

City Academy 2: Climate Action Planning

A summary of presentations and discussions from the 2nd City Academy

São Paulo, Brazil
September 16-17, 2019



Global Platform for Sustainable Cities

Resource Team

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Introduction

City delegates from 15 cities, from Latin America --La Paz and Xalapa, Mexico; Lima, Peru; Brasilia, Recife, Teixeira de Freitas, Sao Paulo, Palmas, Sao José de Campos, Brasil; Asuncion, Paraguay --, Africa -- Johannesburg, Abidjan, Dakar -- and Asia -- Melaka, Malaysia, and Beijing, China, travelled to Sao Paulo, Brazil to take part in a two-day workshop focused on climate action planning. The following sections describe the content that was presented, working group discussions and takeaways from the workshop.

Day 1: September 16, 2019

The objectives of the City Academy were to understand that climate action planning entails:

- A deliberate effort to set targets and implement climate initiatives
- A collaborative effort, one agency alone, cannot achieve climate targets. Climate Action Plans are instruments to accelerate action that require collaboration across multiple sectors and stakeholders.
- Integrated planning, both horizontal and vertical stakeholder engagement
- The role of cities in the global efforts to tackle climate change. Cities are key systems to accelerate climate action and harness economic and social benefits.
- Tools and resources to demonstrate how to carry out climate action planning
- Learning from peer cities

Cities, the Climate Crisis and the Opportunity

Andrea Fernandez, C40

Cities are an opportunity to reduce global warming; this set the scene for the essentiality of climate action planning at the city level. There is a climate emergency, people are protesting, and students have mobilized. There is urgency to act as though the “house is on fire.” From 1850 until today, there has been a global atmospheric increase of carbon dioxide causing a 25-centimeter increase in sea level and 1-degree Celsius increase in global surface temperature (Cambridge University). Climate change is happening, and it affects regions differently and unfairly. These injustices will be exacerbated in the future. Communities least responsible for emitting greenhouse gases are those most impacted by the effects of climate change.

While there will still be risks and adverse impacts with global warming of 1.5 degrees Celsius, 1.5 degrees Celsius is an ambitious, yet attainable, target agreed upon at the Paris Climate Accords. In order for cities to shift to a low-carbon pathway, global carbon emissions need to peak by 2020, be halved by 2030, and be net-zero by 2050. Since cities account for 70% of global energy-related carbon emissions, cities are an integral part of the climate change solution. Cities can demonstrate their commitment to the Paris Agreement through their

leaders making public commitments to the 1.5-degree Celsius target. Subsequently, cities can demonstrate their commitment by drafting and implementing a climate action plan.

Reducing greenhouse gas emissions and breaking from business-as-usual activities is challenging, though the benefits are significant. Benefits from reducing emissions include better and greener jobs, healthier lives, pro-poor investments, clean air and safe and cheaper energy. Climate action planning creates an opportunity for cities to build consensus around a climate strategy, identify and address vulnerabilities, align resources around key priorities, communicate city needs with other levels of government, and give stakeholders a role in shaping the city's vision.



City delegates were given an exercise to imagine they were meeting with their mayor to convince them to develop an ambitious climate action plan to address climate mitigation and adaptation in their respective cities. City delegates in attendance discussed existing environmental plans and how they could influence their mayors to develop a climate action plan. The delegates from Beijing knew that air quality and creating a livable city was the top of the Beijing mayor's agenda, therefore tying the climate action plan to the air quality issue would help make the business case for a climate action plan. Delegates from Dakar mentioned that they would need popular support for climate action projects in order to convince their mayor. Others noted how that they would convince their respective mayors to support a climate action plan by using apparent vulnerabilities such as air pollution or flooding.

Climate action planning: where to start? What have we learnt so far?

Jana Davidova, C40

This session provided an overview about what constitutes a climate action plan and the lessons C40 has learned from the experiences their network of cities has had with creating Paris-compatible climate action plans. Paris-compatible climate action planning refers to cities planning to become carbon emission neutral by 2050. This type of planning can make cities more livable, healthy, prosperous, inclusive and resilient. C40 developed a climate action planning framework or a suggested trajectory of climate action planning. The figure below demonstrates the three steps cities can take 1) Commitment and Collaboration; 2) Challenges and Opportunities; and 3) Acceleration and Implementation. Within this process a climate action plan should include neutral emissions targets, resilience to climate change-induced hazards, governance and collaboration, and inclusivity and benefits.

Climate Action Planning Framework Pillars



Climate action plans should not remain on a shelf, and should be updated in an iterative process meant to spark and guide concrete actions. C40 found that cities with a climate action plan are three times more likely to implement actions that promote carbon neutrality. Below is a timeline to demonstrate the pathway towards climate action implementation, starting with a city commitment.



Climate action plan implementation begins with a city commitment where the city commits their climate targets and goals in alignment with the Paris agreement. Following this, the strategic climate action planning appraisal is necessary to understand what climate goals and policies are in place; this step requires cities to take an inventory of existing climate policies and determine if they are consistent with the goals of the Paris agreement. The appraisal also takes into account the scope and scale of the climate action planning process. For example, in Medellin the city considered creating a plan for the city proper but as they undertook the appraisal, they realized there was a case to be made for expanding the climate action plan to the metropolitan area. The GHG Emissions and Climate Risk Assessment phase includes a greenhouse gas emissions inventory to understand sources of emissions to ensure that climate actions are based on evidence and to understand what the city is already doing in this space. This step enables cities to understand climate risks to inform adaptation planning, and stakeholder mapping. Based on the GHG Emissions and Climate Risk Assessment, a city can undertake Action and Plan Development. This phase includes scenario planning where a city evaluates the cost of climate actions and which climate actions maximizes benefits so that the likelihood of implementation increases. The Climate Action Plan Review takes place, if the city is within C40's network then C40 reviews the plan. However, other cities should have external reviewers evaluate the plan to ensure its climate goals align with the Paris Agreement goals. The last step is for the climate action plan to be implemented.

Lessons learned from C40 cities that have developed climate action plans.

1. One size does not fit all

Climate action plans come in all shapes in sizes from an annex to an existing climate action plan to make it in compliance with the 1.5-degree Celsius target of the Paris Agreement to different plans for climate mitigation and adaptation. Another example includes climate action plans in Japan where the plans are drafted at the regional and national level and are adapted for each city's context. Even though climate plans can be unique, their targets should all have the same ambition—to reach zero carbon emissions by 2050.

2. Good governance is critical

Having a mayoral commitment is a key element for creating an ambitious climate action plan, however it is not enough. Local governments should collaborate across sectors and consider creating a core climate action planning project team. Clearly articulating key contributing actors is useful. C40 found that climate action planning governance was most effective when governments worked across departments and included senior-level steering committees and working groups.

3. It's all about teamwork

Teamwork across sectors and within climate action planning project teams facilitate the climate planning process. Building strong project teams entails broad stakeholder engagement such as utilizing city networks and including city experts on mitigation, adaptation, buildings and transportation, in the climate action planning process.

4. Manage your consultants

Consultants can be useful for drafting climate action plans. C40 cities note that cities should expect that working with consultants will take time. Some responsibilities might include drafting the correct scope of work, managing the process, editing and shaping the climate action plan, creating ownership of deliverables and making the climate action plan easy for the city to update in the future.

5. Getting to zero emissions is difficult

C40 explains that cities have had trouble reaching this target, but even so, cities should continue to be ambitious with their climate action plans. In order to account for emissions that cities are unable to reduce to zero, cities can acknowledge that new technologies will offset these emissions and note that they are residual emissions.

6. Understand your powers and influence

Since cities rely on other organizations to carry out climate action plans, conducting a powers assessment in the initial phase will be helpful to understand how cities can take action to influence the involvement of other organizations. This also includes engaging with the community and making the process data-informed and community-driven.

7. Focus on implementation

Cities should confront challenges early in the climate action planning process. This includes building partnerships to carry out the climate action plan, creating enabling conditions through national and state policy reform, mobilizing finance and resources, engaging with civil society and the private sector and creating a monitoring and evaluation framework.

8. Power of the network

Networks facilitate climate action planning—it is not what you know, but who you know. The C40 pilot cities mention that involving as many people as possible in this process is

important. Moreover, engaging with other city governments and city-based organizations can be useful as well.

9. Climate action planning is an iterative process

Climate action planning and implementation can be a long, and sometimes, arduous process to reach carbon neutrality by 2050. Motivation might be necessary to push climate action forward. Such motivation might include being part of the solution for the benefit of humanity and future generations.



Experience from Sao Paulo's efforts with Climate Action Planning

Laura Lucia Vieira Ceneviva, São Paulo representative

Sao Paulo has experienced a 2-degree Celsius temperature increase from 1933 to 2014. The city conducted a greenhouse gas inventory from 2003 to 2009 and had seen a reduction in greenhouse gas emissions but emissions have started increasing in recent years. Recently, Sao Paulo has conducted a new greenhouse gas inventory in partnership with C40 in order to train city hall employees how to conduct a greenhouse gas inventory. Sao Paulo found that their largest greenhouse gas emitters were stationary energy, transportation and waste. Sao Paulo's climate action plan aligns with the Paris Agreement, includes adaptation and aims to improve social equity across the city.

Sao Paulo has been successful with drafting climate action planning for a myriad of reasons. The city has been committed to climate mitigation and adaptation because they have a young mayor who has raised political awareness around climate action. The mayor's acknowledgement of the risks associated with climate change has made it easier to move forward with climate action planning. C40's involvement with training the staff gave city hall staff the technical capacity to undertake climate action planning. Sao Paulo found that since the federal government manages electricity and the local government controls building codes and those

regulations, it was imperative to work with both the local and federal governments to reduce greenhouse gases. Finally, the government created working groups composed of various sectoral city level secretariats to advance climate action planning including energy, transportation, waste, health, buildings and land use working groups.

How to use greenhouse gas inventories as a supporting tool for decision-making?

Cesar Carreño, ICLEI

Greenhouse gas inventories, according to the Intergovernmental Panel on Climate Change 2006 guidelines includes the following greenhouse gases: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, nitrogen trifluoride, trifluoromethyl sulfur pentafluoride, halogenated ethers and other halocarbons. In 2006 the IPCC created guidelines for greenhouse gas inventories for the energy, industrial, agriculture, forestry and land use, and waste. Greenhouse gas inventories are an essential step for understanding the origination of greenhouse gas emissions.

Urban GHG emissions inventories are useful to:

- Identify key action areas
- Guide decision-making
- Connect to a monitoring system
- Enable integrated monitoring, reporting and verifying

Greenhouse gas inventories should be conducted at the city level, rather than relying on data at the regional or national level. Having a city level inventory allows cities to react to their contexts, provides firsthand data, and improves the accuracy of sectoral data. For instance, all countries have airports but not all cities have airports. These differences alter greenhouse gas emissions in a given area. Other best practices for GHG inventories include consistent reporting every year like New York City or every other year like Rio de Janeiro. Moreover, the Global Protocol for Community-Scale Greenhouse Gas Emissions (GPC), created by WRI, ICLEI and C40, was developed to improve the transparency, comparability, and credibility of GHG emissions inventories globally. The GPC made it easier for cities to report on GHG emissions and harmonized the language used by the Intergovernmental Panel on Climate Change.

Using GHG data to support decision-making

Wee Kean Fong, WRI

The greenhouse gas inventory, an integral part of climate action planning, is used to set targets, track progress and identify concrete climate actions. The next step following the GHG inventory is to set targets using a scenario analysis. The scenario analysis will project a city's emissions and how emissions could be reduced. For instance, New York City projected their GHG emissions and realized they could reduce their footprint by 30% in 25 years. Chengdu divided their transportation emissions by mode to set even more precise targets. Once cities set their

emissions goals, based on scenario planning, cities should track their progress towards their goal. This entails measuring current emissions against base year GHG emissions and breaking down what contributed to those GHG reductions.

In order to analyze the sources of emissions, a driving force analysis is used. This includes analyzing population, GDP per capita, energy intensity, energy mix and GHG emissions from energy. Another analysis includes the carbon decoupling analysis which analyzes GHG emissions versus GDP to ensure economic growth outpaces GHG emissions. Identifying actions from these analyses is the next step. For instance, Tokyo recognized that GHG emissions for industries was dropping but emissions from commercial buildings increased significantly, while transportation emissions have remained the same for the past 15 years.

Using GHG data to support climate action planning includes the following steps:

1. Scenario analysis
2. Target setting
3. Progress tracking
4. Identifying action

In order to do this effectively, cities need annual data with a short time lag between yearly datasets, accurate activity data, and granular data. The data collected needs to be relevant and consistent to ensure an accurate analysis.

Greenhouse Gas Inventory through ProAire in Baja California Sur, Mexico

Luis Soliz, Baja California Sur delegate

The state of Baja California Sur in Mexico operates as an island, it receives about 80 to 90% of its goods by boat. The state, comprised of five municipalities, has a burgeoning tourism sector. Population growth has increased by 12.8% from tourism alone. More than 20,000 hotel rooms were added stressing the region's waste and energy consumption.

In order to improve the region's GHG footprint, the state implemented ProAire, a multidisciplinary program aimed to reduce emissions and improve air quality. The state conducted a GHG inventory to understand what emissions the state has in order to remedy it. Baja California Sur divided their emissions into the following categories among fixed, area, mobile and natural and then created strategies to reduce emissions from each category, to improve health, promote environmental awareness and strengthen governmental institutions.

Baja California Sur focused on electric energy. Through their analysis, Baja California Sur realized that only one of their 50 powerplants are clean. This is largely because that fossil-fuel driven powerplants are currently five times cheaper than clean powerplants. There are limited renewable energy options for Baja de California Sur. Due to existing regulations, Baja California Sur do not have the ability to procure the solar panel license needed and there are simply not enough solar panels available. Currently the state is working to recover wind turbines that have

been turned off by the federal government. Baja California has considered other options such as retrofitting their ship port. The government has also found that changing building codes will help reduce their GHG emissions.

The cost benefit of clean air from a health standpoint in Baja California Sur equals approximately 400 million dollars. The state hopes to implement their plan to reduce greenhouse gas emissions and improve air quality in its entirety.

Following the presentations on GHG inventories, the cities discussed their own motivation for developing their city GHG inventories, what framework they used and how their local governments would conduct a GHG inventory.

Risk assessment and adaptation-mitigation interactions

Jana Davidova, C40

Climate-related hazards are increasing in frequency and impact. Risk assessments can aid cities in understanding the probability and impact of climate hazards. Integrating both adaptation and mitigation are useful to prepare cities for climate hazards such as flooding or heatwaves, for example. "A climate hazard is a short or long-term climate event that has the potential to cause damage or harm to human and natural systems."

Climate risk equals the probability of a climate event multiplied by its impact. Probability is identified per event such as the likelihood of 50 mm rainfall in two hours or number of days above 40 degrees Celsius. Impact is analyzed through economic value, population, hard and soft systems, and robustness of institutions. The acceptability of climate risks is contingent on the local context. For example, whether a risk is deemed socially acceptable varies by city, within a city, within population groups, and is dependent on cost.

Understanding climate risks for a city is beneficial to plan how a city responds to climate hazards. This is ever more relevant as the probability and impact of climate hazards will increase with climate change. C40 has outlined the following steps to conduct a risk assessment:

1. Define the context
2. Engage stakeholders and form an interdisciplinary team
3. Identify, analyze and evaluate risks
4. Create risks and vulnerabilities map
5. Assess and develop options

Linking climate adaptation and mitigation can leverage the benefits of climate action. C40 created an adaptation-mitigation interaction assessment tool that compiles best practices from cities and allows city delegates to choose the climate hazard and the type of event that concerns their city. The tool provides interactions between adaptation and mitigation actions

including how this would impact climate risk. The tool computes best practices from other cities.

Adaptation and mitigation interactions can be classified in the following ways:

- **Piggybacking** opportunities emerge when a city might already be doing something that mitigates greenhouse gas emissions or makes the city more resilient and is able to add to that effort.
- **Synergies** are when efforts to mitigate greenhouse gases also improve climate adaptation or vice versa.
- **Potential mal-investment** is when a city might do something to mitigate greenhouse gas emissions without considering how resilient that may be. For example, building electric vehicle charging stations in an area prone to flooding.
- **Trade-offs with mitigation and adaptation** could occur when actions to improve a city's resilience might increase greenhouse gas emissions. For example, having air conditioner units that emit greenhouse gas emissions to offset a heat island effect caused by greenhouse gas emissions.

Following the presentation on risk assessments and climate mitigation and adaptation interactions, city delegates participated in an exercise where they discussed potential climate and mitigation interactions they have experienced or could envision implementing in their respective cities.



The day concluded with city delegates working on their post-City Academy action plans.

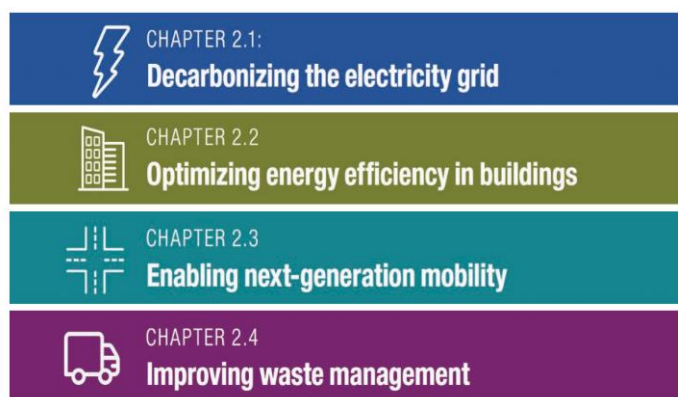
Day 2: September 17, 2019

Prioritizing climate action: how to select the most appropriate climate actions for your city

Study conducted by McKinsey and C40
Andrea Fernandez, C40

This session focused on the McKinsey and C40 report titled, Focused Acceleration: a strategic approach to climate action in cities to 2030. The research was conducted to understand climate actions that provide the greatest reduction in greenhouse gas emissions given a city's context. Cities were grouped based on the following typologies: small, high income, innovator city; large, high-income, dense city; middle-income mega city; large, middle-income, semi-dense city; low-income mega city; and large, low-income, leapfrog city.

In this study, over 450 climate actions were assessed based on cost and impact. The report included four major focal areas of opportunity, highlighting 12 actions that were considered the most impactful and affordable. The four major categories are shown in the figure below.



Of the four major opportunities for cities to improve climate actions, there were 12 major key actions that are the most impactful in terms of greenhouse gas emissions and cost-effectiveness. The study aimed to find climate actions that would catalyze systemic change, have the highest potential to reduce greenhouse gas emissions, and enable cities to focus on a limited number of climate actions. Additionally, the opportunities that the study focused on provide a positive return on investment in the mid- to long-term time frame. The most impactful and cost-effective 12 actions are as follows:

- **Decarbonizing the electricity grid:** Centralized renewables and distributed renewables

- **Optimizing energy use in buildings:** New build standards, building envelope retrofits, HVAC and water heating, lighting upgrades, and building automation and controls
- **Enabling next-generation mobility:** Transit-oriented development, mass transit, walking, and cycling, next-generation vehicles (shared, connected EV-AVs), and commercial freight
- **Improving waste management**

The actions a city prioritizes will depend on context. The report provides targets for each city, based on its typology, to provide a roadmap for cities seeking to mitigate greenhouse gases in accordance with the Paris Climate Agreement.

New York Climate Action Plan Case Study

New York City (NYC) already had a climate action plan in place to reduce greenhouse gas emissions by 80% by 2050. NYC is one of eight cities pilot testing 1.5-degree Celsius compatible plans—to reach net zero emissions by 2050. C40 provided support to help New York City prioritize their actions to accelerate their existing climate action plan. NYC then developed a detailed implementation strategy for the prioritized actions. Below is the process by which NYC amended their climate action plan to make it Paris Climate Agreement-compatible and the general approach C40 takes with selecting the most appropriate climate actions for a city.

1. Identify Actions

Identifying actions and including relevant stakeholders are the first steps to prioritizing climate actions. NYC identified over 160 actions, primarily based on actions they had already included in their previous climate action plan. Some actions could stand alone while others were incorporated as sub-actions.

2. Reduce number of actions and develop implementation details for each action

Reducing the number of actions should involve more stakeholders to facilitate robust discussions. Other agencies should provide more information about how the actions will reduce greenhouse gas emissions. Working across agencies and sectors creates a more cohesive set of actions and helps to identify which actions to prioritize. In NYC, the climate action team created a template for other agencies to provide feedback including the cost, timeline and benefits of these actions.

3. Identify criteria to prioritize actions and develop criteria methodology

This is a data gathering step to help a city map what is most important for their city and evaluate the cost of the actions. It is important to consider not only the start-up cost but operating costs that might be necessary. Understanding the benefit potential of climate actions will help make the case for climate action. These benefits could include equity, job creation or urban resilience. Finally, understanding what is both technically feasible and politically feasible will allow for prioritization of climate actions. In NYC, reducing

greenhouse gas emissions was their most important criteria with their 1.5-degree Celsius compatible climate action plan.

4. Evaluate actions using the criteria and rank actions

Evaluating criteria enables actions to be ranked based on a city's priority. Once the actions are ranked, the city should determine whether the action is a city or non-city action and if other stakeholders should be involved. In the case of NYC, the city prioritized climate action based on greenhouse gas mitigation and economic growth.

5. Review and verify actions with stakeholders

Once the climate action list has been created and ranked, cities should then allow other stakeholders to review it. Particularly those who provided guidance and expertise in the data gathering phase. This includes stakeholders within the government as well as civil society.

6. Finalize actions

The final step is to turn the climate action priority list into the climate action plan.

Following the presentation covering how to prioritize climate actions, the city delegates practiced prioritizing climate actions. The decisions people made were not just based on greenhouse gas emissions reductions but also on the cost and benefits of the action.

Making the case: How to leverage co-benefits of climate action to get everyone excited about it?

Lina Lopez, C40

Some challenges preventing cities from taking urgent climate action include: political will, lack of funding, public reluctance, engagement of stakeholders, lack of clear targets, lack of knowledge. As a result, C40 recommends using a benefits approach to capitalize on benefits to persuade decisionmakers to act. A benefits approach finds synergies to address challenges a city may encounter while climate action planning. For example, a synergy could include reducing greenhouse gas emissions and improving air quality. In this case, the well-being of residents is increased through a reduction in premature deaths and increased life expectancy. This climate action would ultimately avoid the cost of medical care, which can be assigned an economic value to make the case for climate action. The benefits approach, demonstrated by the figure below, can extend beyond the apparent environmental benefits.

Benefits approach to Climate Action Planning



Mexico City implemented a benefits approach to reduce the use of cars. This also improved last mile connectivity. The city installed more biking and walking facilities and found that each user increased their physical activity by 15 minutes per trip, thus 30 minutes each day. The health benefits per user included a 10 month increase in life expectancy, 150 minutes of weekly physical activity, 14% reduction in Type II Diabetes, 100% of the World Health Organization physical activity target, and a 22% reduction in cardiovascular diseases. Non-motorized transportation infrastructure that reduces greenhouse gas emissions and cleaned the air had cascading health benefits.

Medellin Case Study

Medellin is in the process of climate action planning; they have updated their greenhouse gas emissions inventory and are working on their climate risk assessment and drafting their climate action plan. Through their greenhouse gas emissions inventory, Medellin realized that 43% of their emissions are from transportation, 35% from energy, and 22% from waste. In terms of climate adaptation and resilience, Medellin conducted a risk assessment to understand their most vulnerable areas. Through this assessment Medellin found that flooding is an issue, occurring about five to 10 times per year with the intensity of floods increasing each year. Additionally, wildfires are of concern—Medellin experienced almost 50 wildfire events in one month.

With this information, Medellin was able to understand how to reduce greenhouse gas emissions and improve the city's resilience. Prior to C40's involvement in Medellin's climate action plan, the city had a plan but the terms by which climate actions would take place and their targets were undefined. C40 has helped Medellin to create realistic targets and terms to improve implementation and align the climate action plan with the Paris Climate Agreement.

During the climate action planning development, city delegates noticed that the Medellin's institutional framework for environmental management is separate from its climate change work. City delegates found that climate change officials should be integrated with other departments and committees such as air quality and ecosystems. There are synergies among these departments but are not reflected with institutional operation. Climate action planning facilitates integrated planning, but Medellin realized that it had to be intentional.

Air quality was Medellín’s primary driver for climate action planning, it was an apparent concern as it was visibly impacting everyone. The air quality became a crisis, because Medellín has experienced rapid urbanization and Medellín is situated in a valley that traps polluted air. Civil society protested the air quality crisis including placing masks on statues to draw attention to the issue. The air quality crisis, while concerning, was also an opportunity for the city to take action to mitigate greenhouse gas emissions. The city was focused on reducing particulate matter 2.5 (PM2.5) to improve the air quality. Medellín first conducted an inventory of PM2.5 and found that the primary cause of this pollutant was vehicle emissions and the secondary factor was factories, 82% and 18% respectively. While PM2.5 and CO2 are different pollutants, the sources of emissions overlap through vehicles, buildings, and industries.

In response to the air quality crisis, Medellín has taken the following actions to reduce emissions and improve the city’s quality of life. The city has implemented an early warning system to notify the public about the quality of the air. The early notification system gives residents the ability to make decisions and hold the government accountable. This was enacted jointly by the Environment Secretariat, Mobility Secretariat, air quality authority and Health Secretariat.

Additionally, Medellín aims to increase its green space and green corridors by 2030. This action occurred in response to temperature regulation to mitigate the urban heat island effect in Medellín. Green space will make Medellín more resilient to climate hazards such as flooding.

In order to reduce vehicle emissions, Medellín is actively shifting its bus fleet to electric. The city recently bought 64 electric buses with plans to put them into service by the end of 2019. The city has passed regulations to improve the quality of fuel to decrease pollution. Finally, the city has improved its walking and cycling facilities to increase non-motorized transportation by adding 42 bike stations.

Before and After photos of Non-motorized Transport infrastructure installation on Paseo Bolívar



Medellín is in the process of creating their climate action plan. The city has committed to align its climate action plan with the Paris Climate Agreement but is still in the process of finalizing it. Prior to becoming a C40 city, Medellín did a climate action appraisal using an external consultant.

Stakeholder engagement with Climate Action Planning

Maryke van Staden, ICLEI

Since urban systems are complex entities, it is important to think outside of the box when engaging stakeholders. For instance, cities are not isolated units, they are part of a city-region territory or metropolitan area. In order to adequately include stakeholders, awareness raising should be integrated into the climate action planning process. This will help stakeholders to understand their importance in the climate action planning process. Not only should beneficiaries of the climate action plan be considered, but service providers as well. The process should be inclusive and transparent, civil society needs to know that the city will work with them and serve them.

In order to implement climate plans, connecting and mobilizing stakeholders are integral to make climate a priority. Mayors and councilors need to be in support of climate action planning as well as officials across party lines. Once support internally is established, climate action should also include external stakeholders and civil society. Stakeholders should be considered during all phases of climate action. During the research and data gathering phase civil society can contribute local expertise, this could include businesses, NGOs, citizen groups, etc. Stakeholders who are primary greenhouse gas emitters should also be involved; this could include high intensity businesses and industries.

Climate action has the potential to empower stakeholders and be inclusive. For example, local governments could create a visual climate action plan that allows stakeholders to be involved in the process. Creating community buy-in holds local governments accountable and creates more enthusiasm with the project. Including stakeholders throughout the process, takes into account vulnerable populations and local priorities. Transparency and inclusivity are key to gain trust and garner stakeholder support for climate action.

Exploring the importance of cooperation across different levels of government

This session included presentations from the City of Recife and the State of Pernambuco, the state to which Recife belongs. The delegates from Recife and Pernambuco discussed their collaboration to advance climate action in their city and state. They noted it is important to find the right partners. For climate action to have a global impact, stakeholders need to be involved. The City of Recife has been active with climate action and has conducted a greenhouse gas inventory. Because Recife had the technical expertise, city delegates worked with the State of Pernambuco to conduct a statewide greenhouse gas inventory. Recife has also worked to implement climate change policy at the state level in Pernambuco. The State of Pernambuco has taken action to disseminate the importance of climate action among the state government agencies to bolster support. The State of Pernambuco is working to increase implementation that aligns with their plans by involving stakeholders in the planning process, raising awareness, and disseminating information.

Vertical integration and climate action planning

Wee Kean Fong, WRI

Since cities do not have control over all emission sources in a city, it is important for cities to think about what is in their control and how to collaborate with other levels of government to reduce emissions. Municipal governments do not operate in isolation. Multi-level coordination is unavoidable with climate action planning.

While it is imperative cities collaborate with metropolitan, state and national governments, most national governments do not have a climate action strategy. Moreover, cities are not considered in country-level Nationally Determined Contributions (NDCs). NDCs were established through the Paris Agreement where countries created long-term greenhouse gas mitigation targets. Only 14% of NDCs consider the potential of cities to drive decarbonization or enhance resilience. They rarely account for local action in national targets.

Challenges to vertical integration exist. Cities and national governments may be siloed institutionally limiting coordination, especially if there is not a budget to incentivize collaboration. Limited capacity, such as technical capacity, financial capacity and human resources capacity, can be limited at the local level hindering multilevel integration. Political will is the most important enabling condition to facilitate multilevel governance. Other enabling conditions for multilevel integration include leadership, engagement, institutional framework, finance, and transparent communication.

City delegates participated in an exercise where each city identified a major emission source in their city that they do not have full control and city delegates discussed their challenges with reducing emissions, how they engage different levels of government/stakeholders and their lessons learned.

City clinics

The city clinics allowed cities to gain perspective from other city delegates about challenges they are confronting within their respective cities. City delegates exchanged knowledge and learned from one another through this exercise. The takeaways and recommendations from city delegates are enumerated below.

Abidjan

Green city cover

From project plan to implementation (financing, stakeholder engagement, etc.) What is next?

- Create a fund at the municipal level to finance the project
- How to cooperate and collaborate with the city of Dakar on this project
- Work with schools and students to promote reforestation "one school, one forest"
- Define areas to plant trees
- Identify suitable types of trees

- Start a “day of the tree”
- Involve the ministry of water and forests
- Involve the community through programs such as “one child, one tree” for each newborn or “adopt a tree”
- Engage private sector for funding
- Start a campaign (television, door to door, telephone)
- Create penalties/fines in the case of deforestation
- Start a volunteer program for people to work in nurseries
- Engage academia
- Consider how to ensure the financing and sustainability of the project
- Draft an urban forest manual
- Recife has a number to call to plant trees
- Recife hosted a green marathon and added it to the city’s agenda
- Have an environmental education program about home gardens/planting
- Implement an afforestation project together with the schools

Baja California Sur

Topic: Increase renewable energy use

- Tourism
 - Consider an eco-tax on tourism or a new type of tourism
 - Promote responsible, sustainable tourism to reduce consumption in hotels
 - Create a green hotel list and incentivize green hotels through marketing
 - Incentivize retrofits in old hotels
 - Show that the tourism industry will benefit from a more sustainable energy grid by demonstrating how much hotels lose when the grid crashes
- Incentivize renewable use
- Celebrate leaders who promote clean energy using awards
- Stress the positive health impacts
- Consider using penalties if people do not switch to renewable energy by a set deadline
- Demonstrate that cost might be higher presently, but will be cost-effective in the future
- Use energy use comparisons akin to neighbor shaming
- Provide government subsidies
- Set low-carbon standards
- Create a certification program
- Decentralize and democratize energy access

Beijing

Climate governance

How to reduce emissions from services (private business such as restaurants, offices, hospitals etc.) that are not municipality-owned?

- Develop standards that can be enforced through construction and retrofits
- Incentivize developers who are willing to reduce emissions through extra rights or reduced rates or taxing

- See NYC retrofit policy
- Compulsory disclosure and “name and shame”
- Run a public campaign and use customers as a tool
- Provide incentives for private/residential upgrades on infrastructure or better performing appliances for example

Dakar

Topic: Air pollution in Dakar

Can cities share their experiences and technical assistance to solve this issue?

- Transportation
 - Transport planning has to be done in conjunction with housing and infrastructure plans
 - Consider an electric BRT or using electric buses on the highest trafficked roads
 - Close main streets on Sunday for recreation
 - Have a no-car day once a month
 - Promote green or electric taxis
 - Emissions monitoring fund to pay for public transit investments and non-motorized transit infrastructure
 - Improve public transit
 - Consider improving quality of fuel, similar to what Medellin did
 - Create restrictions for taking a car into the city center, based on license plate
- Green infrastructure
 - Plant shrubs along the most polluted routes creating green corridors
- Positive measures or actions such as purchasing new vehicles, using bonds
- Privatize the technical control company to improve corruption

Johannesburg

Green building policies

How to take into account informal settlements and inclusivity? How do you incentivize developers to implement green building policy outcomes?

- Collect waste collection fees
- Create a fund from fees to fund retrofitting informal settlements
- Relocate informal settlements to government-funded legal settlements
- Use stakeholder engagement strategies to build trust between informal communities and the government and identify real incentives
 - Could identify the top 10 tenants and engage with them directly
- Negotiate land titles/cooperatives to improve housing
- Create a new model for municipal retail model, similar to the California model
- Use/improve private and personal credit access
- Make green building policies attractive through tax breaks, have school kids measure home emissions, have neighborhoods compare energy usage, etc.
- Shame the top 10 energy users in Johannesburg

- Engage energy service providers who can create innovative business models
- Incentivize green buildings through a certification program, like LEED

Lima

Occupation of high-risk zones

How do we avoid this occupation? How do we relocate populations who have settled in these risky zones?

- Relocate populations settled in high-risk areas and destroy the informal settlements
- Restore the high-risk area and create a park along the rivers
- Design/redesign public spaces around the creeks with civil society
- Create an information system about high-risk flood zones
- Create a community alert system
- Provide housing assistance through the government for people living in the high-risk flood zone
- Incentivize construction of resilient homes near the river and consider the cost to relocate when disasters occur

Xalapa

Public participation

How to overcome the technical nature of a climate action plan to involve other stakeholders?

- Involve academia
- Engage the private sector through a carbon market
- Create a social media strategy
- Relate the co-benefits of climate action planning to those that are of public interest, such as health, flooding, droughts etc., to boost participation
- Use land use planning and adaptation led by civil society
- Implement environmental education courses, such as “plastico precioso”

Following the city clinics, city delegates worked on their city action plans where they reflected on what they learned and what they would like to take back to their cities. City delegates thought about how the GPSC Resource Team can help them and which cities they would like to connect with. See Annex 2 for details from each city. The City Academy concluded with a certificate ceremony for the city delegates who participated in the entire course, pictured below.



Annex 1. City Academy Agenda

Sunday, September 15, 2019

- 19:00 – 20:30: Welcome dinner with GPSC city delegates (Optional). Pullman São Paulo Ibirapuera Hotel – Main restaurant. Organized by C40.
Details: 18:45 meet in the hotel lobby

Monday, September 16, 2019			
Day 1: Planning			
Time	Activity	Details	Lead
8:15 – 9:00	Transport to UMAPAZ venue	Meet in the hotel lobby at 8:15	C40
09:00 – 9:30	Welcome and Introduction to the City Academy	Overview of the agenda, house rules and objectives, brief introduction of the Resource Team	C40 Moderated by Diego Riaño

Monday, September 16, 2019

Day 1: Planning

Time	Activity	Details	Lead
09:30 – 10:00	Introductions city delegates	Introductions from city delegates. Ice-breakers. Taking stock of expectations.	C40 Moderated by Diego Riaño
10:00 – 10:30	The climate urgency and the opportunity for cities	<u>Presentation:</u> Explaining the global framework on the importance of local climate action: 1.5 degrees IPCC report for Urban Policy Makers, Global Covenant of Mayors	C40 Speaker: Andrea Fernandez
10:30 – 11:00	Coffee Break		
11:00 - 13:00	Climate Action Planning in Cities. Where to start? What have we learned so far?	<p><u>Presentation:</u> How to build a climate action plan? Overview of the process: commitment, governance, synergies. Types of plans. What it means to develop a 1.5 degree aligned plan.</p> <p>Also, this session will give a brief introduction to online resources for further consultation.</p> <p><u>Case study:</u> An overview of São Paulo's journey to develop a</p>	C40 Speaker: Jana Davidova Special guest Speaker: Laura Lucia Vieira Ceneviva, São Paulo City

Monday, September 16, 2019

Day 1: Planning

Time	Activity	Details	Lead
		<p>climate action plan – what have we learned?</p> <p><u>Group discussion:</u> Q&A session with the City of Sao Paulo.</p>	
13:00 – 14:00	<p>Lunch</p> <p>(Time for bilaterals between cities)</p>		
14:00 – 16:00	<p>How to use GHG inventories as a supporting tool for decision-making?</p>	<p><u>Presentation:</u> Introduction to the GPC, relationship with the GCoM's reporting framework, and vertical integration of GHG data. What is the motivation of developing GHG inventories? What is the process of developing GHG inventories?</p> <p>How does the data support decision-making?</p> <p><u>Case study:</u> Baja California Sur, Mexico</p> <p><u>Group discussion:</u> What is your motivation for developing your city's GHG inventories?</p> <p>Which standard/ methodology/ framework was used for developing your GHG inventories?</p>	<p>ICLEI / WRI</p> <p>Speakers: Cesar Carreño (ICLEI) and Wee Kean Fong (WRI) are session technical leads</p> <p>Case Study Speaker Luis Soliz, Baja California Sur</p>

Monday, September 16, 2019

Day 1: Planning

Time	Activity	Details	Lead
16:00 – 16:30	Coffee Break		
16:30 - 17:30	How to conduct a risks assessment?	<u>Presentation:</u> Why is it necessary? Relationship between adaptation and mitigation. How to identify and assess current and future climate hazards? – What do you do with the information collected? Overview C40's Climate Risk Assessment Guidance and AMIA tool.	C40 Speaker: Jana Davidova
17:30 – 17:45	Time for action planning (moderated by C40)		
17:45 – 19:00	Back to the Hotel – Transport provided		
19:00 – 20:30	Official Networking Dinner	City delegates and Resource Team group dinner – Details TBC Transport provided	C40

Tuesday, September 17, 2019

Day 2: Implementation

Time	Activity	Details	Lead
8:15 – 9:00	Transport to UMAPAZ venue	Meet in the hotel lobby at 8:15	C40
09:00- 9:15	Check-in: reflections from previous day	Day 1 Recap	C40 Moderated by Diego Riaño with quick participation from the audience
9:15 - 10:15	How to prioritise climate actions?	<u>Presentation:</u> What are major actions cities can take to mitigate emissions with the largest impact? Overview of C40's Focused Acceleration Report <u>Case study:</u> New York City Action Prioritisation (best practice example)	C40 Speaker: Andrea Fernandez

Tuesday, September 17, 2019

Day 2: Implementation

Time	Activity	Details	Lead
10:15 – 10:45	Coffee Break		
10:45 – 11:45	Making the case I: How to leverage co-benefits of climate action to get everyone excited about it?	<p><u>Presentation</u>: Co-Benefits of Inclusive Climate Action (health, inclusivity, economic)</p> <p><u>Case study</u>: Medellin Climate Action Plan – Focus in Air Quality</p>	<p>C40</p> <p>Speaker: Lina Lopez (C40 City Advisor Medellin)</p>
11:45 - 12:45	Making the case II: How to engage with relevant stakeholders to get a strong implementation coalition?	<p><u>Presentation</u>: Mapping stakeholders, engagement strategies, the importance of an inclusive approach, identifying synergies and integration opportunities and engagement with business community</p> <p><u>Case study</u>: State of Pernambuco, Brazil</p> <p><u>Group discussion</u>: How to engage relevant stakeholders?</p>	<p>ICLEI World Secretariat</p> <p>Speaker: Maryke van Staden</p> <p>Guest speaker: Inamara Santos Melo, Pernambuco State Brazil</p>
12:45 – 13:45	Lunch		

Tuesday, September 17, 2019

Day 2: Implementation

Time	Activity	Details	Lead
	(Time for bilaterals between cities)		
13:45 – 14:45	How to coordinate actions between different levels of government?	<p><u>Presentation</u>: Importance of vertical integration. How can cities achieve more through collaboration?</p> <p><u>Group discussion</u>: Breakout groups to discuss case studies</p>	<p>WRI</p> <p>Speaker: Wee Kean Fong (WRI)</p>
14:45 – 15:45	<i>City Clinics: Presentation of city challenges (Part I)</i>	Simultaneous short presentations (no slides) by the GPSC city delegates on specific challenges from their cities to get feedback from other city delegates	<p>Pre-identified case studies:</p> <p>Abidjan</p> <p>Beijing</p> <p>Dakar</p> <p>Lima</p> <p>Xalapa</p>
15:45 – 16:00	Coffee Break		
16:00 – 17:00	<i>City Clinics: Presentation of city challenges (Part II)</i>	Simultaneous short presentations (no slides) by the GPSC city delegates on specific challenges from their cities to get feedback from other city delegates	<p>Pre-identified case studies:</p> <p>Abidjan</p> <p>Beijing</p> <p>Dakar</p> <p>Lima</p>

Tuesday, September 17, 2019

Day 2: Implementation

Time	Activity	Details	Lead
			Xalapa
17:00 – 17:30	Action Planning and Concluding remarks	<p>Concluding remarks by the Resource Team</p> <p>Every city will elaborate an Action Plan of what actions can be done after the City Academy</p> <p>Takeaways and feedback from participants (workshop survey)</p>	C40, ICLEI and WRI
17:30 – 19:00	Back to the Hotel - Transport provided		
19:00 – 20:30	Free night for city delegates	<p>An opportunity to dine out and explore the wonderful city of São Paulo. Dinner costs should be covered by each delegate.</p> <p>As an alternative option, dinner will be provided at the hotel for those delegates who wish to stay in.</p>	Own arrangements

Annex 2. City Action Plans

	City Action Plan			
City	What will be the main action(s) you will take to facilitate a 1.5 degree Celsius and resilient climate action planning in your city when you go back?	How will you advance that action as a result of what you learned at the Academy?	How can GPSC RT Help?	Which other cities/delegates would you like to connect with after the Academy?
Abidjan	<ol style="list-style-type: none"> 1. Update plans 2. Inform/include Director of management and development of Greater Abidjan (SDUGA) 3. Inform/include Director of sanitation and drainage 4. Waste collection 5. Capacity building (training/education) 6. National strategic plan for air pollution management 	<ol style="list-style-type: none"> 1. Based on the example of Sao Paulo: <ul style="list-style-type: none"> - Free up all resources and data. - Put in place a coordination committee with a leader 2. Take advantage of the lessons learned, of the positive experiences throughout the communications to improve our climate action planning 3. Create a partnership with the city of Dakar to improve air quality 	Inclusive partnership with C40 for the implementation of our priority actions	Sao Paulo, Beijing
Asuncion	Measurements of adaptation for flooding To have a GHG	Find financing and support to carry out the inventory Talk with the authorities	Financing Capacity building Help with the	San Pablo (Sao Paulo), Medellin

	inventory from GPSC Land Use Plan GHG Inventory	about the importance and benefits of the GHG inventory	creation of the city's land use plan	
Baja California Sur- La Paz	Construction codes Renewable energy Substitute diesel and combustible oil for natural gas	Start the elaboration of the climate action plan	1. Restructure an already created GHG inventory in accordance to the methodology presented here to create a climate action plan 2. Successful case studies with emission reductions implemented such as capture, electromobility, renewables, and construction codes 3. Measurement of contaminants 4. Training in order to utilize the resources center 5. How we can have a meeting with mayors in Mexico to share this agenda	Sao Paulo
Beijing	1. Park forward, low- carbon technology 2. Contact about carbon bilat? 3. Chinese	To build more bicycle lanes increase the number of people who bike		
Brasilia	1. Data-informed and community-driven: importance of systematization and regulation of public data and social control 2. When will Sao Paulo introduce BRT and	Importance of governance and social co-creation	Carry out the GPC inventory methodology GNP to have the data to compare between cities To relate the emissions inventory	Baja California Sur, Sao Jose Dos Campos Palmas, Xalapas, Johannesburg, Beijing

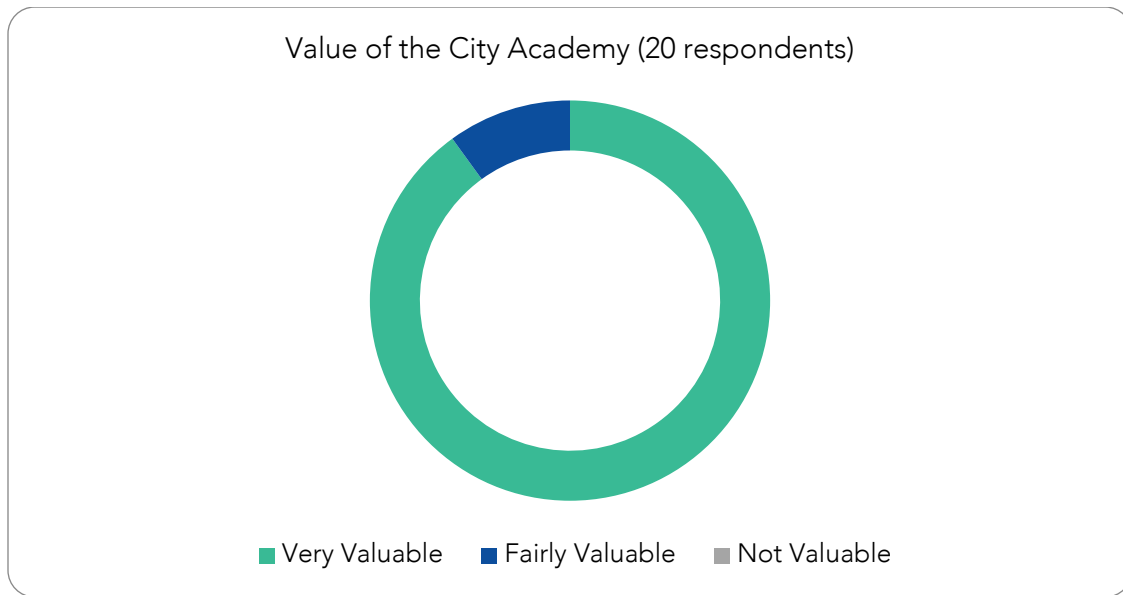
	expand the metro system?		to health Co-benefits * Evaluate improving problematizing * Prioritize better * Communicate better with the population	
Dakar	Invest in renewable energy Develop an integrated transit and land use plan for the city			
Johannesburg	1. The development of a green-building policy-- selling it to all the relevant stakeholders and clearly participating if to ensure ownership from all corners of society 2. Make use of data to support decision (effective) making and to obtain buy-in from all relevant stakeholders, particularly city leaders 3. Improve the relationship between the environment and planning departments to ensure alignment between planning and budgeting processes 4. How does a city influence national government to change its approach on supply and production of electricity	1. Encourage the transport department to consider acquiring electric buses instead of diesel-based buses to reduce emissions: trade-offs could include increased electricity usage 2. What is the total contribution of the green building policy to the climate action plan? What research is required to understand this? 3. How best to incorporate cycling in the inner-city 4. Buy-in from the city leaders!	Get information from: ESCOs and tenants making energy use commitments	

Lima	<ol style="list-style-type: none"> 1. Is it necessary to create intermediate governments between the states and municipalities? 2. Is it necessary to create sub/regional and or metropolitan governments? 		Economic analyses to facilitate flow of public resources oriented to prevent disasters	La Paz (mayor)
Melaka	<ol style="list-style-type: none"> 1. How to create awareness to public (all age factors) for them to better understand climate change? What are the challenges? 2. Building Energy Efficiency Transport like e-vehicles. 	Engage with local stakeholders	<ol style="list-style-type: none"> 1. How about technical assistance by GPSC team on this climate action planning project? 2. The main concern/restriction to create CAP is financial support. How GPSC Resource Team can help Melaka? 3. Financial aid to implement the action plan 4. Technical assistance/ coordination 	Sao Paulo (can Sao Paulo assist all the way to create the climate action plan with facilitation by GPSC)
Recife	<ol style="list-style-type: none"> 1. How important is it to integrate to the national narrative? 2. Thinking about implementation from we should bring the concept and action to climate justice as a base of all something and actions? 3. Can you buy energy of a specific source to get lower emissions factor like solar, wind... 		<ol style="list-style-type: none"> 1. How to incorporate sectoral policies climate change issues 2. How to minimize the impacts of climate change on social inequality 	

	<ul style="list-style-type: none"> 4. Sustainable buildings 5. Mapping of critical areas 6. Publicizing the climate agenda for its daily operation in the city is a challenge. We can start with the cities operating agencies themselves. 7. Investment in active mobility 8. Program of public/population housing 9. Expansion of green areas 			
Sao Jose Dos Campos	<ul style="list-style-type: none"> 1. Increase street quality and tree and space for pedestrians 2. Transform urban mobility 3. Recovery of green urban areas 	<ul style="list-style-type: none"> 1. Recognize ongoing actions that are not yet linked to climate but are the way [of the future] 2. Find a main driver to develop a climate plan in my city 3. Improve GHG analysis with other plans targets 4. Carbon Decoupling Index 	<ul style="list-style-type: none"> 1. Engage stakeholders 2. Turn climate planning into a non-environmental policy, spread it 3. Technical assistance to incorporate climate planning into other public policies 	Medellin, Xalapa
Xalapa	<ul style="list-style-type: none"> 1. Transport--reduce private car use 2. Waste--good organic waste management 3. Housing--water, solar, heater 	<ul style="list-style-type: none"> 1. Implement the inventory 2. Budget for each action 	<ul style="list-style-type: none"> 1. How to generate awareness of climate change in the majority of the population? 2. How to generate enforcement? 	

Annex 3. City Academy evaluation

All city delegates found the City Academy on Climate Action Planning to be valuable, 18 delegates noted it was very valuable while 2 delegates noted it was fairly valuable. City delegates found that sharing knowledge and experiences among each other was most valuable. City delegates felt that access to resources and knowledge at these events was also valuable.



In order to improve the City Academy, delegates thought that adding site visits and more case studies would make the event more fruitful. Other delegates would like the City Academy to focus on the private sector and highlight Africa's context and challenges more explicitly.