An adaptive Strategic Framework

Exploring New Upgrading Strategies for informal Settlements in Bogotá, Colombia.

The rising poverty rates, internal displacement, market-oriented development and social inequalities are some of many factors that shaped the binary configuration of the so-called formal and informal urban fabric of Bogota. Urban informality emerges as the answer to a lack of opportunities and spatial offers, evidencing the inability of the existing planning structures to embody and decode the complex conditions, dynamics and vulnerability gradients that these environments entail. Bogota's upgrading program, despite being a crucial instrument in the transformation of informal areas, has proven to be insufficient to overcome the fragmentation between formal and informal urban dynamics, in which the generic and rigid approach has impeded the achievement of a structural change and local empowerment in a long term perspective.

The thesis proposes an alternative assessment and planning framework, as an opportunity to improve the current planning methods within a new long term perspective, that embraces and increases the adaptive capacity of the diverse vulnerable groups and systemic interrelations in the current structures of Bogota. This, by redefining the current overview of risk and to vulnerability, as potential tools to improve the local conditions from a co-evolutionary socio-ecological approach.

The proposed Framework is therefore not a definitive and static project. In turn, it is a dynamic tool to reveal the diverse challenges but also the amount of endogenous opportunities in the local informal environments. By redefining the role of nature and the role of formal and informal actors as co-agents of change in the development process, the proposed model aims to transform the segregated dynamics of the city, empower the local and most neglected communities, reinforce bottom-up approaches and provide alternative possibilities for more resilient socioecological systems that in turn are prepared to an uncertain future.

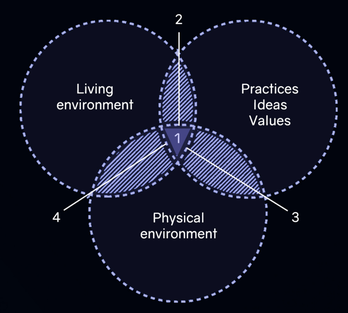
Main Research question

How can an adaptive strategic framework create a new planning vision for vulnerable areas in the city of Bogotá in order to achieve a sustainable, dynamic and cohesive urban environment?

Proposed Planning Framework - Coevolutionary Transformation

Strategic Goals

The Multidimensional vulnerability is defined by the diverse relations and manifestations between social, economic and ecological issues that are analyzed and exposed in the areas of analysis. In order to address the multidimensional vulnerability, the methodology proposes multiple correlations between two or more of the identified systems, whose interaction will affect their evolution and guide the transformation.



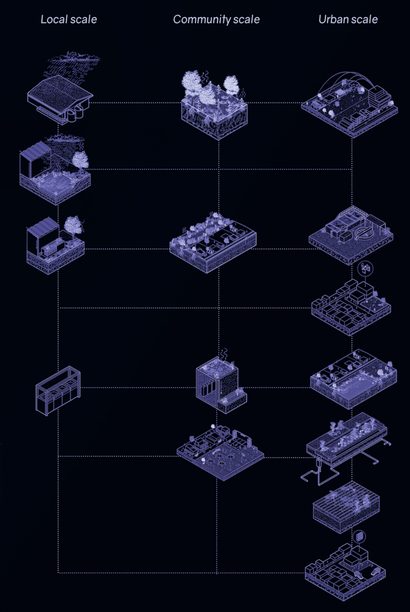
1. Strategic Core : Collaborative transformation of informal and formal agency
2. Strategic Goal: Productive Ecology
3. Strategic Goal : Endogenous activation
4. Strategic Goal: Systemic alignment through reprogramation

Based on the definition of "co-evolution" proposed by Giorgos Kallis (2007), the variables of analysis are grouped into three evolving systems. The definition of these three systems, and the understanding of the possible relationships between them, leads to the identification of the co-evolutionary subsystems. The first system is understood under human material practices, ideas and values that comprise the variables related to the socioeconomic analysis of the vulnerability index; the second system is that corresponding to the physical environment that comprises the variables related to the analysis of the socio-spatial system, and finally the third system is composed of the living and natural environment that comprises the variables related to the ecological vulnerability assessment. These systems and their possible interactions give rise to the approach of 4 co-evolutionary subsystems. As the evolution of cultural systems seems to have a negative impact on the natural environment, the links and co-evolution between cultural and ecological systems and processes should be explored. (Noorgard, 2010)

Strategic Actions

The proposed actions regarding each goal are classified according to the spatio/temporal scales of implementation, in which the evolution and correlation between the household level, the community level and the urban scale will guide an adaptive transformation, without an order, rigid plan and time of development.

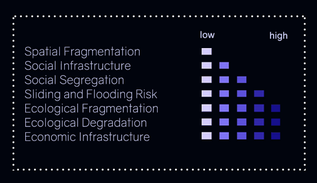
The actions to be implemented vary in their scale, time of implementation and complexity. However, the variability in their scale f implementation does not determine an order or specific plan of implementation. The possible combinations are determined by the needs of the context without a specific planning agenda or scale of the project. The process of Co-evolutionary transformation recognizes the importance of local groups as agents of change, and recognizes the cultural values and practices of a community as part of the guiding force of co-evolution between socio-environmental systems.



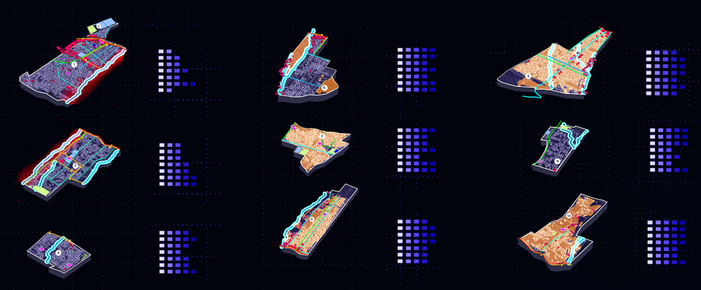
Proposed Assesssment Framework

Multidimensional Vulnerability Index

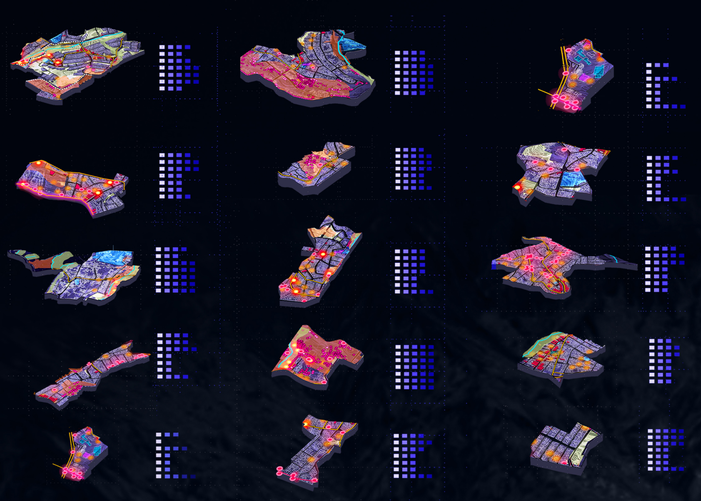
The analytical framework was structured based on the creation and development of a 'Vulnerability index'. The main value of this tool is that with it is possible to organize and prioritize the diverse analytical variables regarding socio-spatial, ecological and socioeconomic vulnerabilities that have an impact on the systemic operability of a city. Furthermore, this index was also instrumental when developing the assessment, in terms of bridging the adoption of a critical understanding and realizing the correlation of diverse systems (both social and ecological) in the structural causes of particular problematics evidenced in the selected areas of analysis.



Critical case study 1: Zonal Planning Unit Flora



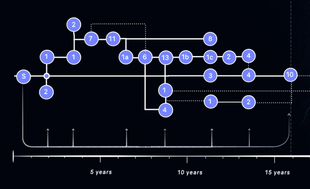
Critical case study 2: Zonal Planning Unit Lourdes



Coevolutionary Pathways

Critical case study 1: Zonal Planning Unit Flora

This implementation process is performed as a dynamic scenario that evolves in time, where, when each action reaches a culmination point, a coevaluation process opens up to the possibilities or needs of evolution, scaling up or complementing the intervention with further actions.



The Implementation framework for the co-evolutionary pathway is divided into five stages or phases that are put forward as a basis for the operationalization of socio ecological resilience in practice. These phases are organized in order to progressively counteract multidimensional vulnerability at different scales, and generate an evolutionary process that ensures the participation and integration of local communities as active agents in both decision making and coproduction of knowledge and therefore to strengthen the development of local capacities. This progressive transformation will provide the necessary tools to deal with the change and uncertainty, where the strategic actions will transform the functionality and physicality of space, as well as the sociocultural capacities to face the change, to adapt in a sustainable way to possible impacts and to integrate informal areas to the social, functional and structural dynamics of the formal city.

Planing Operability

The Operability Pathway starts from the current upgrading planning structure, where through a SAS (Story-and-Simulation) approach (Sepúlveda and Zargare, 2014) an implementation scenario is simulated starting from the first phases of intervention and analysis, involving the proposed tools and frameworks in the thesis. The SAS reveals the participation process among both formal and informal actors from a strategic perspective that addresses on the one hand the urban social and environmental aspect of the proposals under uncertainty variables in a long term period, and on the other hand reveals the necessary platforms to establish a collaborative process of co-design, co-evaluation and maintenance of the different interventions over time. The construction of this scenario is a dynamic tool, which considers from a general framework, the particular local conditions and designs a balanced support system at the time of taking decisions where the multi-actor participation increases the social and economic resilience and increases the capacity to face the change and uncertainty from the local to the urban (Sepulveda and Zargare, 2014).

a.

Context
1. Anchoring:
a. Connection to existing water systems
b. Connection to existing green structures

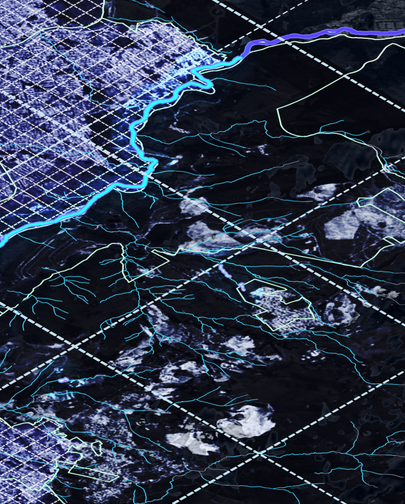
Interrelation of the proposed set of actions
2. Interrelating:
i. Blue infrastructure
ii. Green infrastructure

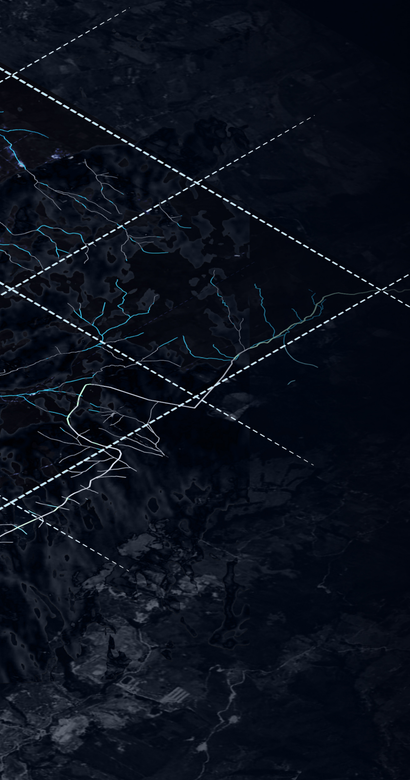
b.

Context
1. Anchoring:
c. Activation of underused space
d. Reprogramation of space

Interrelation of the proposed set of actions
2. Interrelating:
iii. Cultural and functional interrelation

Agency
3. Synchronizing:
Endogenous–exogenous synchronization





Critical case study 2:
Zonal Planning Unit Lourdes

Critical case study 1:
Zonal Planning Unit Flora

Territorial Delimitation of the current upgrading program in the Southern Border of Bogotá

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