



# URBAN DEVELOPMENT SIMULATIONS & INFRASTRUCTURE DEMAND ASSESSMENT

## CHALLENGES

Rapid urban growth leads to considerable challenges for city administrations. Thus, solutions are required to secure sustainable urban development considering financing limits of city authorities as well as quality of life and environment, calling for tools and mechanisms that can help identifying priority areas for development.

Urban development is triggered by dwelling behavior of the cities' residents and of new migrants approaching the city, targeting the urban region as future living and working area. Influencing this behavior through appropriate urban policies and related measures allows driving urban growth towards a resource efficient direction.

Infrastructure planning can either respond to urban growth providing supply by following the demand or it can pro-actively shape urban development in a resource efficient way by providing supply directing the demand. Thus appropriate infrastructure design can serve as an instrument for "soft" urban growth management.





## OUR METHODS AND TOOLS

- Pattern recognition of satellite image data to estimate urban footprint development
- GIS analyses to investigate the current status of the urban infrastructure (the urban land use and transportation)
- Urban attractiveness estimations based on spatial data from Remote Sensing and GIS analyses using our ATTRACTIVENESS CALCULATOR
- Urban infrastructure development simulations and cost estimations using our URBAN DEVELOPMENT SIMULATOR
- Citizens engagement via participatory processes to co-design future development scenarios

## THE CITIES' BENEFIT

- Support for urban land use and transportation planning
- Detailed quantitative analyses of current trends and potential development pathways
- Estimation of infrastructure development costs for different development scenarios.
- Elaboration of enhanced co-designed urban development plans

## REFERENCE PROJECTS

- URBANICA - Urban development Simulator developed for the Inter-American Development Bank (USA)
- urbanAPI - Research Project funded by the European Union research programs to support urban planning decision making
- SMARTICIPATE - Research Project funded by the European Union to support citizen participation in planning processes.

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