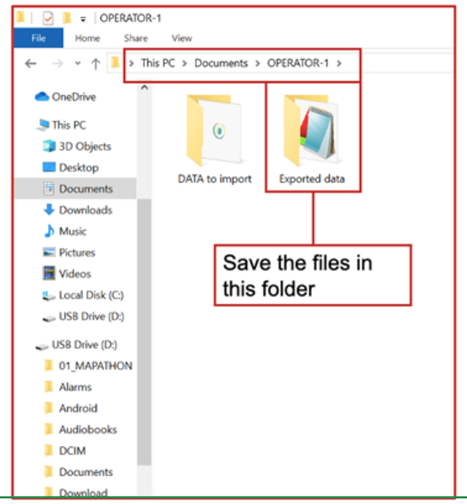

Upon completion, a green check mark will appear next to the plot ID.
Click "Ok" to proceed to the next plot.
Success!
The data was saved
Ok
Google Earth

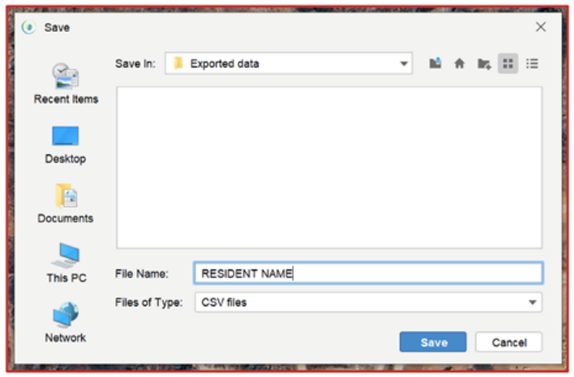

Step 6: Exporting Data as CSV
To export Collect Earth data, go to the main Collect Earth window.
Data Import/Export
Start SAIKU Analysis
Generate Stand-Alone Saiku tool
Generate IPCC GHGi software LULUCF package
Load points from KML
Open data folder
Properties
Utilities
Language
XML Export
Export to Collect Backup
Export data to KML (for Google Earth)
Import new data from ZIP (compressed XML)
Update current records using CSV
Download data to CSV (Excel)
Follow this path to save the CSV file
Google Earth


Repeat the process for each plot point until the entire plot list displays a green check mark for each plot.
Success!
The data was saved
Ok
Step 5: Continuing Survey Process
Google Earth

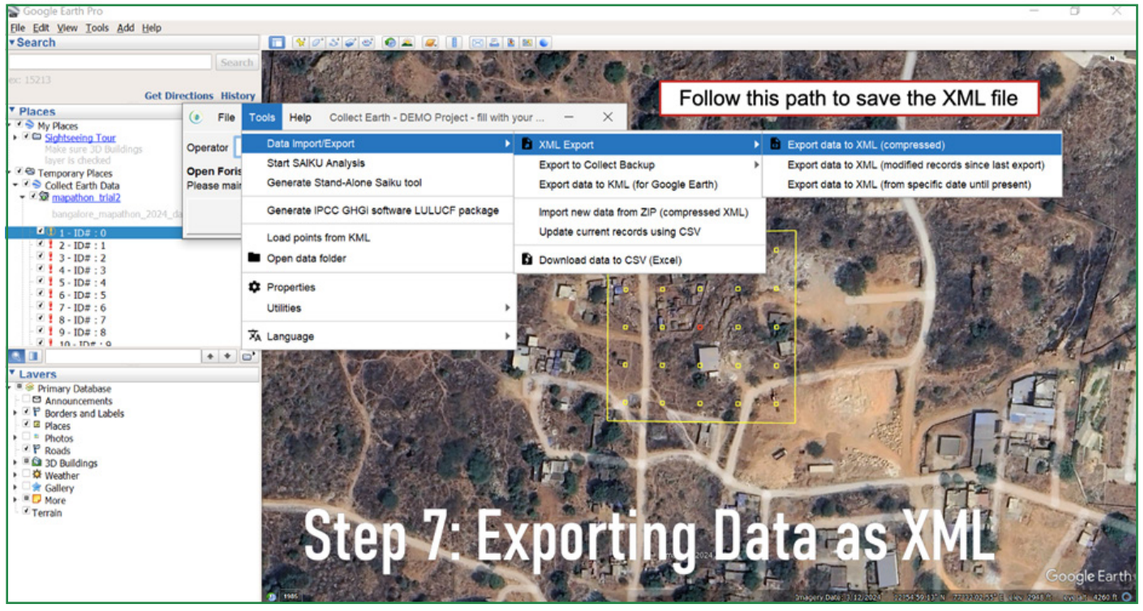

Choose "Yes" for "Include Label window"
Include labels
Include labels for code attributes
Yes
No
Google Earth

Step 6: Exporting Data as CSV

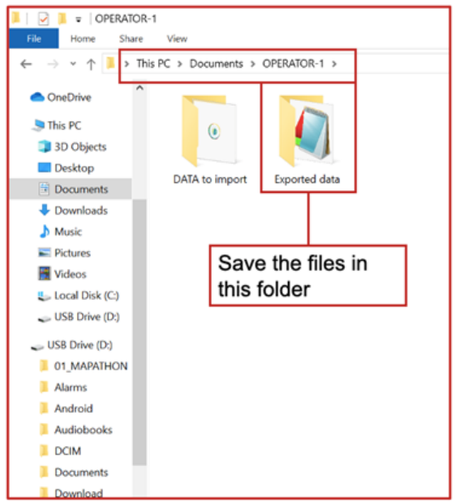


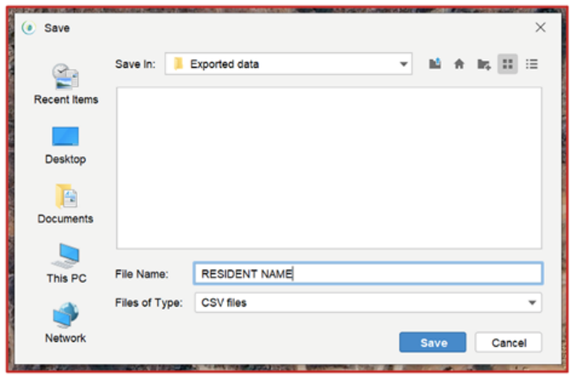


Enter the **"Name-ID"** and hit **"SAVE"**

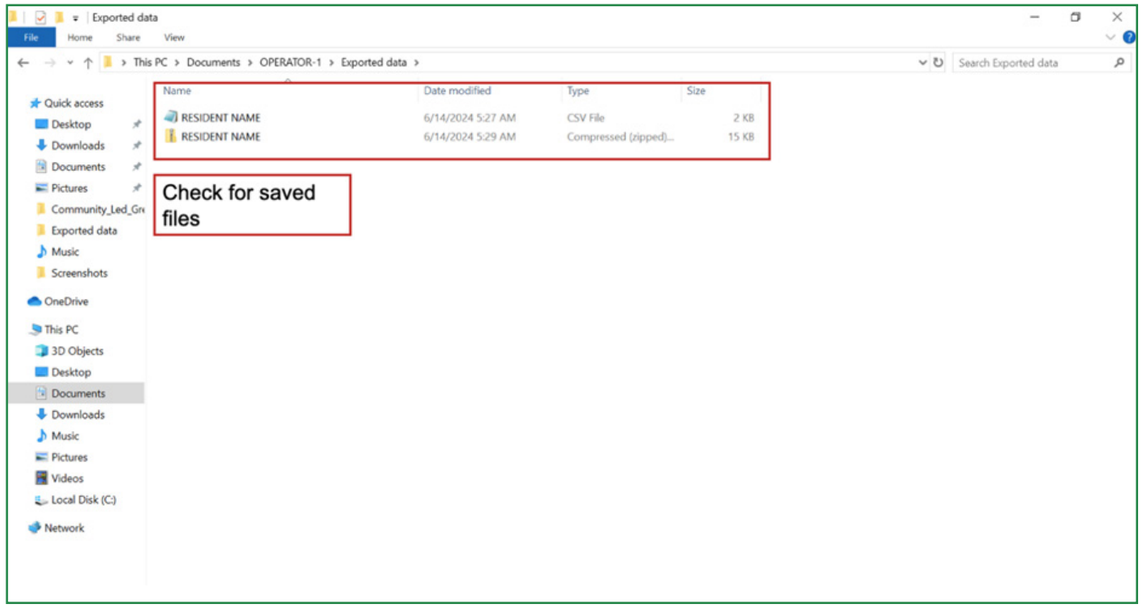


Step 7: Exporting Data as XML





Enter the **"Name-ID"** and hit **"SAVE"**



2. Hands-On Mapping

- Guide community members to the relevant maps. Assist them in locating their suggested planting location on the map, or in identifying additional potential locations for greening initiatives based on their local experiences and knowledge.
- Conduct survey questions once the location is identified.
- Utilize stickers or sticky notes to mark identified planting locations on printed maps according to respondents' suggestions. Ensure thorough labeling and organized marking of areas on the maps.

Figure 5 | **Using printed maps to collect data**

Figure 6 | **Interactions using walk-on maps**

D. Repository Creation

Following the successful completion of a Mapathon, the next critical step involves exporting and organizing collected data. This includes digitizing data from software outputs or organizing data from physical maps and other sources.

The repository of potential planting locations should be formatted in Excel or a tabular spreadsheet format with essential columns:

- Location details such as landmarks or nearby localities.
- Coordinates (latitude and longitude) obtained from mapping tools.
- Google Maps pin location for visual reference.
- Name and contact information of the community member suggesting the location.
- Description of the plot type.
- Feasible greening options.
- Notes or remarks associated with each location.

Organize the spreadsheet to facilitate further analysis and decision-making based on compiled information. To export and organize the data collected via the digital method, follow the procedure specified below:

- Export point data (placemarks) from Google Earth as a KMZ file.
- Convert the KMZ file to an XLSX file.
- Extract coordinates and remarks (e.g., land ownership, plantation typology) from the XLSX file.
- Copy and paste all extracted data into a new spreadsheet.
- Collect Earth files will provide information on previously identified vacant lands.
- Use the KMZ file for new potential sites.
- Use Collect Earth data for information on already identified potential sites.

For data from physical maps, record the coordinates of marked planting locations using Google Maps or Google Earth. Manually input collected data and survey responses into the spreadsheet.

Bengaluru CLIMATE ACTION & RESILIENCE PLAN — Cities4Forests

Mapathon 2024: Potential Planting Sites Identified in the Bommanahalli Zone

SL.No	Landmark/Nearby Location/Locality	Latitude	Longitude	Google Map Pins	Type of Plot	Source	Type of Potential	Remarks
1								
2								
3								
4								
5								
6								

SECTION-05

END NOTES

- **Verification of Potential Planting Locations:** The first step is to verify the data with local government departments to ensure the ownership (public/private) before planting. Once approved, saplings can be planted at the confirmed locations, aligning with community needs and official procedures and enhancing the effectiveness of urban greening initiatives.
- **Raising Awareness through Collaborations:** Share insights and findings with local authorities, climate support groups, and other stakeholders. This raises awareness, fosters collaboration, and supports future sustainable urban development efforts.
- **Documentation of Challenges:** Document any challenges and their solutions throughout the process. This documentation helps refine future Mapathon activities and enhances the efficiency of data collection and verification.
- **Documentation of Community Insights and Stakeholder Interactions:** Thoroughly document qualitative insights from community engagements and stakeholder interactions. Summarizing these insights helps identify successful strategies and areas for improvement, ensuring continous progress in urban greening efforts.

Limitations

The Mapathon is a valuable tool for identifying potential planting locations but has its limitations that should be considered. Primarily it's a preliminary identification process and the selected sites will need to be verified by BBMP to confirm land ownership. Ecological experts will also need to assess soil quality and other ecological conditions to determine the sites are suitable for planting. The exercise also depends on the accuracy and completeness of the data collected which can be influenced by the varying levels of expertise and local knowledge of the participants. Moreover, relying on publicly available maps which may not always have the most current or detailed information adds another layer of complexity. The verification process involving multiple stakeholders like BBMP, ecological experts and local communities can be time consuming and resource intensive and may delay the implementation of planting, if not planned well.

Only native species identitfied by the forest department and vetted by ecological experts will be planted contributing to biodiversity and climate resilience in these locations. Therefore the initiative is aligned to broader environmental and sustainability goals. This focus on native species while good for the environment, may limit the variety of plants that can be used and we need to plan carefully to ensure the selected species are suitable for each site.

Overall, the Mapathon is a good starting point but the success of the planting initiative will depend on thorough ownership verification, citizen involvement and custodianship, stakeholder coordination and careful species selection.

GOVERNMENT OF KARNATAKA

BBMP

Bengaluru CLIMATE ACTION & RESILIENCE PLAN | Climate Action Cell

Cities4Forests