









The COMPASSO Program

University Extensionist and Research Programs
School of Architecture – The Federal University of Minas Gerais (UFMG)
School of Design – The State University of Minas Gerais (UEMG)

September 15th, 2021









Agenda

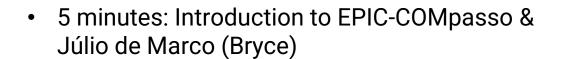












- 35-40 minutes: Presentation (Júlio)
- 5 minutes: Summary of presentation (Bryce)
- 10-15 minutes: Q&A (Júlio & Bryce)

Don't forget!

- Use the chat to ask questions or make comments.
- The session is being recorded and will be available on cityadapt.com where comments will also be published.

EPIC-COMpasso & Speaker











The **com**PASSO program and its context











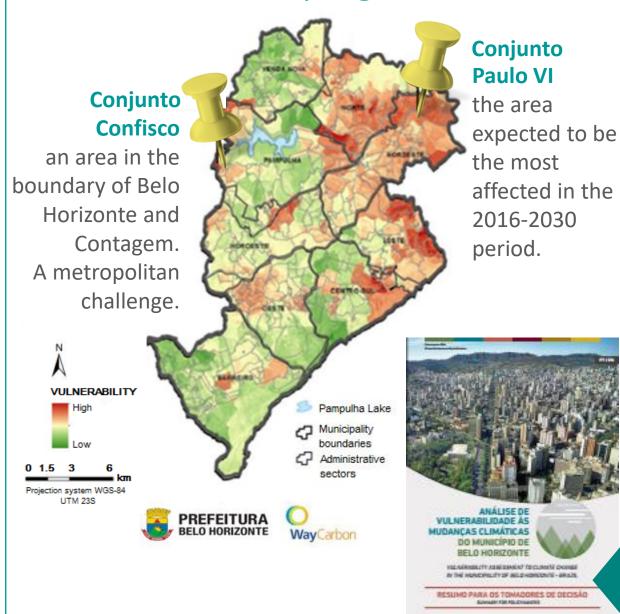


item	Description
Location	Latitude: 19º 46′ 35″ to 20º 03′ 34″ S Longitude: 43º 51′27″ to 44º 03′ 47″ W
Territorial Extention	331,18 km² / 127.80 sq mi
Population (2019)	2,5 mi inhab. city area - 5,4 mi inhab. metropolitan area
	3rd most populated Brazilian metropolitan area
Average altitude	875 m / 2,870 ft
Climate	Köppen-Geiger: Cwa – altitude tropical. (Now changed to Aw)
Average medium temperature	21,1°C / 69.98°F
Total annual precipitation	1.411,9 mm (1981-2020).
Annual avg relative humidity	77,3% with a dry period below 30%.



The **com**PASSO program and its context













Climate vulnerabilites in 2016 and a business-as-usual (bau) scenario projection for 2030.

Built environment vulnerability according to 4 factors.

Fundamentals of epic-compasso









Sustainability



To develop urban design tactics to foster resilience throughout the urban environment by carrying out actions to counter climate changes in vulnerable territories, bearing in mind natural, cultural and socio-economic processes.

Participation



To develop competences and skills of the program stakeholders (Local Government, the School of Architecture and community members) to listen, receive, to understand, dialogue, make decisions and take responsibility and land use responsability, aiming at instauring participative governance processes in them.

Autonomy of municipal management



The local government, the main urban environment manager, plans urban design actions to be undertaken in vulnerable territories to enhance resilience to climate changes. The result of of these activities are expected to be incorporated in future activities and procedures.

Students education



To develop didactic-pedagogical practices and experiences, in partnership with both local government and the target community, for developing and applying knowledge and solutions to foster urban resilience by implementing activities to counter climate changes in vulnerable territories.



Planning: adaptation to climate change









Activites developed in Conjunto Paulo VI with a view to presenting climate issues from the local perspective and to investigating means for citizen action in the territory.

Noroeste Leste
Cestro-Sul
2019

COMpasso team and students



Social Assistance Reference Center (CRAS)
Sobral Pinto Municipal School (EMSB)
The Urbanization and Housing Company of
Belo Horizonte (URBEL)





- Maintaining dialogues with the community;
- 2) Performing "Walks throughs" in the territory led by residents;
- 3) Conducting a Geodesign workshop with school children;
- 4) Conducting a climate vulnerability workshop during June festivities.













Planning: adaptation to climate change







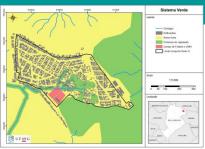


Schoolchildren geodesign workshop

Geodesign (Carl Steinitz American hub) – a co-creation process based on geo-collaboration to generate ideas for site intervention, comprising three steps:

Methodology **Step 1** Enriching site knowledge.

Understanding and "taking on" the study area – complementing available technical/official site information by adding local knowledge /perception of residents.





Locals know best!

Example of a System: Public space

Additional information: Local temperatures

Methodology Step 2 Proposals setting.

Launching spatialized intervention ideas (action/project/program) via thematic (public spaces, housing, transportation etc.) layering on GIS to build a pool of proposals.

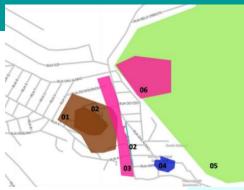
Example of a Proposition: Housing - removal of vulnerable units





Methodology **Step 3** Group proposals election.

Selecting ideas (merging/negotiating/voting) as systems are continually composed and overlayed.





Children's final agreement proposals:

1)Removal of houses in land sliding areas; 2)Paving streets; 3)Removal of houses under power line 4)Ice cream parlor 5)Leisure park 6)New housing



Planning: think-tank workshop









Brazilian Geodesign Hub

Tool experimenting virtual workshop

3 virtual sessions



COMpasso team and students



Belo Horizonte and Contagem municipalities technical staff
UFMG and UEMG teachers



Conjunto Confisco Community

Methodology Step 1 Enriching site knowledge

Understanding the study area – complementing available technical/official site information by adding local knowledge/perception of residents.



Methodology Step 2 Proposals setting

Launching spatialized intervention ideas (action/project/program) via thematic (environment/housing/ daily life) layering on GIS to build a pool of proposals.



Methodology Step 3 Group proposals election

Selecting ideas (merging/negotiating/voting) as systems are continually composed and overlayed.



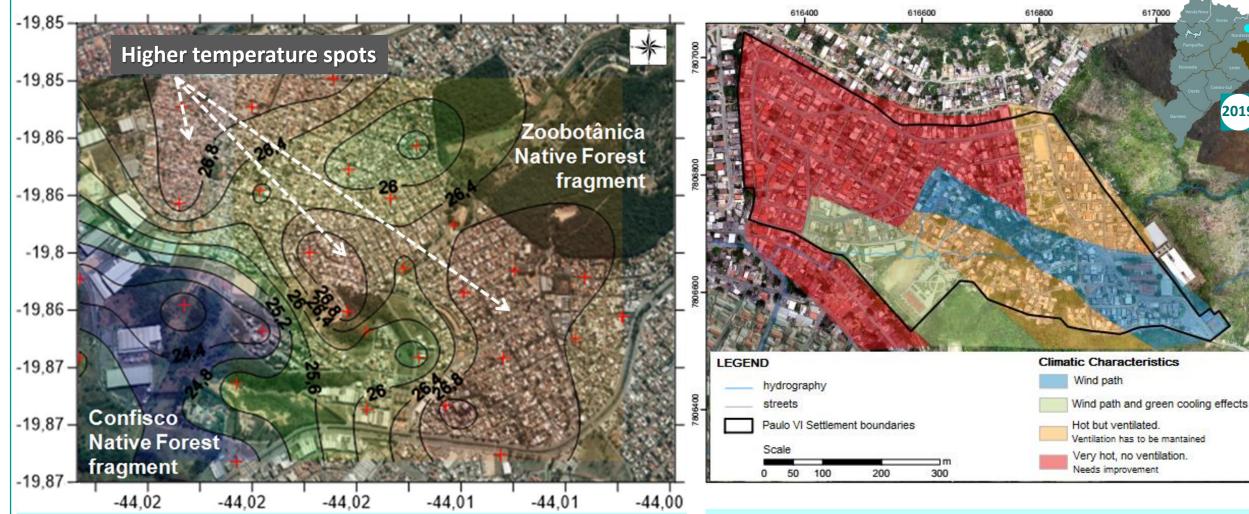
Surveys: microclimate assessment







2019



Conjunto Confisco

Heat hotspots: high dense occupation + poor vegetation covering. Cooling effects of the native forest fragments are strictly local, hence, an opportunity for linking those fragments via **urban green corridors**.

Conjunto Paulo VI

Preliminary local climate map analysis.

This **climatic zoning** was integrated into geodesign activities to provide more data to entice discussions on land use and development.

Agroforestry: Coqueiro Verde masterplan









2020

To develop a masterplan for the implementation of an agroforest in Coqueiro Verde site and to build support administrative/service unit.

COMpasso team



Secretary for Social Assistance, Food Security and Citizenship Architects without Borders (NGO)

Conjunto Paulo VI Community

Actions:

- Fostering engagement through "affective listening" method;
- Developing a participatory Masterplan;
- 3) Developing implementation plans for a support unity;
- 4) Applying evaporation tank TEVAP– building technology for septic tanks;
- 5) Training locals in soil-cement blocks production (for TEVAP).





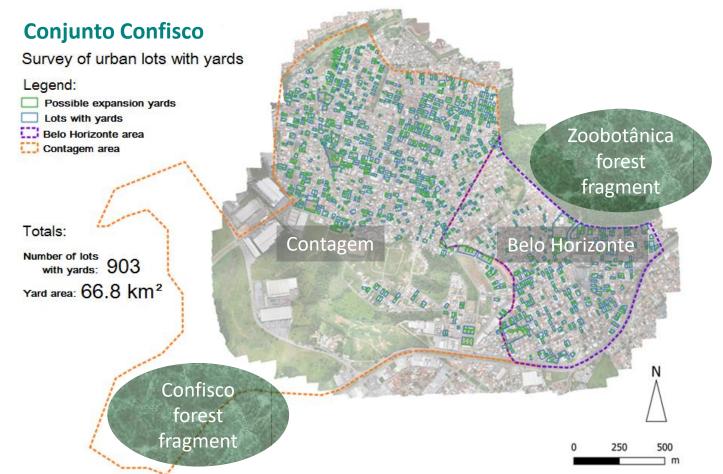
Afforestation: The Confisco initiative













Conjunto Confisco

Survey on the possibility of street standard (conventional) tree planting

Results: Total number of trees: 539

large-sized trees: 298

medium-sized trees: 223

small-sized trees: 18

- Creating green corridors connecting the 2 native forest fragments as an adaptation measure to local warming (cooling effect of vegetation);
- Creating backyard gardens and a collective orchard for food production to incentivate new local business;
- Lauching a project to **integrate actions between the municipalities** of Belo Horizonte and Contagem.

Communication: Creative Community Project







2019





A Project methodology based on systemic vision (non linear) of a given territory, considering their productive systems and material resources, associated with the knowing-doing processes and the community needs.

Community.

Outputs of a productive system must be turned into inputs to another local system, in a systemic, on going, way.

Principle

To promote balance among production, environment and society by means of the development of products, systems, services or processes.



Step 1 understanding the territory

investigating a given site considering its dimension, environment, society, culture, commerce and production, as well the relationship among them.

partial result: holistic relief

Step 2

systematizing and analyzing productive systems

calculation of all input and output from local productive activities

partial result: productive conceptual scheme

Step 3 designing

Development of material end energy flows among the productive systems of the territory

Partial result: conceptual scheme of the inner network relations

Step 4 confronting

Comparing actual (existing) approach with systemic (proposed) approach

Partial result: quali-quantitative comparative survey

Communication: Creative Community Project









Systemic Design | Branding – trademark and entrepreneur network development



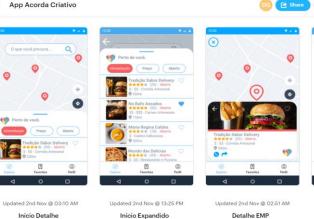
138 registered entrepreneurs

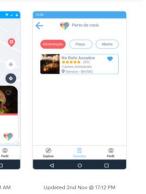
A free App promoting site residents' products. It is designed to connect Community members and entrepreneurs. (under development).











Communication: short videos project

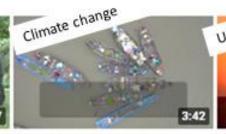


Projeto de Extensão: Apoio aos Sistemas Agroflorestais



Paredes Verdes Vulnerabilidade Climática

BEM ESTAR SOCIAL



Mudanças climáticas



Ilha de Calor



Acorda Confisco - Festival de Inverno

Housing: mass customization project









An action included in Forum Habitar, an event promoted by PACPS Federal University post graduation program

COMpasso team and students



Social Assistance Reference Center (Cras)
Sobral Pinto Municipal School (EMSB)
The Urbanization and Housing Company
of Belo Horizonte (Urbel)



Conjunto Paulo VI Community











To assess existing houses living conditions and to investigate into residents' actual demands for home spaces, based on participatory mass observation and citizen science;



To propose a family friendly social housing model.

Housing: alternative masonry coating for residences



UF MG





45% of exports of Minas Gerais State are mineral products. Iron ore tailings are not only an ecological issue, but also may cause a great harm when stored in dams.

The project is aimed at using this resource as raw material in the composition of masonry coating for social housing and at comparing the performance of dwellings considering three actions:

- Examining thermal performance of selected dwellings external walls prior to any covering;
- Applying the outer coating by means of community task-force;
- Sampling their internal and external temperatures before and after using the coating.



Plastic feature: mortar shades obtained through calcination using iron miner's tailings, with no addition of dyes.



ClimAtiva Project















João Pinheiro Foundation **Engineering School (UFMG)** Federal Center for Technological Education (CEFET) **ICLEI**



2 pilot cities 10 observant cities

Brazilian cities up to 100,000 inhab. have reduced institutional technical competences and financial resources to carry ou their climate impact analysis assessments and climate action plans.

The ClimAtiva project seeks to address this issue by implementing a custom platform to help municipalities do develop their assessments and plans to allow for a more inclusive national debate on the climate crisis.

It's also expected to provide grants for their search for sustainable infrastructure funding sources to implement their actions and plans.

The project is a branch of the AdaptaBrasil Network and is funded by the Brazilian National Council for Scientific and Technological Development (CNPq).

Thank you!



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Please write your questions in the YouTube chat!

