



Urban
Pathways

STEPS to ACTIONS

BRAZIL BELO HORIZONTE



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UN HABITAT
FOR A BETTER URBAN FUTURE

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URBAN PATHWAYS

PROJECT CONCEPT

The Urban Pathways project helps delivering on the Paris Agreement and the NDCs in the context of the New Urban Agenda and the Sustainable Development Goals. It has established a facility in close cooperation with other organisations and networks active in this area to support national and local governments to develop action plans and concrete implementation measures to boost low-carbon urban development. This builds on UN-Habitat's role as "a focal point on sustainable urbanisation and human settlements including in the implementation and follow-up and review of the New Urban Agenda". The project develops national action plans and local implementation concepts in key emerging economies with a high mitigation potential. The local implementation concepts are being developed into bankable projects, focusing on the access to urban basic services to create a direct link between climate change mitigation and sustainable development goals.

The project follows a structured approach to boost Low Carbon Plans for urban mobility, energy and waste management services that deliver on the Paris Agreement and the New Urban Agenda. The project works on concrete steps towards a maximum impact with regards to the contribution of urban basic services (mobility, energy and waste management) in cities to global climate change mitigation efforts and sustainable and inclusive urban development. This project makes an active contribution to achieve global climate change targets to a 1.5°C stabilisation pathway by unlocking the global emission reduction potential of urban energy, transport and resource sectors. The project will contribute to a direct emission reduction in the pilot and outreach countries, which will trigger a longer term emission reduction with the aim to replicate this regionally and globally to make a substantial contribution to the overall emission reduction potential.



Where We Work

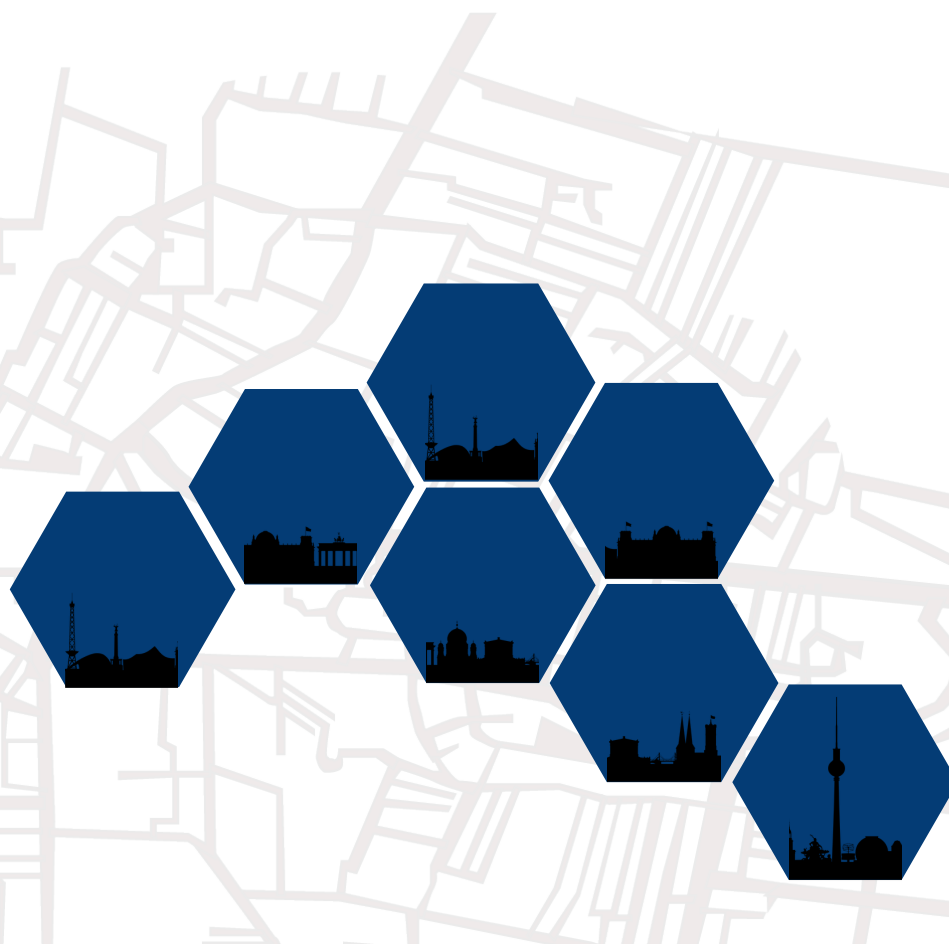
PROJECT AIMS

This project implements integrated urban services solutions as proposed in the New Urban Agenda providing access to jobs and public services in urban areas, contributing to equality and social coherence and deliver on the Paris Agreement and the Sustainable Development Goals. This is the first dedicated implementation action oriented project, led by UN-Habitat to deliver on inclusive, low-carbon urban services. Securing sustainability and multiplier effect, the project aims to leverage domestic and international funding for the implementation projects that will follow from this initiative.

Pathways Paper: Steps to Actions

Summarizing key on-going initiatives and identify opportunities for further action with a focus on cross-sectoral synergies and policy interactions between the local and national level.

Brazil, one of the five emerging economies that constitute the BRICS, has a population of 208 million inhabitants extended over an area of 8.5 million km² in South America (IBGE, 2017). Worldwide, Brazil is the 5th largest country by area and the 6th by population. In terms of greenhouse gas (GHG) emissions, Brazil is the 7th largest emitter. In its NDC, Brazil commits to reduce GHG emissions by 37% below 2005 levels by 2025 and 43% by 2030, which translates into a 6% and 16% compared to 1990 levels, respectively. These targets turned Brazil into the first major developing country to commit to an absolute GHG reduction below 1990 levels (Federative Republic of Brazil, 2015). With regard to its population growth, Brazil is characterised by a concentration of population in the south-eastern region, lead by



the megacities of Sao Paulo and Rio de Janeiro, with a concentration of approximately 40% of the Brazilian population and more than 50% of the GDP. Belo Horizonte, also located in the south-eastern region, is the capital of the state of Minas Gerais and the 3rd largest metropolitan area in the country. Belo Horizonte has a population of over 2.5 million, with 5.7 million in the Metropolitan Area (IBGE, 2017). In the process of institutionalizing climate change policies, Belo Horizonte set the goal of reducing 20% of GHG emissions by 2030 in comparison to 2007.

Summary of the planned actions:

Belo Horizonte has a series of plans (Master Plan, PlanMob-BH, Belo Horizonte – a Smart City, etc.) and policies in place that are reviewed and monitored on a regular basis to help guide the urban development of the city. Belo Horizonte has already made important progress towards sustainability and in the medium and long run Belo Horizonte envisions becoming an example of smart and sustainable urban development for Brazil and Latin America.

Master Plan Belo Horizonte



With this in mind, and because of the favourable technological environment of Belo Horizonte, in 2018 the municipality of Belo Horizonte conceived a new plan, the plan “Belo Horizonte, a smart city”. This plan involves the sustainable use of the city’s resources, such as water and energy, waste management, traffic improvements, integration between public systems and efficient citizen services through the use of technology, innovation and information systems.

One of the five pillars of the plan is related to mobility and public safety. It focuses on the improvement of public transport and urban mobility, promotion of traffic safety and integrated management of city problems (Prefeitura BH, 2018b). Among the measures comprehended in this pillar are the modernization of public

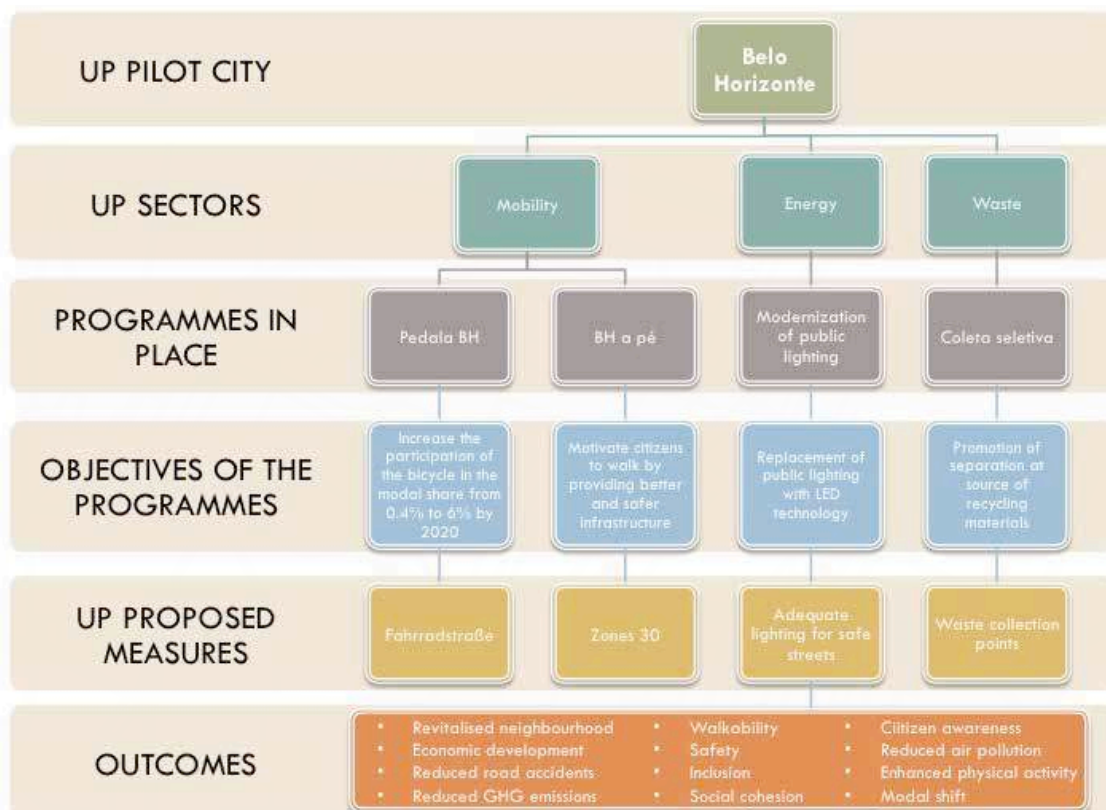


Figure 1: Proposed measures for Belo Horizonte

lighting and the implementation of two projects related to active mobility, the first one to promote the use of the bicycle –Pedala BH- and the second one to promote walking –BH a pé-. The implementation of these three measures individually will contribute to the reduction of GHG emissions in Belo Horizonte. However, addressing them in an integrated manner and in relationship to other programmes in place will contribute to a higher impact not only in terms of GHG emissions, but also in terms of neighbourhood revitalisation, social cohesion and economic development of the intervened areas. The following diagram shows the integration of the measures.



With regard to mobility, Belo Horizonte has an innovative Sustainable Urban Mobility Plan, called PlanMob-BH, with comprehensive measures including TOD, BRT and Bike solutions since 2013. By 2030, the plan expects that the measures implemented contribute to reductions of 36% in GHG emissions, 25% in travel time and 19% in transport costs (Secretaria Municipal de Governo BH, 2013). A process of review and adjustment of the plan started in 2016 and was approved in 2017. The plan contains 8 intervention areas, one of which is active mobility composed by the programmes Pedala BH and BH a pé also men-



Planned actions

tioned in the Smart City plan. The main purpose of these measures is to increase the modal share of bicycle from 0.4% to 6% by 2020 and to improve the public space to create walkability.

In this context, Belo Horizonte established a partnership with the city of Bremen, Germany, which will help BH implement a Zone 30 and a bicycle street (Fahrradstrasse). The Zone 30 pilot-project foresees a wide deployment of vertical and horizontal signaling, reallocation and repositioning of parking spaces to provide the reduction of the speed, and, enlargement of sidewalks with the creation of small areas of coexistence for pedestrians with the insertion of urban furniture. Beyond the immediate mobility related issues, Belo Horizonte also recognises these measures as an opportunity to revitalise the downtown area and enhance the quality of life by creating pedestrianised streets and giving the space back to people from cars.

Next steps

The mobility part of the project is very advanced. However the energy and waste sectors still need to be included in the pilot project. The following actions should be taken:

- Contact the heads of the involved programmes and present the integration of measures in the pilot project.
- Evaluate if the selected areas for the implementation of Zone 30 are also adequate for the other measures.
- Inclusion of adequate public lighting in the urban design of the selected area in the framework of the measure to replace lamps with LED technology.
- Incorporate the premises of TOD in the design of and regulations for the selected area. In particular, mixed use and moderate to high densities.
- Inclusion of waste collection points in the selected area.





Progress towards implementation

BHTrans already identified potential locations and are planning the implementation of the measure for this year. The Zone 30 for the pilot-project was defined during the visit of Mr. Michael Glotz-Richter in Belo Horizonte in March 2015. During the visit in Belo Horizonte a technical visit to the proposed Zone 30 was conducted in order to get feedback and the opinion from Mr. Glotz-Richter. The decision to include a Fahrradstrasse was made during the visit of Marcelo Cintra do Amaral and Eveline Trevisan in Bremen in April 2015.

Figure 1 illustrates the map of the current proposals of Zone 30, Fahrradstrasse, bike lanes and bike paths, as well as the pilot-project area. The proposal was discussed in 2014 during two workshops organized by PEDALA BH, which counted with the presence of cyclists and other civil society groups. If the pilot-project succeeds, BHTRANS intends to invest in the Zone 30 projects illustrated in Figure 1.

Moreover, a series of mobility measures have been implemented so far, that will contribute to the success of the pilot project and increase its upscaling possibilities. These measures are:

- Belo Horizonte bike sharing system, called Bike-BH, is already in place with 40 stations and 400 bikes and 10.000 registered users.
- Belo Horizonte already pedestrianized 2 streets in the downtown area. The new infrastructure also includes bicycle lanes and a terminal of BRT MOVE.
- Federal financial resources through PAC (Growth Acceleration Program) are available for the implementation of 150 km of bike lanes.

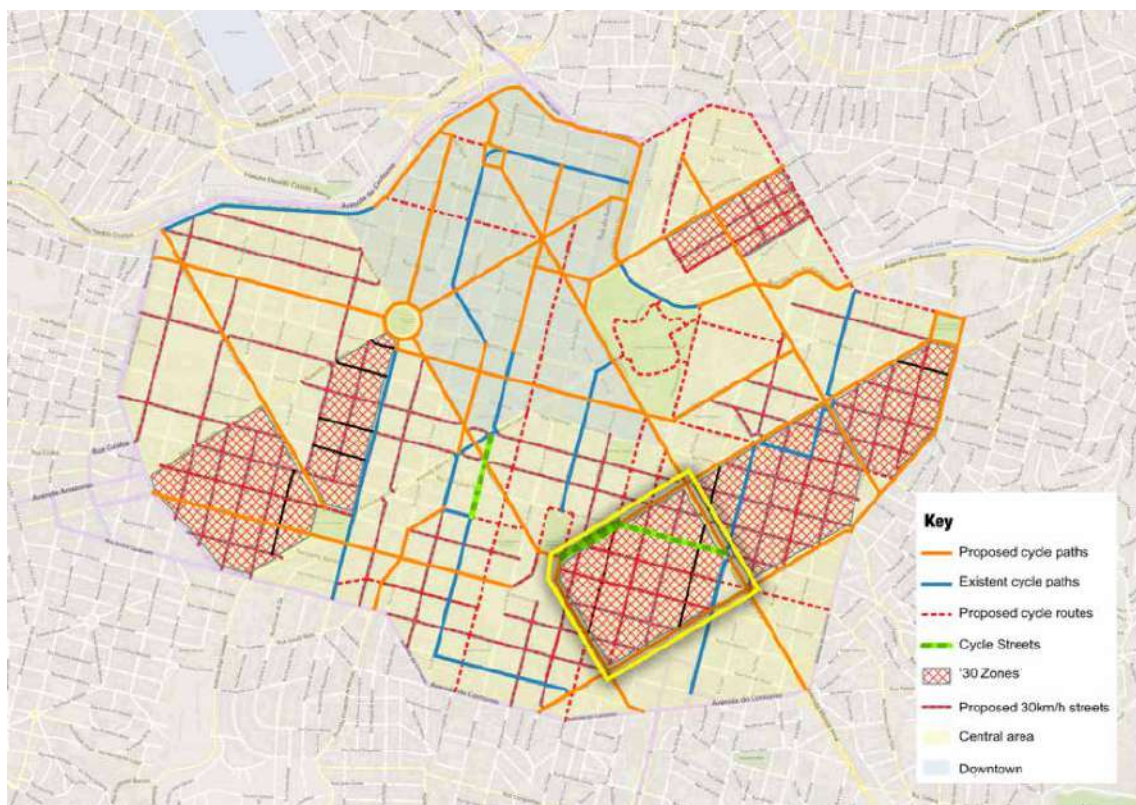


Figure 2: Proposal for the cycling network in Belo Horizonte and pilot project area

Brazil has a series of legal instruments in place to norm urban policy. For instance, the Federal Constitution of Brazil (1988) states that urban policy is the responsibility of the Municipality and must guarantee the social functions of the city and the development of citizens. It also establishes that the Municipal Master Plan is the basic instrument of urban territorial planning, and must define the use and occupation characteristics of each portion of the municipal territory, so that all properties fulfill their social function. In 2001, with the aim to regulate the Urban Policy chapter of the Constitution, the Statute of the City (Estatuto da Cidade) was approved. Its basic principles are participatory planning and the social function of property (Acioli, 2012).

Moreover, in 2012, the Ministries of Transport and Cities developed and launched the Sectorial Plan of Transport and Urban Mobility for Mitigation and Adaptation of Climate Change (PSTM). The strategy of the plan is to promote behavioral changes on travel patterns, by increasing share of public transport especially in major urban centers. The plan suggests four measures on how to achieve this. Cities must invest in:

- Infrastructure for urban mobility through public transport projects
- Urban planning through decentralization of the essential activities of the city and promoting service, study or leisure activities along public transport corridors
- Managing tools to improve urban mobility through regulatory and economic instruments to promote public transport and discourage individual motorized transport
- Adoption of alternative vehicle technologies, focus on improving public transport

As a consequence of the favourable technological environment of Belo Horizonte, in 2018 the municipality launched the Plan “Belo Horizonte – a Smart City”. As a matter of fact, Belo Horizonte has the highest density of information technology companies in Brazil: 331/100 thousand inhabitants. There are more than 250 startups in the San Pedro Valley (Brazil’s largest startups community). Its Technological Park, BH-Tec, one of the largest in the country, hosts important research and development companies. In addition, Belo Horizonte is a knowledge hub, as it comprises 62 universities.

In this context, Belo Horizonte conceived a smart city plan that involves five pillars:

1. Governance and Citizen Services
2. Economic Development and Tourism
3. Technological Culture and Digital Inclusion
4. Mobility and Public Safety
5. Environment, Sustainability and Citizenship

In Belo Horizonte, the Municipal Authority for Urban Policies is responsible for planning and managing urban projects like public infrastructure, housing, pavements, sanitation and transport. Under this Authority there is BHTRANS – „Empresa de Transportes e Trânsito de Belo Horizonte“, the public company responsible for urban transportation and traffic management in the city. BHTRANS plans, organises, guides, coordinates, executes, delegates and controls the delivery of public services related to urban transportation and road traffic, according to federal and state legislation, and it contributes to Belo Horizonte’s urban planning. In order to monitor and evaluate the implementation of PlanMob-BH through specific indicators, the city created the Urban Mobility Observatory and the Mobility Council, two important tools of social control that are responsible for providing information and collecting civil society demands for improving mobility. The Observatory is composed of 63 institutions that collect information, define performance indicators and prepare annual reports on the implementation of PlanMob-BH.

Financing and implementation of the planned project



Regarding the cost of the implementation, BHTrans did a rough estimation for the investment on infrastructure and traffic signs for the pilot-project that will cost around EUR 90,000, and also has the cost for an extensive education campaign that BHTrans estimates it will cost EUR 120,000. One of the main risks of the project is the lack of funding sources due to the current situation of extensive cuts in the city budget.

Learnings from the project development so far

The political calendar

A new mayor was elected in 2016 in Belo Horizonte. Thus, Marcelo Lacerda, the previous mayor of Belo Horizonte since 2009, postponed the implementation of the Zone 30 and Fahrradstrasse. This shows the importance of the political will and the political calendar in the implementation of the planned measures.

Nevertheless, the new elected mayor, Alexandre Kalil, who began his term of office in January 2017, decided to continue with the project despite of being from a different party. The implementation of a Zone 30 in 3 streets of the city centre of

Belo Horizonte is planned for this year. The pilot will serve to evaluate the measures and define next steps.



For the project to reach the implementation phase, it is important to take into account the priorities of the new mayor, as the project will have to adapt to them. One of the new frameworks in place in this context is the Smart City Plan. Thus, the pilot project has been redesigned in order to be in line with the new political situation.



Other planned project concepts in Belo Horizonte: Energy

In Latin American cities insecurity is part of the daily life of urban citizens, lowering public space occupancy and walkability. However, the experts state that the issue of safety has to be addressed with a pedestrian-friendly urban design more than with law enforcement (eyes on the street rationale). Security by design can be achieved by permeability of buildings, active ground floor, and good lighting. Graham Festenstein, an independent lighting designer states that adequate public lighting could “create an environment for people to use, to improve the well-being of those occupying it, encouraging more night-time use and thereby increasing the perception of safety (reduced crime, fear of crime and the associated financial and social costs)” (Smart Cities Dive, 2015).

In the context of the Smart City Plan, the municipality of Belo Horizonte plans the replacement of 171,000 lamps with LED technology, 26,000 of which will be part of a remote control management system (smart city plan). Thus, combining this public lighting measure with Pedala BH and BH a pé could contribute to increase the occupancy of pedestrians and cyclists in the intervened areas even at night-time. Thus, the design of the planned Zones 30 should include adequate public lighting, which will incorporate the replacement of lamps with LED technology.

Smart City Plan



Improving Public Lighting

It is worth noting that despite its benefits, urban design is not enough to increase the occupancy of public spaces. It should be combined with the necessary densities and mixed use. This premise is in line with another field of action of the Plan-Mob-BH, which is the implementation of Transit Oriented Development (TOD) along mass transit corridors.



Coleta Seletiva

Coleta Seletiva (selective collection) is a programme that consists in the separation and collection of the waste discarded by homes and businesses in Belo Horizonte. The programme has two types of selective collection in place: point-to-point and door-to-door. Before the implementation of these two modalities in the neighbourhoods, educational campaigns are carried out with the intention of educating the citizen about the subject.

The first modality, point to point, involves the installation of waste containers for paper, plastic, metal and glass in specific areas of the city. The population separates the recyclables at home or workplace and deposits them in the containers installed by the municipality.

In door-to-door collection, the recyclable materials are separated by the residents and placed on the sidewalk to be collected by the SLU teams. Currently, the service is provided in 36 neighbourhoods, reaching an approximate pop-

ulation of 390,000 people, in 125,000 households. It is performed once a week. All the recyclable materials collected by the selective collection are taken to associations or cooperatives of waste pickers, members of the Municipal Waste and Citizenship Forum (Prefeitura BH, 2018a).

The inclusion of this initiative in the pilot project will provide it with a new dimension. The pilot project will integrate the point-to-point and door-to-door modalities of the Coleta Seletiva Programme, adding to the cleanliness of the neighbourhood, the reduction of waste, citizen awareness and to the livelihood of waste pickers.

Waste management



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