RECIFE
PREFEITURA DA CIDADE

ICLEI
Local Governments for Sustainability

URBAN LEDS
URBAN LOW EMISSION DEVELOPMENT STRATEGIES

LOCAL CLIMATE ACTION PLAN OF THE CITY OF RECIFE

2020

SUMMARY

ACKNOWLEDGMENTS

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December 2020

ICLEI; Urban-LEDS II: Accelerating Climate Action by Promoting Low Carbon Development Strategies, 2020 Development Strategies, 2020; Recife Climate Action Plan - Summary. São Paulo, Brazil.

A COMMITMENT TO THE CITY

This publication presents a summary of the Local Climate Action Plan, prepared by the City of Recife with the support of ICLEI South America, through the Urban-LEDS project in its second phase, which aims to adapt the territory and reduce Greenhouse Gas emissions so that the city becomes carbon neutral and resilient by 2050. In this way, it can face climate change more effectively and improve sustainability in its various dimensions.

The path chosen to achieve this goal was the articulation between the Municipal Executive Power and the different sectors of Recife's society. The results are targets and priority actions drawn up throughout 2020, which seek to reduce or neutralise carbon emissions. At the same time, they aim at building a sustainable, inclusive and resilient city, which reduces social inequality, generates employment and income opportunities within a green economy logic and recovers and conserves natural resources.

Above all, this document reinforces public authorities' commitment to the city, its environment, and, mainly, its population in this and future generations.

To read the full version of the Local Climate Action Plan of The City of Recife, please visit the website of Recife's Secretariat for Environment and Sustainability: http://meioambiente.recife.pe.gov.br/mudancas-climaticas

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PRESENTATION

GERALDO JULIO, MAYOR OF THE CITY OF RECIFE

"For seven years, Recife has been building a consistent track record in tackling the climate crisis through concrete actions. This plan is a further step in Recife's partnership with ICLEI - Local Governments for Sustainability, under the Urban-LEDS II project, funded by the European Commission and implemented in partnership with UN-Habitat. The study was developed by the Secretariat for Environment and Sustainability and the Pelópidas Silveira City Institute, in partnership with ICLEI, and built collaboratively with municipal bodies, youth and civil society. In 2019, by being the first city in Brazil to recognise Climate Emergency in its territory, Recife highlighted climate change's central role in the city's future. The current plan is a beacon that, aligned with the city's actions, guides us towards an even more ambitious and sustainable scenario. Recife continues to lead the country's environmental and urban sustainability movement, aware of its role in the national climate scenario and hopeful that this example becomes the rule in the country".

JOSÉ NEVES FILHO, SECRETARY FOR ENVIRONMENT AND SUSTAINABILITY OF THE CITY OF RECIFE

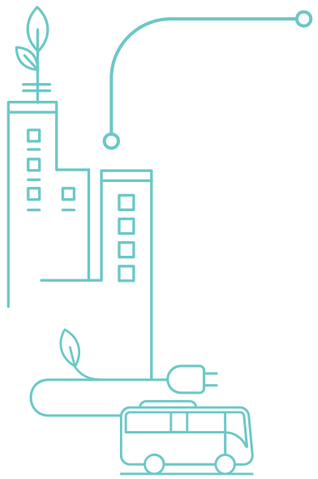
"Climate change threatens the future of our planet, but we are still in time to adapt to it and mitigate its effects with new ways of acting, thinking and planning concrete mitigation and resilience activities. Recife's Local Climate Action Plan (LCAP) is a strategic document that demonstrates how the city will align its actions with the Paris Agreement commitments, with targets for the city's reduction of Greenhouse Gas (GHG) emissions and defining priority actions to mitigate climate change's effects by 2050. Furthermore, the LCAP will also serve as a basis for all other municipal plans, as it will guide public policies in a transversal, holistic and participative way. Alone we cannot achieve significant advances, but we can go further by acting in partnership and encouraging our citizens. Recife's Local Climate Action Plan evidences the city's true commitment to raise awareness and transform visions and attitudes, showing the possibility of building a promising future for our world".

JOÃO DOMINGOS AZEVEDO, PRESIDENT OF THE PELÓPIDAS SILVEIRA CITY INSTITUTE

"It is with great satisfaction that the Pelópidas Silveira City Institute (ICPS) participates in the construction and delivery of Recife's Climate Action Plan (LCAP). This Plan results from the collective work that counted with the collaboration of all Secretariats of the Municipality of Recife, under the leadership and personal commitment of Mayor Geraldo Julio. In particular, it results from the city's dialogue with its citizens, listening to society's various sectors. It is also the consequence of the promising partnership between the City Hall and ICLEI, initiated in 2013. It is an opportunity to bring together all the learning accumulated since 2013 and leave the legacy of an even bolder plan. Its ultimate goal is the city's resilience and decarbonisation by 2050. A few years ago, we would have thought that this goal would not be possible, but when we evaluated the GHG emissions inventories carried out by the City Hall for the years 2012 to 2017, we realised that Recife is up to this challenge. It is a big challenge, but Recife is a city driven by challenges!"

RODRIGO PERPÉTUO, EXECUTIVE SECRETARY OF ICLEI SOUTH AMERICA

"First Brazilian city to recognise the climate issue as an emergency, Recife positions itself and differentiates itself from a robust legislative framework that, coupled with effective governance, is responsive to the challenging context we live in. The political commitment of Mayor Geraldo Julio as the City of Recife's main representative to chair the ICLEI Regional Council materialises the understanding that the climate agenda is a priority in the journey towards equitable, resilient, low-carbon, circular and nature-based development. Moreover, Recife's city is a signatory of the main international commitments related to climate and sustainable development, being skilled in locating them in concrete actions for the population's well-being, with an inclusive stance, strengthening the concept of Climate Justice. The Climate Action Plan places Recife as a Latin American and global reference regarding the fulfilment of the Paris Climate Agreement and will serve as a dynamic reference for the city to achieve its carbon emission neutrality and be adapted and resilient to extreme-nature events caused by global warming."



WHY IT IS IMPORTANT TO HAVE A CLIMATE ACTION PLAN FOR RECIFE

Climate change is a global reality with different impacts[1] on each location, be it a country, a city or a neighbourhood. Due to its geographical characteristics and its history of urban occupation, Recife was appointed in 2007 as one of the 16 most vulnerable cities to these effects by the Intergovernmental Panel on Climate Change (IPCC).

This is because it is a city with a high average temperature, low altitude, situated near the coast, full of canals and rivers, with water tables very close to the surface. It is densely populated, with impermeable soil and many communities living with precarious infrastructure on the riverside and the hillsides. These characteristics bring risks and climate vulnerabilities that need to be urgently addressed.

But while climate change imposes many challenges, it also brings opportunities, since facing it means making the city a better place. This is the path that Recife has chosen to follow and, since 2013, it is a leader in climate action.

Among the initiatives already made, it is worth mentioning the realisation, in 2019, of the Climate Risk and Vulnerability Assessment and Adaptation Strategy of the Municipality of Recife, which identified the main climate threats to the city: floods, heatwaves, landslides, contagious diseases, meteorological drought and sea level rise. It also carries out, periodically, inventories* of Greenhouse Gas[2] (GHG) emissions, to identify the sectors that most contribute to climate change and monitor the effectiveness of mitigation actions[3].

1. Effects on human and natural systems (on life, ecosystems, health, economic resources, society) of extreme weather events and climate change.

2.These gases absorb part of the Sun's rays and redistribute them as radiation in the atmosphere, warming the planet (Greenhouse effect). The excess of these gases in the atmosphere, however, is responsible for climate change. Among the main GHG are: CO_2 (carbon dioxide), CH_4 (methane), N_2O (nitrous oxide) and CFCs (chlorofluorocarbon).

3. Actions to reduce Greenhouse Gas emissions and consequently mitigate climate change.

In 2020, the city prepared a **Local Climate Action Plan (LCAP)**. After all, it is necessary to have a strategic plan with clear and feasible targets, to effectively reduce GHG emissions and make the desired goals a reality.

Recife's LCAP was created from the dialogue, articulation and efforts of the public authorities, the private sector and the civil society. The process was led by the Secretariat for Environment and Sustainability of Recife, the Pelópidas Silveira City Institute and ICLEI South America, with UN-Habitat's support and financed by the European Commission, under the Urban-LEDS II project.

The plan's primary goal is the neutralisation of GHG emissions by 2050. In other words, the city has decided that it will become carbon neutral[4] in 30 years. The plan's approach is holistic, bringing a range of other benefits: creating socio-economic opportunities, reducing poverty and inequality, improving people's health and increasingly thriving nature.

Therefore, the LCAP is aligned with Recife's future vision of being a carbon-neutral, resilient, sustainable and inclusive city by 2050.

It is a vision also in line with the Recife 500 Years Plan, which states that by 2037, the year in which the municipality will complete five centuries, it will have more quality of life and social inclusion, with qualified urban spaces and a dynamic, safe, environmentally sustainable economy, with efficient and transparent governments.

4. Climate neutrality in the context of local governments is defined as the planned reduction and prevention of GHG emissions in their operations, in the community and across all sectors to an absolute net-zero emission level no later than 2050.

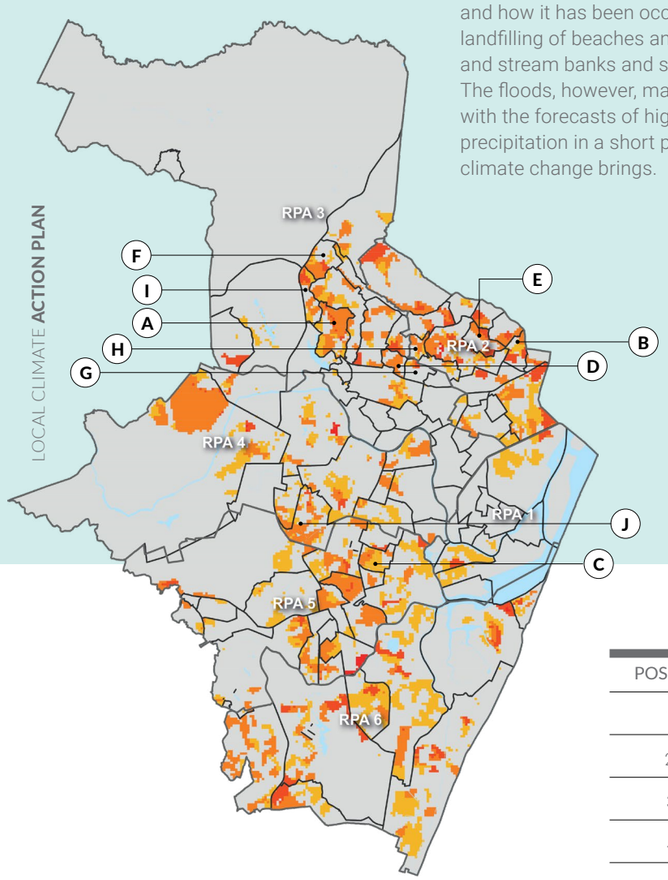
Recife will be carbon neutral, sustainable, resilient and inclusive by 2050.

** ICLEI South America supported the city in constructing its 1st Emissions Inventory (baseline year 2012) and its 3rd Emissions Inventory (baseline year 2016-2017).*

MAIN RISKS AND VULNERABILITIES

The *Climate Risk and Vulnerability Assessment and Adaptation Strategy of the Municipality of Recife - PE**, prepared in 2019, identified six main risks and vulnerabilities in Recife.

RECIFE'S MAP OF CRITICAL RISK (REFERENCE PERIOD 1976 - 2005)



FLOODS have always occurred in Recife because of its geographical characteristics, e.g. low altitude, the more than 70 river channels, and how it has been occupied: with landfilling of beaches and river and stream banks and soil sealing. The floods, however, may intensify with the forecasts of high levels of precipitation in a short period that climate change brings.

LANDSLIDES are a risk in hillside areas, where there are precarious constructions without adequate access to urban infrastructure and services. The interference of human actions in these places, such as removing vegetation cover, rubbish dumping and the absence of drainage systems and clogging of ditches, cause soil instability. Many Communities of Social Interest (CIS) will be more exposed to landslides' risk due to extreme events, such as heavy rains.

HEAT WAVES, and the frequency of extreme temperatures during day and night, are expected to increase as a consequence of climate change, according to the IPCC. They are aggravated by population densification and urbanisation patterns (verticalization, asphalting, suppression and poor distribution of green areas, etc.), increasing thermal discomfort, worsening air quality and causing respiratory diseases. Heat islands and heat waves cause health problems and influence the population's well-being, especially the lower-income, elderly and children.

DISEASES TRANSMISSIBLE by mosquitoes, such as dengue, zika and chikungunya, are a threat to the population due to a large number of humid areas and rising temperatures. For people in social vulnerability who live in precarious housing, the risk of contracting these diseases is more significant.

METEOROLOGICAL DROUGHT is related to rainfall below expectations, compromising the recharge of water bodies and water availability. The continuous water supply is not yet a reality for many of the most vulnerabilised communities, which could be the most affected by this phenomenon.

SEA LEVEL RISE is a phenomenon that is already underway. According to the Brazilian Research Network on Global Climate Change (Rede Clima), the average annual sea level in Recife has been rising, on average, by a little over half a centimetre (0.54 cm) per year since 1940. The Climate Risk and Vulnerability Assessment points out that 81.8% of urban buildings, which are less than 30 metres from the coastline and less than 5 metres high, should be quickly affected by sea level change. In all, the coast of Recife has 45.7% of its extension under a high vulnerability zone.

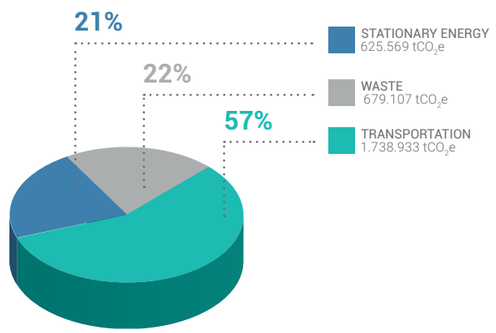
THE MOST CRITICAL NEIGHBOURHOODS

POSITION	NEIGHBOURHOODS	RPA
1st	**A.** Macaxeira	3
2nd	**B.** Campina do Barreto	2
3rd	**C.** Mustardinha	5
4th	**D.** Morro da Conceição	3
5th	**E.** Fundão	2
6th	**F.** Brejo da Guabiraba	3
7th	**G.** Alto José Bonifácio	2
8th	**H.** Alto Sta. Terezinha	2
9th	**I.** Córrego do Jenipapo	3
10th	**J.** Torrões	5

** Carried out by the City Hall, having as focal points the Secretariat for Environment and Sustainability and the Pelópidas Silveira City Institute, in partnership with ICLEI South America and WayCarbon, financed by the Development Bank of Latin America (CAF). See the complete document at: https://bit.ly/3qHV0l6.*

GREENHOUSE GAS EMISSIONS (GHG) IN RECIFE (2017)

The three sectors that contribute to the most emissions are Stationary Energy, Transport and Waste. In 2017, the city emitted just over 3 million tCO_2e.



Stationary Energy: emissions from fuel combustion and fugitive emissions provided by the processes of generation, distribution and consumption of energy (such as electricity).
Transport: emissions from the burning of fuels or the use of electricity from the network for road, rail and air transport.
Waste: emissions from the treatment and final disposal of solid waste, biological treatment of waste and treatment and disposal of liquid effluents (sewage).

THE PATH TAKEN SO FAR

It is not new that Recife acts to tackle climate change. In 2013, the municipality was chosen as one of the Urban-LEDS I Project model cities, an initiative funded by the European Commission and implemented by ICLEI - Local Governments for Sustainability, in partnership with UN-Habitat.

Urban-LEDS promotes the elaboration of low-carbon urban development strategies to achieve a more sustainable city. The project is active in eight countries, involving more than 60 cities, eight of which are in Brazil.

With the support of Urban-LEDS, Recife carried out its Greenhouse Gas (GHG) emissions inventories published in 2015 (baseline year 2012) and 2020 (baseline year 2016-2017). In 2014, it elaborated a first plan to reduce emissions: the Recife Sustainable and Low Carbon Plan. The target was to decline by 14.9% of emissions concerning the trend scenario projected for 2017.

Still in this phase, and as an example of the program's success, the city managed to reduce its emissions beyond the established target: in 2017, there was a 17.7% reduction in relation to the scenario projected for that year, and the city emitted 3.04 million tCO_2e (compared to the 3.7 million tCO_2e and forecasted in the Business As Usual - BAU scenario). Actions focused mainly on mobility, and solid waste treatment contributed to this result.

In 2018, the city joined Urban-LEDS II, with even bolder targets. In this second phase, a new GHG emissions inventory was conducted, this time taking 2017 as the baseline year, to understand the municipality's current emissions with updated data. Recife, in 2019, as a signatory city of the Global Covenant of Mayors for Climate & Energy, won three badges related to climate compliance, which refers to different aspects of the climate issue: mitigating GHG emissions, adapting to the effects of climate change and promoting climate planning.

The city was also selected to participate in a laboratory for climate action funding projects, the LEDS Lab, which will install photovoltaic panels at the Women's Hospital of Recife. In this second phase, the city elaborated this **Local Climate Action Plan (LCAP)**, with the definition of targets and actions to accelerate the decarbonisation and increase the city's resilience until 2050.

Still in 2020, there was another recognition: Recife was appointed as one of the 88 global cities in the "A List" of the Carbon Disclosure Program (CDP), which takes into account the municipality's commitment to transparency and its adaptation and mitigation targets and practices.

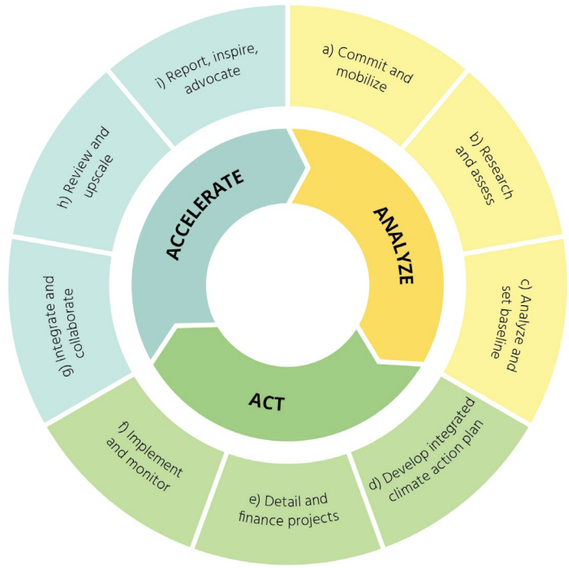
METHODOLOGY

The strategy to tackle climate change in Recife, of which the LCAP is part, was based on the Green Climate Cities - GCC methodology, developed by ICLEI in the Urban-LEDS I Project framework and follows the UN-Habitat principles. The GCC provides a step-by-step approach for city managers to take action to tackle climate change. This methodology is premised on sustainable development as low carbon, nature-based, equitable, resilient and circular.

Based on these premises and methodology, the construction of the LCAP followed, in general terms, the following steps:

- Analysis of documents and legislation of the municipal power related to the climate issue, as well as commitments and sectoral plans that demonstrate the city's commitment to the agenda;
- Interviews with public managers and technicians of the municipal management to understand the status of policies, programs and actions, raise more references, assess strengths and capacities of the city and gather information from relevant actors;
- Workshops with representatives of the various sectors and civil society for presentation, validation of information and prioritisation of actions;
- Debate with members of the Committee and Executive Group on Sustainability and Climate Change (COMCLIMA and GECLIMA), municipal management secretaries, municipal and state secretariats' technicians and representatives of the various spheres of society about the result of objectives, goals and actions established in the LCAP (learn more on page 15).

THE LCAP DIRECTLY CONTEMPLATES THE ANALYSIS AND ACTION STAGES AND DRIVES THE BASES TO ACCELERATE, IN THE GCC METHODOLOGY:



Source: ICLEI - Local Governments for Sustainability

City of **Recife**

RECIFE IN ACTION

A BRIEF HISTORY OF THE FIGHT AGAINST CLIMATE CHANGE

2013

- Recife is chosen as model city for the Urban-LEDS I Project.
- Creation of the Sustainability and Climate Change Committee (COMCLIMA) and the Executive Group on Sustainability and Climate Change (GECLIMA), composed of different municipal departments and autarchies (Municipal Decree 27.343/2013).
- Start of the Capibaribe Park Project, which envisages a system of integrated city parks over 15 km on each bank of the Capibaribe River and the implementation of 12 footbridges, 45 km of cycling networks and 51 km of park streets, to turn Recife into a park city by 2037.
- Launch of Ilumina Recife to bring LED public lighting to major road corridors, tunnels and access roads.

2014

- Sanctioned Recife's Sustainability and Climate Change Policy (Municipal Law 18.011/2014).
- Revision of the Master Plan and the Law for Land Use and Occupancy.

2015

- Preparation of the first Greenhouse Gas (GHG) emissions inventory with the baseline year of 2012.

2016

- Certification program in the environmental sustainability of real estate undertakings (Decree 29.753/2016).
- Creation of the Sustainable and Low Carbon Recife Plan, the first project to reduce GHG emissions in the city, with Urban-LEDS I support. The municipality commits to reduce emissions by 14.9% in 2017 and 20.8% in 2020, compared to 2012. Several actions foreseen in the plan have been implemented: municipal mobility plan; exclusive bus lane programs; and the Bicycle Master Plan.

2017

- Launch of the *Programa Calçada Legal* ("Cool Sidewalk Program"), which provides for the requalification of the public pavements of the city's main road corridors.
- Elaboration of the *Projeto Pegada de Cidades* ("City Footprint Project") - Greenhouse Gas Emission Inventory (2012-2015) and Water Footprint (2015) of Recife.

2018

- Draft Bill for the revision of Recife's Master Plan.

2019

- Elaboration of the Climate Risk and Vulnerability Assessment, the Climate Risk Index and the Adaptation Strategy of the Municipality of Recife.
- Recife hosts the I Brazilian Conference on Climate Change, with ICLEI's support.
- The city declares recognition of the global climate emergency that threatens humanity (Municipal Decree Nº 33.080/2019).
- Climate emergency and sustainability become part of the curriculum in municipal schools.

2020

- Greenhouse Gas (GHG) inventory update with the baseline year 2017.
- Construction of the Local Climate Action Plan (LCAP), having the neutralisation of GHG emissions by 2050 as its guideline.
- Workshop to launch the LEDS Lab at the Municipal Women's Hospital.
- Proposal for revision of the Law of Land Division, Use and Occupancy

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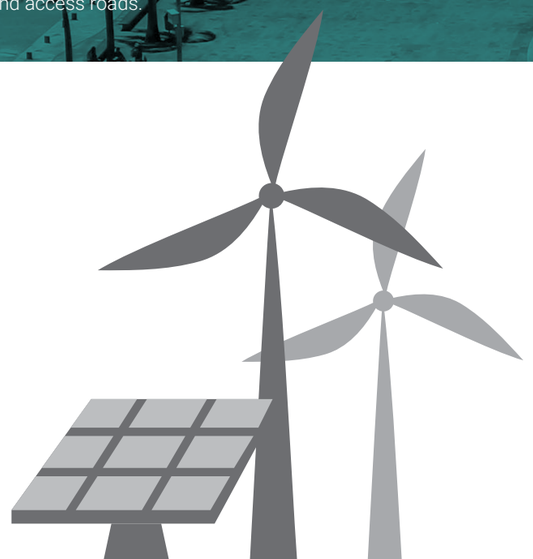


LEDS LAB PILOT PROJECT

The "Recife City of Energy Efficiency" project, which aims to ensure the supply of clean energy in line with economic growth, was selected within the context of Urban-LEDS II to participate in the LEDS Lab. This laboratory aims to improve the capacity of municipalities to elaborate bankable climate projects.

The Municipal Woman's Hospital of Recife *(Hospital da Mulher do Recife - HMR)* was chosen as the focus of this pilot project. Developed with ICLEI and specialised consultancy support, it contemplates installing a photovoltaic solar energy generation system divided into two stages, totalling an installed power of 261 kW. For the implementation of the first phase, the project has a seed investment offered by Urban-LEDS II. ICLEI is involved in articulation with other sources of resources for Recife to be able to execute the whole project.

The municipality was also guided in the definition of complementary financing models to carry out the pilot project's second stage. Besides, it received a project for external lighting efficiency in the same hospital, which foresees an annual consumption reduction of 41,085.59 kWh, which can be converted into annual savings of R$ 34,832.60 or a reduction in emissions of 3.08 tCO_2e/ano.

THE THREE PRINCIPLES OF THE ACTION PLAN

Recife's LCAP is based on three main principles defined in alignment with the city's aspirations, collected in discussions held in workshops throughout 2020 with the participation of, in total, 113 people. Among those present were representatives of the municipal management, strategic institutions and civil society.

PRINCIPLES THAT RULE THE CONTENT OF THE LCAP

CLIMATE JUSTICE

Climate Justice links human rights and low carbon development to achieve a people-centred and environmentally responsible logic. This concept proposes that public policies, risk reduction strategies and infrastructure construction use a holistic approach that includes social participation, community empowerment and cooperation between different sectors and institutions. Vulnerabilised populations must receive special attention since they are the most impacted by climate change.

NATURE-BASED SOLUTIONS

According to the International Union for Conservation of Nature (IUCN), Nature-based Solutions (NbS) are actions to protect, restore and sustainably manage natural and modified ecosystems by effectively and adaptively addressing societal challenges and promoting benefits to biodiversity[5] and human well-being. NbS strengthen the adaptive capacity and resilience of cities.

Examples of NbS are: rain gardens, which contribute to reducing the surface runoff of rainwater and can promote infiltration into the soil; green roofs, which improve the microclimate and bring more thermal comfort; and recovery of mangroves and sandbanks ("restingas"), used to soften the effects of tidal flooding.

GREEN ECONOMY

The United Nations Environment Programme (UNEP) understands the Green Economy to be one that improves human well-being and builds social equity while reducing environmental risks and ecological scarcities. It is low carbon-intensive, efficient in the use of natural resources and socially inclusive.

Examples of Green Economy activities are: agroecology, biofuel production, renewable energy generation, ecotourism, sustainable fishing and recycling. Recife has, for example, the EcoRecife project in the area of recycling, in which actions such as selective collection generate jobs and income for waste pickers.

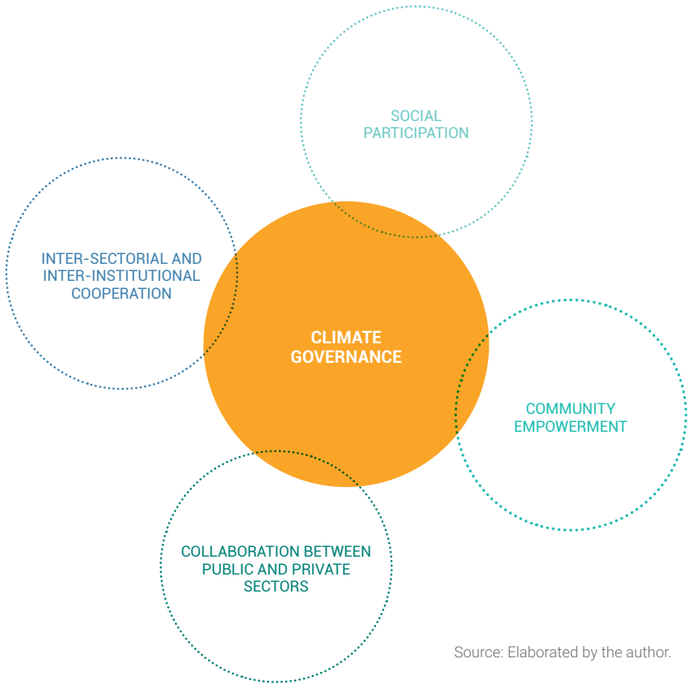
5. The variability among living organisms, including, among others, terrestrial and aquatic ecosystems and the ecological complexes of which they are part, as well as diversity within species, between species and of ecosystems, according to the UN Convention on Biological Diversity.

WHO IS PART OF IT

The fight against climate change and promoting a more sustainable city are not agendas restricted to the environmental area. It is a debate that needs to be incorporated in all sectors and by various actors since climate change affects everyone. Therefore, following the principle of Climate Justice, a climate action plan needs to have a governance that ensures diversity and empowerment of society's voices.

ICLEI has supported the city in building its climate governance since 2013, with the creation of a Sustainability and Climate Change Committee (COMCLIMA), the highest instance responsible for proposing guidelines for the implementation of public policies for sustainable urban development, debating the climate issue in a participatory setting, articulating the dialogue between City Hall and society. In the same year, the Executive Group on Sustainability and Climate Change (GECLIMA) was set up to coordinate the implementation of policies and plans to tackle climate change discussed at COMCLIMA, liaising with the City Hall's internal bodies.

For the preparation of this LCAP, besides COMCLIMA and GECLIMA, the following sectors were involved: academia, cooperation agencies, private sector, public sector, civil society and the third sector. The Secretariat of Environment and Sustainability and the Pelópidas Silveira City Institute were the focal points of COMCLIMA and GECLIMA in the necessary articulation to engage relevant actors in the elaboration process of the LCAP.



Source: Elaborated by the author.

THE RECIFE 2050 ACTION PLAN

The main goals of **Recife's Local Climate Action Plan** are:

- Reduce Greenhouse Gas emissions until the city becomes emission neutral in 2050;
- Promote Recife's adaptation and resilience to climate change.

With this, the city contributes to tackling climate change and will be prepared for the impacts that are already being felt and the ones to come.

Although ambitious, the plan is feasible because it is the result, as this publication shows, of a process that is careful in applying adequate methodologies; participatory, in the sense of promoting the listening of different sectors of society; and objective in its targets and actions. Moreover, it addresses solutions to develop resilience that is so necessary to the city.

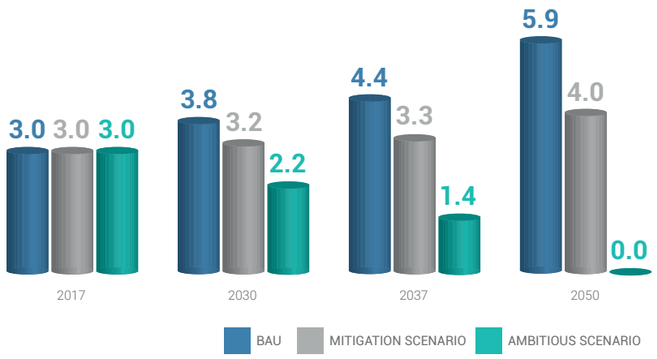
The year 2017 was chosen as the starting point for the projection of the city's emissions scenarios until 2050, for being the baseline of the most recent GHG emissions inventory (made in 2020). The city of Recife's emission inventories follows the international methodology Global Protocol for Community-Scale GHG Emissions - GPC, elaborated by ICLEI, World Resources Institute (WRI) and C40 Cities Climate Leadership Group, with the collaboration of the World Bank, UNEP and UN-Habitat.

Until 2050 may seem a long time, but the projection for this plan has "milestones", or time horizons, which show the reduction in stages: 2030 (30%), 2037 (50%) and 2050 (100%).

The year 2030 was chosen because there are already projections of low carbon actions for this period, contained in the Recife Sustainable and Low Carbon Plan; 2037 coincides with the planning of the Recife 500 years Plan; and the year 2050 is linked to the commitments of the Paris Agreement[6], which envisages that, by that year, there must be a balance between GHG emissions and removals.

6. Global agreement, approved by 196 countries in 2015, whose main objective is to reduce GHG emissions to limit the average increase of global temperature to 2°C, with efforts to keep it below 1.5°C.

COMPARISON BETWEEN PROJECTED MITIGATION SCENARIOS (IN MILLIONS OF TONS OF CARBON DIOXIDE EQUIVALENT - tCO_2e)



Based on the 2020 GHG emissions inventory, three scenarios on GHG emissions were designed. The BAU (Business As Usual) shows what will happen if nothing is done. The second, mitigation scenario, reveals what will happen to emissions based on actions already taken or planned. And the third is the most ambitious scenario, where emissions are reduced more quickly, and it is the one targeted by this LCAP.

THE FOUR STRATEGIC AXES

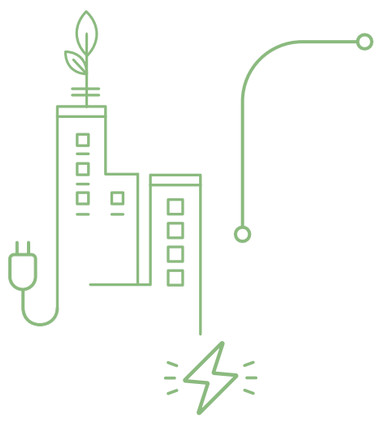
Four axes were chosen as priorities for Recife, and the actions of the **Local Climate Action Plan** are aligned to them. The initiatives planned are technically, financially and environmentally feasible and take into account existing legislation and policies.

The **Energy Axis** involves the consumption of electricity and the use of fossil fuels (such as natural gas, Liquefied Petroleum Gas - LPG and diesel) in commercial, institutional and residential buildings, industries, and construction as in buildings and projects of the municipal administration. The actions are focused on reducing GHG emissions through energy efficiency and energy use from renewable sources.

The **Sanitation Axis** is related to solid waste and sanitary sewage management. In other words, it is about reducing the waste generated, promoting recycling and sewage collection and treatment. It brings actions that reduce emissions and improve the environment, health and people's quality of life.

The **Mobility Axis** addresses reducing emissions from cars, buses and other vehicles circulating in the city. But it is also related to encouraging the use of public transportation and implementing and improving bike paths and pavements, contributing to raise the air quality, mitigate atmospheric pollution and promote well-being to the population.

The **Resilience Axis** aims to make the city more prepared to respond to extreme weather events and their consequences. It is also related to the promotion of education for sustainability for all citizens. And, also, with initiatives aimed at the most vulnerabilised populations, who will suffer to a greater extent the impacts of climate change, such as lack of water, floods and landslides.



01 _ ENERGY

The energy sector represents 20% of GHG emissions in Recife. More than half of them come from the consumption of commercial, institutional and residential establishments. Other relevant energy sources are those of fossil origin, such as Liquefied Petroleum Gas - LPG (cooking gas), standard in households, and natural gas and diesel, in industries.

In 2017 alone, 625,569 tons of CO_2e were emitted. If nothing is changed, the forecast is that emissions will increase by 139% by 2050. One of the reasons is population growth combined with the city's development, but there is also the factor of climate change. With the increase in average temperatures and heatwaves and more extended periods without rain (meteorological droughts), the demand for air conditioning, not only in homes but also in public buildings, is expected to grow.

But it is worth remembering that using more air-conditioning, for example, will hardly be an immediate alternative for the most vulnerabilised populations, who, by the principle of Climate Justice that guides this LCAP, need to be prioritised in the solutions.

The energy supply needed for the city's growth must be based on energy efficiency and renewable energy sources.

Therefore, acting on energy-related issues is one of the crucial and strategic points of this plan. The energy supply needed for the city's growth must be based on energy efficiency and renewable energy sources.

To reduce GHG emissions from the energy sector and at the same time contribute to reducing the consequences of climate change, the following objectives have been set:

- Ensure that the electricity supply is 100% of renewable origin;
- Minimise and neutralise emissions from fossil fuels (LPG, natural gas and diesel oil);
- Reduce the city's energy consumption through energy efficiency measures.

To achieve these objectives, three targets were defined and are explained as follows.

TARGETS	ACTIONS	HOW IT WILL BE DONE	EXPECTED OUTCOME
TARGET 1 **Ensure that, by 2037, 100% of the electricity supplied to the city of Recife is of renewable origin.**	E.1. Ensure with the Energy Company of Pernambuco (CELPE) and free-market energy consumers that 50% of the electricity distributed in Recife comes from renewable sources by 2030 and 100% by 2037. E.2. Expand the use of renewable energy (mainly solar) in public buildings and services, including public works. E.3. Implement the Recife City Energy Efficiency Project (30% by 2030, 70% by 2037 and 100% by 2050).	Defining, together with CELPE, by 2022, the strategy to ensure that, by 2037, all energy distributed in Recife is 100% renewable. Formulating incentives for the use of renewable energies in residences and commercial and industrial facilities until 2024. Establishing, until 2024, together with CELPE, the conditions to advance the smart grid infrastructure. By developing with partners, until 2023, guides and guidelines for renewable energy projects.	Reduction of emissions by 650 thousand tCO_2e by 2050*.
TARGET 2 **Turn neutral the GHG emissions generated by stationary fossil fuel consumption in the city of Recife by 2050.**	E.4. Require, starting in 2025, the compensation of emissions to the relevant sectors. E.5. Reduce and/or compensate up to 30% of fossil fuel emissions from stationary energy by 2030; 50% by 2037, and 100% by 2050.	By establishing, until 2024, incentives for the substitution of fossil fuels by renewables in the residential, commercial/institutional sectors. By developing, until 2024, policies for the substitution of fossil fuels by renewables in the residential, commercial/institutional sectors. Establishing the legal regulation with the criteria and requirements of inventories and compensation of GHG emissions, especially for intensive activities, in the use of fossil fuels in the city.	Reduction of emissions of 512 thousand tCO_2e by 2050*. With the increase in biodiesel percentage in diesel, this total emission reduction will go further and should reach 517 thousand tCO_2e by 2050.
TARGET 3 **Reduce energy consumption of all economic sectors in Recife in 20% by 2050 in relation to the Business As Usual (BAU) scenario.**	E.6. Adopt 100% LED public lighting by 2021 (within the *Ilumina Recife* program, which is bringing LED public lighting to major road corridors, tunnels and accesses to the city's main communities); E.7. Strengthen the Municipality's Sustainable Certification Program (Decree 29.573/2016), linking, by 2022, the granting of the urban planning license to the criteria set out in the environmental sustainability badge, a certification for buildings that adopt sustainable measures to reduce environmental impact and Greenhouse Gas (GHG) emissions; E.8. E. Reduce the city's electricity consumption by 5% by 2030; 10% by 2037; and 20% by 2050 compared to the BAU scenario (deducting mitigation scenario measures).	By identifying, until 2021, the main energy-intensive economic sectors in the city. By promoting and developing, until 2022, incentive policies for energy efficiency and fuel substitution in the residential, public, commercial and industrial sectors. Contracting public works, including for the construction of affordable housing, that privilege sustainable materials and projects that contemplate eco-efficiency, sustainability and Nature-based Solutions. By implementing, starting in 2021, energy efficiency and rational use of water measures in new municipal public buildings and in ephemeral or transitory facilities of municipal responsibility (according to what is defined in Municipal Decree 32.939/2019). Ensuring that, by 2037, 100% of electric energy consumed by public lighting equipment is obtained from the municipality's own generation, from renewable sources. Finalise, until 2022, the energy efficiency actions in the City Hall administrative building.	Emission reductions of 145.7 thousand tCO_2e by 2050.* With the expected increase in energy efficiency brought about by new technologies and equipment, this total emission reduction should reach 329.7 thousand tCO_2e by 2050.

* Concerning the total emitted by the sector in 2017

02 _ SANITATION

The waste sector was responsible for 22% of Recife's GHG emissions in 2017, with the largest share (60%) corresponding to methane emitted from solid waste decomposition in landfills. According to EMLURB, the Autarchy of Maintenance and Urban Cleaning of Recife, the city generated 827.2 tons of waste that year. Of this total, 95% was sent to landfill, and only 0.8% was recycled, reused or sent for composting.

Furthermore, part of the waste generated does not reach landfills, being disposed of inappropriately, polluting the environment and bringing a series of damages to the city, such as clogging of ditches and ducts, which prevents the drainage of rainwater, contributing to floods and landslides.

The expected increase in rainfall intensity aggravates this scenario. The sum of waste discarded in inappropriate places, the occupation of river banks and their canalisation - actions that have happened throughout Recife's history - may bring more severe consequences.

Reducing the waste generated and promoting recycling and sewage collection and treatment contributes to the environment and the population's health.

As for sewage, 43% of Recife's population has access to collection and treatment, according to the Pernambuco Sanitation Company (*Companhia Pernambucana de Saneamento* - COMPESA), with treated sewage accounting for 18% of the city's methane emissions, and untreated sewage for 21%.

Recife has already developed, over the years, policies and plans for solid waste and sanitation that aim to solve the challenges of this sector, such as the Plan for Solid Waste Management of the Metropolitan Development Region of Pernambuco and the Recife 500 Years Plan, which foresees that 100% of the city's sewage will be treated by 2037.

The LCAP took into account the results of these municipal, regional and federal public policies (such as the Sanitation Legal Framework) to define its actions. Reducing the waste generated and promoting recycling and sewage collection and treatment contribute to the environment and the population's health.

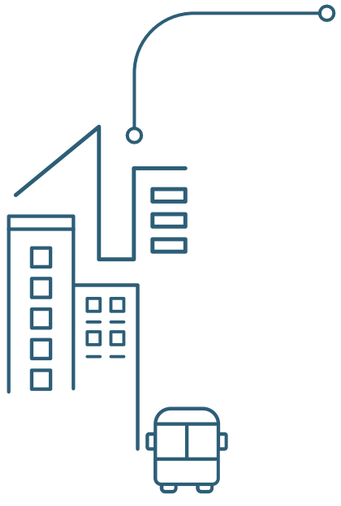
Thus, the following objectives were established:

- Increase the collection, recycling and reuse of solid waste to reduce incorrect disposal in areas of the city, such as slopes and flood plains, and reduce the sending of waste to landfill;
- Implement technologies to minimise GHG emissions in waste disposal and treatment;
- Universalise the sanitary sewage service with solutions that minimise GHG emissions.

To achieve these objectives, three targets were defined, described as follows.

TARGETS	ACTIONS	HOW IT WILL BE DONE	EXPECTED OUTCOME
TARGET 1 **Reduce, until 2050, the disposal of waste in landfills by 50%.**	S.1. Reduce solid waste disposal in landfills by 32% by 2030, 39% by 2037 and 50% by 2050, projected according to the Solid Waste Plan of the Metropolitan Development Region of Pernambuco. S.2. To mitigate the problems related to the disposal of solid waste in inadequate places, and that can generate various issues - e.g. overload in barriers and accumulation of water, clogging of drainage systems and proliferation of disease vectors - until 2030.	Regulating reverse logistics with the creation of municipal regulations by 2030. Developing a sectoral agreement for packaging until 2037 to guarantee an environmentally adequate final disposal for this type of waste. By developing, until 2022, a policy to encourage and promote recycling, composting and biodigesters in the industrial, commercial and residential sectors. By developing, until 2022, specific recycling and composting requirements for large-sized projects. Installation, until 2024, of organic waste composting central(s) with products directed to community gardens and/or organic agriculture, green areas and schools, associating with environmental education initiatives. Implementation of a recycling plant for civil construction waste by 2024. Assessing recurrent points of inadequate disposal to prioritise the service. Installing infrastructures and expanding the common waste and recyclables collection systems. Stimulating the local and circular economy with incentives for composting, recycling and reuse of materials.	Emissions reduction of 141 thousand tCO_2e by 2050.*
TARGET 2 **Ensure that the city's waste treatment has no GHG emissions until 2050.**	S.3. Ensure that methane emitted from the decomposition of waste in landfill is burned or used for energy generation by 60% until 2030 and 100% until 2037. S.4. Compensate emissions related to all waste treatments (incineration of health care waste; composting, etc.) by 30% until 2030; 50% until 2037; and 100% until 2050.	By setting up, until 2021, working groups with representatives of the landfill operating companies to enable total burning and/or energy use of GHGs from waste decomposition. Establishing a compensation policy for emissions related to the waste sector	Emissions reduction of 434.9 thousand tCO_2e by 2050.*
TARGET 3 **Ensure that the city's wastewater treatment is GHG free by 2050.**	S.5. Implement technologies to burn or use 10% of methane in sewage treatment plants by 2030, 40% by 2037, and 100% by 2050. S.6. Establish a compensation policy for residual emissions related to wastewater treatment (CH_4 and N_2O), with 30% compensation of GHG emissions by 2030, 50% by 2037, and 100% by 2050.	Setting up a working group with representatives of the State government, COMPESA and private companies that participate in the Public-Private Partnership of Sanitation in Pernambuco to enable the use of new ecological, micro-scale solutions and technologies that burn or make energy use of GHGs from ETEs; By implementing, until 2037, a monitoring and quality control system for treated effluents that are discharged (from ETEs, private ventures and other ecological sanitation measures) into rivers and canals; Ensuring, by 2050, that the entire sanitary sewage system implemented is effectively operating, including household connections. Implementing a pilot project of filter gardens in Caiara Park until 2022 and other ecological sanitation measures, such as biological treatment micro-station, wetlands, evapotranspiration tank, etc. Assessing the impact of the filter gardens project until 2024 and other ecological sanitation measures. In case of positive impact, develop modelling for scalability in the city.	Emissions reduction of 289 thousand tCO_2e by 2050.*

* Concerning the total emitted by the sector in 2017.



03 — MOBILITY

Recife is a compact and dense city, which, in theory, would not require long-distance travel for daily activities. According to the 2018 Origin-Destination Survey of the Metropolitan Region of Recife (RMR), almost 64% of traffic to work and education of the region's residents is carried out by foot (55%) or by bicycle (9%).

However, the city has expanded by focusing on roads, with expressways and flyovers, to meet individual, fossil fuel-powered vehicles' growing presence.

The number of cars has increased by 60% in the last 20 years and the number of motorbikes by 443% in Recife alone. In the metropolitan region (RMR), the increase was higher: 103% for cars and 630% for motorbikes. There are 806 thousand cars and 357 thousand motorbikes registered in the RMR.

The option for individual transport is reflected in the city's GHG emissions and daily traffic jams. The transport sector was responsible for over 55% of emissions in 2017.

Actions to improve people's coming and going to allow them to take advantage of bike paths, pavements and public transportation, in addition to reducing emissions.

Although the solutions are to encourage the use of public transport and bicycle paths and walking, there are structural problems, such as the lack of thermal comfort and safety in public transport and insufficient or degraded pavements and bike paths. Recife has created and acted on projects to revitalise these roads and improve transportation. This was taken into account in this LCAP and the expected technological evolution in urban mobility.

However, the increase in average temperature, heatwaves and prolonged periods of drought hinder the population's adaptation from leaving aside individual transport. This challenge is also considered in the actions of this axis.

Finally, aeroplanes' emissions are also included in the inventory of Recife, which is an economic and tourist hub. Air travel represented 38% of transport emissions and 21% of the city's emissions in 2017.

For the mobility sector, the following objectives were established:

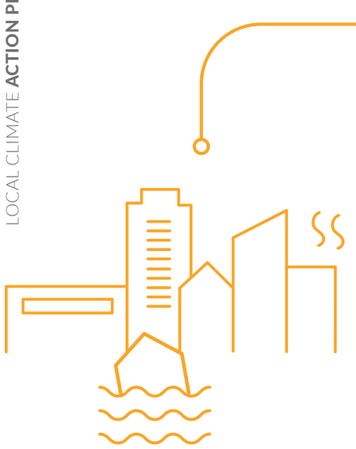
- **Prioritise collective and active means of transport;**
- **Encourage the use of renewable fuels;**
- **Compensate for residual[7] GHG emissions from the transport sector by 2050.**

For these objectives, three targets were defined, described as follows.

7. Therefore, emissions that could not be avoided entirely should be compensated through initiatives that capture carbon from the atmosphere, such as planting trees.

TARGETS	ACTIONS	HOW IT WILL BE DONE	EXPECTED OUTCOME
TARGET 1 **To provide the necessary infrastructure and conditions so that 20% or less of Recife's traffic volume is carried by individual motorised transport as the primary means of transportation until 2050.**	M.1. Implement 355 km of cycling infrastructure by 2037 (Master Plan + Capibaribe Park).	Setting up a working group with state, municipal and civil society instances to define, until 2022, the priority projects of urban mobility, characterising the contributions to reduce GHG emissions and taking climate risks into account. Establishing, by 2022, the medium and long-term planning of exclusive bus lanes in the city and implement them by 2037.	Emissions reduction of 203 thousand tCO_2e by 2050*.
	M.2. Define exclusive bus lanes.	By defining, together with the relevant stakeholders, until 2023, the plan to improve public transport in the city of Recife. Articulating with the State Government Bicycle Office for the implementation of cycling infrastructure in the city's major road corridors. Reaching, until 2037, at least 80% of the city's bicycle lanes with trees. Expanding the bike-sharing system to the peripheral regions until 2027.	
	M.3. Reduce the percentage of individual motorised transport in the city's traffic volume from 33% to 20% by 2050.	Recovering and implementing 130 km of pavements, continuing the Cool Sidewalk Project.	
	M.4. Strengthen public transport resilience to extreme climate events.	Establishing an action plan with the necessary measures to avoid public transportation interruption in extreme weather events. Identifying city regions where access by individual vehicle is restricted. Developing, until 2023, policies and incentives to reduce the need for commuting to work and use of flexible hours or teleworking. Developing awareness-raising actions and promoting cultural change in search of life patterns that prioritise low-carbon transportation.	
TARGET 2 **Ensure that the public transportation fleet is made up of 100% electric vehicles by 2050.**	M.5. Implement the public transport fleet's electrification, ensuring it is 20% electric vehicles by 2030, 35% by 2037 and 100% by 2050.	By setting up a working group on urban mobility until 2022 to define strategies to replace fossil fuels with clean fuels in the public and private transportation fleets. Defining, until 2022, a procedure to prioritise the use of clean fuel in the City Hall vehicle fleet. Establishing energy efficiency standards for the circulating fleet in the municipality (aligned with the National Vehicle Labeling Program, especially for old vehicles) by 2023. Establishing, until 2024, the necessary incentives for the advancement of means of transport based on clean fuels. Defining, until 2024, the necessary legal framework to create conditions and incentives for replacing fossil fuels with clean fuels by 2050. Implementing the solar boat for commuting between the Capibaribe River banks by 2021 and evaluate, by 2023, the impact of this project for scalability analysis. By 2037, promote the navigability of the Capibaribe and Beberibe rivers.	Emissions reduction of 115 thousand tCO_2e by 2050*. With the expected increase in road and aviation engines' energy efficiency, a higher percentage of biodiesel in diesel and the impacts of the Energy Axis actions, this total emission reduction should reach 1177 thousand tCO_2e by 2050.
TARGET 3 **Offset the Residual Transport Emissions by 100% until 2050.**	M.6. Compensate for residual transport emissions by 30% by 2030; 50% by 2037; and 100% by 2050.	Setting up a working group, until 2022, for strategic definitions regarding the compensation of GHG residual emissions from the transport sector. Defining, until 2024, the legal framework for a policy of compensation of emissions in transportation, including the definition of financial instruments and compensation alternatives, contemplating 30% of offset until 2030; 50% until 2037; and 100% until 2050. To account for the annual emissions reductions from fossil fuel distributors in its territory, according to the targets set by the National Petroleum Agency (ANP).	Emission reductions of 2.408 million tCO_2e by 2050.*

* Concerning the total emitted by the sector in 2017



04 _ RESILIENCE

Floods, heatwaves, landslides, sea level rise, diseases transmitted by vectors and prolonged droughts are the main risks brought by climate change. The Resilience Axis addresses the elaboration of actions for the city to be prepared to respond to them.

According to data from the Drainage Master Plan, there are 159 critical flooding points in the city, and 52% of the population lives in areas that usually flood on rainy days. Therefore, the forecast of more heavy rains is worrying.

To improve water runoff in the city, it is necessary to strengthen the green infrastructure formed by rivers, canals, riparian forests and mangroves, restoring and reconnecting the natural spaces of waterways, recovering and preserving their beds.

As for landslides, there are more than 670 risk areas on slopes and hillsides, where the low-income population lives. Cutting vegetation, erosion, inefficient drainage system and irregular waste disposal increase this threat. Some city actions have reduced the occurrence of landslides, but the heavier rains, which are expected to become more frequent, may aggravate the scenario.

To prepare the city for climate change impacts involves having more green areas, water security, and support to vulnerable populations.

The expected increase in the frequency of extreme daytime and night-time temperatures, heatwaves and consecutive dry days puts pressure on the water supply. A large proportion of low-income groups still have access to water intermittently (with interruptions) and on alternate days. Ensuring the water supply of the entire population becomes paramount.

Heatwaves and temperature increases also pose a threat to health and well-being, especially for the elderly, children and vulnerable populations, due to increased flooding, landslides, temperature extremes and diseases caused by vectors. Afforestation and the use of sustainable infrastructures can improve the thermal comfort of the population.

The six targets defined for this axis respond to the following objectives:

- Foster the integrated management of water resources to reduce risks as well as disasters and ensure water security;
- Promote urban renewal in climate risk areas;
- Promote the systemic management of green areas;
- To tackle the increase in sea level rise;
- Elaborate an action plan to adapt strategic sectors to climate change and structure knowledge management;
- Strengthen the Education for Sustainability Programme.

TARGETS	ACTIONS	HOW IT WILL BE DONE
TARGET 1 **To reduce by 100% the areas with a very high risk of landslides and floods according to the Municipal Plan for Risk Reduction, as well as the proliferation of vectors of diseases related to drainage dynamics, by 2050.**	R.1. To guarantee access and supply of drinking water to the entire population of Recife by 2025. R.2. To identify water bodies that can undergo revitalisation and renaturalisation processes by 2023. R.3. To upgrade 100% of macro and micro drainage infrastructure, including Nature-based Solutions (NbS) measures, by 2037. R.4. To carry out structuring actions of slope containment works according to the priorities listed by the city's risk mapping. R.5. Undertake non-structural actions of prevention, preparation and mitigation for risk reduction and disaster. R.6. Ensure that, by 2030, all executive projects for flood/slide sites are prepared and include NbS principles.	Selecting micro and macro drainage measures, as per the Drainage Plan that can be revised from NbS principles and low impact measures, for the sub-basins, aiming to: (I) decrease the velocity of rainwater runoff; (II) increase water infiltration into the soil and provide alternative sources for non-primary uses. For example: rain gardens, drainage beds, green roofs, cisterns, etc. Ranking the situations by complexity and investment, according to the measures already defined and quoted from the municipality's Drainage Plan and the review with NbS principles. Monitoring the efficiency of the measures adopted and identifying norms and regulations that should be revised to scale up these measures' adoption. Assessing the types of works that can be carried out (cost-benefit assessment). Carry out monitoring and maintenance of the works, considering the potential for service provision by community actors. Monitor and manage the 677 risk sectors in the city, as identified by the Municipal Risk Reduction Plan. Monitor irregular occupations in non-building areas, land use and occupation plan.
TARGET 2 **To urbanistically reclassify risk areas to bring safety and quality of life and enable the confrontation of climate threats until 2037.**	R.7. To elaborate a diagnosis identifying priority areas to receive sustainable urban works and improvements, besides promoting eco-efficiency in construction, considering the areas defined in the risk index of the city of Recife, until 2025. R.8 To promote urban agriculture initiatives, integrated with the multiple uses of green areas.	Through dialogue with affected communities and neighbourhoods, seeking coherence between measures and the local socio-economic reality. Evaluating the cost-benefit, ensuring that communities are not unnecessarily evicted. Implementing and monitoring the implemented measures. Setting up a participatory committee to manage urban agriculture initiatives based on gender and racial equity, considering the need to prioritise the most socially vulnerable areas and broadly involving stakeholders. Promoting trade fairs with local producers in Recife. By valuing initiatives that bring together ecological agriculture practices and agroforestry systems. Providing technical support for the development of urban agriculture practices. Recognising urban agriculture initiatives that value gender equity and cultural diversity in their practices.
TARGET 3 **To review, until 2025, the Municipal System of Protected Units (SMUP), including Conservation Units and other types, public and private.**	R.9. To expand and update the SMUP to include other types of green areas, such as squares, urban parks, central flowerbeds, springs, community gardens and coastal areas relevant to the confrontation of climate change. R.10. Renew the agreement between the Municipality and the Federal University of Pernambuco (UFPE) until 2021 to continue the Capibaribe Park Project, and carry out a continuous search for funding sources for this purpose.	Setting up a working group with different actors (society, university, public power, private sector), integrated with the Pernambuco Forest Policy Forum and the State Forest Policy Committee. Updating the diagnoses on green areas, including assessment on essential ecosystem services, by 2023. Defining priority areas for restoration, connectivity, creation/maintenance and registration of Conservation Units or other types of green areas (squares, urban parks, central plazas, slopes, springs, community gardens, etc.), as well as incentives for conservation and/or sustainable use in private areas. Revising the Tree Planting Plan, including phytosanitary diagnosis, evaluating the condition of trees, including the risk of falling, and update it in an integrated manner with the SMUP, considering the indication of potential species with more remarkable ability to adapt to future climate scenarios. Developing social programs for training and income generation for community actors who perform management and maintenance services of green areas, with priority to vulnerable groups. By identifying, until 2022, sources of available resources for promoting urban greenery and implementation of sections of the Capibaribe Park Project. Preparing a guide of native and more resilient species to climate change, as potential landscaping and use in green infrastructure, until 2023, in partnership with universities, society and the private sector. Through the Capibaribe Park Project, to gradually transform 35 neighbourhoods into park neighbourhoods, impacting 400 thousand inhabitants, until 2037.

TARGETS	ACTIONS	HOW IT WILL BE DONE
TARGET 4 **Define more appropriate strategies to adapt to the sea level rise until 2024.**	R.11. To set up a multi-stakeholder working group, until 2022, to discuss the most appropriate monitoring parameters and adaptation measures to face the sea rising in the context of the city of Recife, including ecosystem-based adaptation, such as conservation and restoration of mangroves, sandbanks and coral reefs. R.12. Implement, by 2025, the sea level and river monitoring system in the city.	By including in COMCLIMA, until 2021, a sector responsible for monitoring the city's sea level rise. Encouraging researches that relate rainfall rates with the advance of sea level rise and flooding in the city's neighbourhoods. Defining, until 2023, the parameters that will compose the monitoring indicators related to the sea level rise in the city. Planning and defining strategy to confront the advance of sea level rise in the city by 2024
TARGET 5 **Elaborate the Sectoral Adaptation Plans until 2022.**	R.13. Deepen and detail sectoral measures for climate change adaptation.	Contracting Sectoral Plans of Adaptation to climate change until 2021. Developing and approving Sectoral Climate Change Adaptation Plans by 2022. Installing three micro-stations for climate and air quality monitoring by 2022. By implementing, until 2022, territory management software with a public and private interface, to assist the management, planning and execution of urban operations, with a broad view of ongoing and planned actions in the city.
TARGET 6 **Make Education for Sustainability an agenda of all municipal administration bodies until 2023.**	R.14. Continue and strengthen the Education for Sustainability Program, focusing on the multidisciplinary aspects of climate change.	Establishing, until 2022, in each agency or company of the municipal administration, a committee responsible for disseminating the Education for Sustainability Program and the A3P agenda (Environmental Agenda of the Public Administration). By establishing partnerships, until 2022, with community players and relevant leaderships to ensure Climate Justice, besides relevant entities (such as CAU/PE, CREA/PE, IAB/PE, civil society entities and private companies) to train multipliers. Promote, starting in 2022, annual education campaigns for sustainability in partnership with private initiative and non-governmental organisations. Developing annual awareness-raising campaigns for conscious consumption, starting in 2022. Identifying and formatting, until 2022, partnership models for the implementation, in several places in the city, of environmental education spaces, the Econúcleos.

Climate Justice Nature-based Solutions Green Economy

LOCAL CLIMATE **ACTION PLAN**

RECIFE: AN INSPIRATION FOR THE FUTURE

The climate impacts projected for the city of Recife are challenging and affect the urban environment and its entire population. Fortunately, the climate agenda is advancing significantly, and the proof is this Local Climate Action Plan (LCAP). The targets set out in it allow us to tackle these impacts, promote the improvement of the quality of life and bring more dynamism to the city. In other words, Recife will be able to follow an ambitious path of urban transformation towards carbon neutrality.

This LCAP should be constantly monitored by impact indicators, and its objectives, targets and actions need to be periodically reassessed. Wherever possible, the level of ambition should be raised.

It is hoped that this plan will inspire other Brazilian cities to understand the relevance and opportunities brought by the confrontation of climate change, thus increasing the network of local governments that make up efforts for the good of the planet.

ORGANIZATION

RECIFE PREFEITURA DA CIDADE

ICLEI Local Governments for Sustainability

SUPPORT

URBAN LEDS

UN HABITAT FOR A BETTER URBAN FUTURE

FINANCING