

# Recommendations of Actions for Resilience and Sustainability

# ASUNCIÓN

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Executive Summary

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The *Recommendations of Actions for Resilience and Sustainability* (RAR-S) proposed in this report, and the work undertaken to define them, are outputs of the *Making Cities Sustainable and Resilient Action: Implementing the Sendai Framework for DRR 2015-2030* (MCSR) at the local level. This MCSR action is a joint initiative of UNISDR and UN-Habitat and receives financial support from the European Commission (EC DEVCO). Its overall objective is to improve the understanding of, and capacity to, address disaster risks and build resilience at the local level, by supporting national and local disaster risk reduction (DRR) and climate change adaptation strategies, while focusing on building local capacities.

Since inception in April 2016, the MCSR action has supported over 25 Local Governments to confidently address the risk and resilience agenda in their cities, using adapted tools and methodologies while increasing capacities. This report details the findings and projected way forward for the city of Asunción, based on the resilience analysis and diagnosis channelled through the *City Resilience Profiling Tool* (CRPT). UN-Habitat and the Municipality of Asunción have led the implementation of the CRPT in the city and have successfully overcome challenges related to data collection and revision. The project has secured commitment from key actors that play a role in current and future steps.

This report details the findings, analysis, diagnosis, and commitment building, as well as the *Recommendations of Actions for Resilience and Sustainability* for the city of Asunción.

We thank the Municipality of Asunción and EC DEVCO for making this report possible and we encourage all participants to proactively follow the progress of the city towards resilience.

# Introduction

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As a pilot city for the Making Cities Resilient and Sustainable (MCRS) project, the Municipality of Asunción has been working closely together with UN-Habitat over the last two years to create a comprehensive profile of the city and recommend actions to improve its resilience through the City Resilience Profiling Programme (CRPP) and its associated City Resilience Profiling Tool (CRPT). The City Resilience Profiling Programme (CRPP) thanks the Municipality of Asunción for its commitment to work as a pilot city for the MCRS project. Although several risk reduction and resilience initiatives have previously been carried out in Asunción, the municipality has openly accepted the implementation of the CRPT due to its transversal focus that leads to integrated resilience initiatives between different sectors at the city level.

The CRPP provides a universal framework that uses verifiable and contextualized city data to establish its resilience profile and form an analysis and diagnosis of its most pressing challenges. This profile and diagnosis provide a base for the creation of evidence-based and implementable Recommended Actions for Resilience (A4R) that are then incorporated into urban development strategies and existing management processes. This process is designed to support the Local Government to take an informed decision-making approach and in turn support long-term, resilient and sustainable urban development, in the Municipality of Asunción.

The Recommendations of Actions for Resilience and Sustainability Report (RAR-S) presents a culmination of the work conducted as part of implementing the CRPP in each pilot city. To both orient the reader and provide a truncated overview of the analytical process by which Actions for Resilience are developed, this chapter briefly presents the CRPP methodology. Description of the methodology is by no means exhaustive, but rather serves as a primer for the analytical findings presented in subsequent chapters. In other words, while the RAR-S report seeks to summarise the multifaceted implementation process, analytical and diagnostic efforts, and development of concrete recommendations for actions for building resilience in the pilot cities, it does not seek to provide detail for neither the methodological basis from which the CRPP was developed, nor the analytical process in its entirety given its extensiveness.

Building upon this brief methodological overview, this chapter provides an explanation of the scope and depth of analysis that is explored herein.

## CRPP: Main concepts

UN-Habitat's flagship tool for urban resilience, the City Resilience Profiling Tool (CRPT), provides a cross-cutting diagnostic and action-oriented approach for resilience-based sustainable urban development. Its methodology is based on UN-Habitat's definition of urban resilience, shown below, which encompasses a theoretical approach followed by a more practical description on what resilience-building efforts entail and target.

These definitions and understandings are important for cities implementing the CRPT and their collaborative partners as they outline the overall objective for the city. Without a shared understanding, catalysing engagement of stakeholders and garnering buy-in from partners is challenging.

**“Urban resilience is the measurable ability of any urban system, with its inhabitants, to maintain continuity through all shocks and stresses, while positively adapting and transforming toward sustainability.**

**A resilient city assesses, plans and acts to prepare for and respond to hazards – natural and human-made, sudden and slow-onset, expected and unexpected – in order to protect and enhance people's lives, secure development gains, foster an investable environment, and drive positive change.”**

In addition to these definitions, the following Urban Resilience Principles were developed to guide the process of achieving urban resilience in cities. Note that these principles are embedded within the structure, design, and implementation approach of the CRPP.



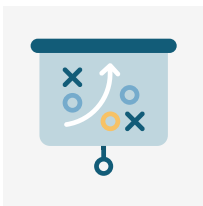
### **Principle 1** Dynamic nature of urban resilience

Resilience is not a condition but a state that cannot be sustained unless the system evolves, transforms and adapts to current and future circumstances and changes. Therefore, building resilience requires the implementation of context-specific and flexible plans and actions that can be adjusted to the dynamic nature of risk and resilience.



### **Principle 2** Systemic approach to cities

Recognising that cities are comprised of systems interconnected through complex networks and that changes in one part have the potential to propagate through the whole network, building resilience requires a broad and holistic approach that takes into account these interdependencies when the urban system is exposed to disturbances.



### **Principle 3** Promote participation in planning and governance

A resilient system ensures the preservation of life, limitation of injury, and enhancement of the 'prosperity' of its inhabitants by promoting inclusiveness and fostering comprehensive and meaningful participation of all, particularly those in vulnerable situations, in planning and various governance processes. Such an approach can ensure sense of ownership, thus achieving successful implementation of plans and actions.



### **Principle 4** Multi-stakeholder engagement

A resilient system should ensure the continuity of governance, economy, commerce and other functions and flows upon which its inhabitants rely. This necessitates promoting open communication and facilitating integrative collaborations between a broad array of stakeholders ranging from public entities, private sector, civil society, and academia to all city's inhabitants.



### **Principle 5** Strive towards development goals

Resilience building should drive towards, safeguard and sustain development goals. Approaches to resilience should ensure that efforts to reduce risk and alleviate certain vulnerabilities does not generate or increase others. It must guarantee that human rights are fulfilled, respected and protected of under any circumstances.

# CRPP: Methodology and alignment with the international Agenda 2030

The implementation of the CRPP is characterized by four overlapping steps: 1) data collection, 2) analysis, 3) diagnosis, and 4) recommendations for actions for resilience.

In order to better understand how the data collected leads to derived actions, clarity regarding how these key implementation processes are pursued and relate to one another is required. The implementation process is discussed briefly in the section below.

To facilitate the data collection and analysis steps, the CRPT is structured in four SETs. Each SET serves a specific focus, through which information covering the entire urban system are mapped, analysed and inter-related. Data analysed throughout these SETs, and subsequently presented in this report, are derived from existing databases, official documents, research and publications, among other verifiable sources. While much of these data provide quantitative information to conduct evidence-based analysis of the city, findings are complemented by a qualitative sources gathered through workshops, expert readings, etc., in an attempt to capture the city's nuances and contextual realities. Together, quantitative and qualitative data collection and analysis lead to an in-depth diagnosis of the city, thereby providing a base for the development of Actions for Resilience.

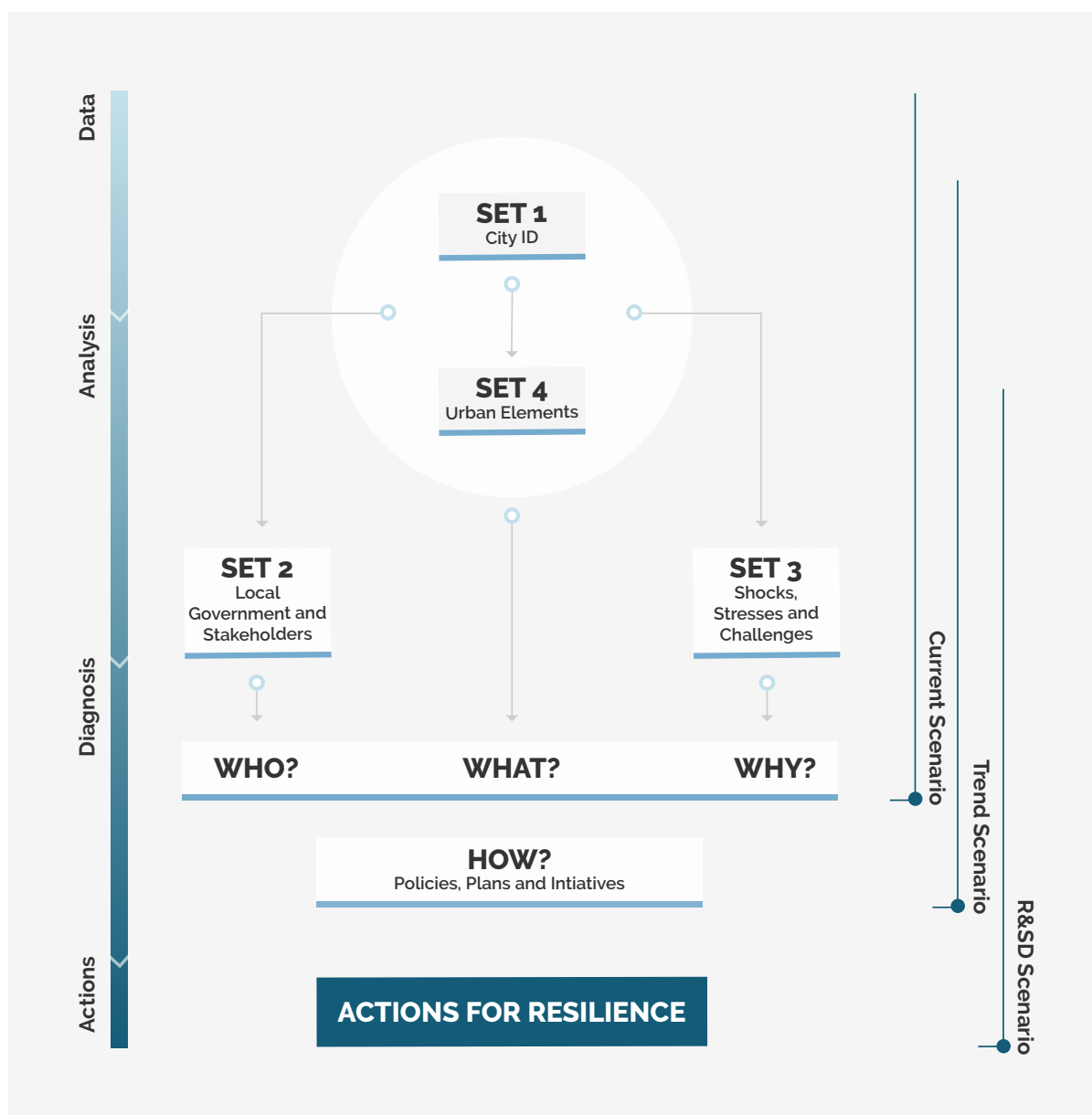


Figure: CRPP Implementation Process Diagram. Source: CRPP (2018).

As is illustrated in the diagram above, data is primarily collected in SET 1 – City ID, for context-related information, and in SET 4 – Urban Elements, for performance-related information. These data provide a basis to analyse the current strengths and weakness of the urban system and its performance – the WHAT.

Following this synthesis of data comprising the WHAT, information gathered regarding key stakeholders (including the Local Government) and shocks, stresses, and challenges (to which the city is found to be more or less vulnerable) are incorporated into the analysis.

In SET 2, stakeholder-related information is used to analyse the role and relationships of the different institutions and organisations acting in the city and determine the most influential actors – the WHO. This WHO is captured in Local Government and Stakeholder Analysis, which provides a brief mapping on the Local Government's structure, roles, and responsibilities. In addition, an overview is provided of key stakeholders from outside the Local Government (e.g. regional, provincial, national government, private companies, community organisations, NGOs, etc.).

SET 3 provides information regarding the existence, interactions, and prioritisation of the shocks, stresses and challenges in the city – the WHY. It is therefore the Shocks Analysis that examines the WHY by providing an overview of the various hazards faced by the city. This section assesses the various shocks, stresses, and challenges present in the city and summarizes the analytical processes conducted through which an identification and prioritisation of shocks was determined, which includes whether or not, and to what degree, risk reduction measures have been established and the severity of impact or risk each shock category potentially poses.

Information on the existing development efforts, based on established policy and/or legal frameworks, which guides the future development of the city (i.e. existing policies, plans and initiatives), provides a lens through which to apply findings derived from data collected in the aforementioned four SETs. This information is organised in an inventory that coherently maps these in relation to WHAT the issues are, WHO are able to act, and WHY action should be done, to determine current areas of focus, gaps and overlaps – to formulate HOW to act.

The result of these analyses is prioritised and implementable Lines of Actions or thematic areas of prioritisation, which are identified and agreed upon with the Local Government. Following a consolidation of CRPT analytical and diagnostic findings and integration of input from the Local Government and other key stakeholders, a focused, consensus-derived path towards resilience is formed. The Lines of Actions explore these resulting themes, presenting a culmination of collected data findings and preliminary analytical efforts, in combination with key stakeholder input derived from the several workshops conducted in conjunction with the Local Government. These Lines of Action can vary in scope but relate directly to both quantitative and qualitative information, representing a synthesis of each methodological step in the CRPT implementation.

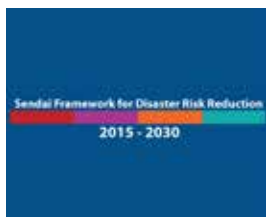
From these Lines of Action, Recommendations of Actions for Resilience are developed and proposed in order to co-create a resilient and sustainable roadmap for the city. These Actions are intended to be both implementable and feasible, yet precise in targeting and ambitious in their expected impact.

This methodology was developed in alignment with globally agreed inter-governmental frameworks, namely: Sustainable Development Goals, Sendai Framework for Disaster Risk Reduction, Paris Agreement on Climate Change, World Humanitarian Summit - Agenda for Humanity, and the New Urban Agenda. Aligning CRPP with these frameworks enables the Local Governments who have implemented CRPT to better understand, report, and deliver on targets.



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## Sendai Framework for Disaster Risk Reduction



The Sendai Framework calls for resilience on all levels, from local to regional and national. CRPP contributes to the Framework's overall objective to reduce vulnerability to disasters and increase preparedness for response and recovery, including contributions to the Four Priorities for Action:

- Priority 1. Contribution: Building evidence-based knowledge on disaster risk reduction;
- Priority 2. Contribution: Strengthening disaster risk governance through the adoption of plans;
- Priority 3. Contribution: Investment in risk reduction for resilience;
- Priority 4. Contribution: Scaling-up of preparedness and a 'build-back better' approach in recovery.

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## Sustainable Development Goals



Urban resilience relates to key elements of sustainable urban development and the goals of the post-2015 Sustainable Development Agenda, notably in Goals 1, 2, 3, 9, 11, 13 and 14 where resilience is referenced but also in other goals where it is implied. Resilience is also a strong component of many of the stated aims throughout the preamble and paragraphs 7, 9, 14, 23, 29 and 33 of the Declaration to the SDGs.

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## Paris Agreement on Climate Change



Article 7 calls for strengthening of resilience to climate change in the pursuit of sustainable development. By engaging Local Governments in these efforts, resilience in cities contributes to the following principles of the Paris Agreement:

- Adaptation (dealing with impacts of climate change);
- Loss and Damage (minimizing loss and damage linked to climate change);
- Role of cities (building resilience).




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## World Humanitarian Summit – Agenda for Humanity

The core responsibilities defined at the World Humanitarian Summit have strong foundations in resilience thinking and building. The approach adopted by UN-Habitat to build resilience contributes to Core Priority 1D, 4A, 4B, 4C, and 5A.

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## New Urban Agenda



Advancing the urban resilience agenda and working globally delivers on a number of key goals of the New Urban Agenda agreed by Member States during Habitat III, most prominently:

- New resilient planning paradigms in urban systems
  - Legal and regulatory frameworks to enable and govern urban development
  - Analysing risks inherent in urban areas
  - Promoting good practice in local economic, development strategies through marketing safer, resilient cities.
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## CRPP: Actions for Building Resilience

Actions for Resilience (A4R) constitutes the final product of UN-Habitat – CRPP’s urban resilience implementation process. The aim of this report is to better inform Local Governments, in this case the Municipality of Asunción, of the state of the city with regards to resilience, based on conclusions derived from of the CRPT implementation process previously described in this document. This document urges Local Government stakeholders to prepare, correct or apply initiatives (programmes, projects and plans) in a governance context that should be efficient, organized and transparent (with the Local Government leading the process) and within a safe and effective legal framework.

Actions for Resilience (A4R) aren’t necessarily built from scratch. Existing initiatives are taken into consideration, whether or not they are in progress or not. Actions for Resilience are not only focused specifically on the field of urban planning, but rather value sectorial initiatives related to each identified stress, in addition to those related to territorial development or planning.

**The methodology for developing A4R is robust, flexible, and versatile enough to allow its adaptation and replication in different contexts. It constitutes a guide for designing new initiatives or modifying those already being implemented to promote resilience and sustainable development of Local Governments, focusing on the particularities of specific contexts.**

In short, A4R builds evidence to modify and improve existing initiatives, as well as proposes new initiatives from a resilient and sustainable approach.

The added value of A4R includes the development of a shared vision among actors, through a participation and consensus building process, and alignment with international agenda frameworks.

This document is divided into three chapters that describe the stages of developing A4R:

- Current scenario: Identification and elaboration of the profile of the city.
- Trend scenario: Potential impact of current plans, policies and initiatives.
- Resilient and sustainable scenario: Recommendations of Actions for Resilience and Sustainability.

### Building the current scenario: Identification and elaboration of the profile of the city

The current scenario is characterized through data derived from quantitative and qualitative multidisciplinary indicators (SMART<sup>1</sup>: specific, measurable, achievable, relevant and timely), field visits, and local knowledge. In parallel, an analysis should be conducted regarding how the current governance system functions in the city.

The indicators that reveal shortcomings in the urban system are grouped by themes, which, combined in a multidisciplinary way, form a composition of stresses and specific to the context. In this scenario, the impacts of the most recurrent shocks and affected behaviour of the city are analysed: prevention and response measures are taken into consideration.

The compilation of these data serves as a snapshot of the characterisation of the city.

The urban system’s vulnerability to shocks prevents the achievement of the resilient scenario. The internal weaknesses of the urban system prevent the achievement of the sustainable scenario.

<sup>1</sup> United Nations Development Programme (UNDP). (2009).

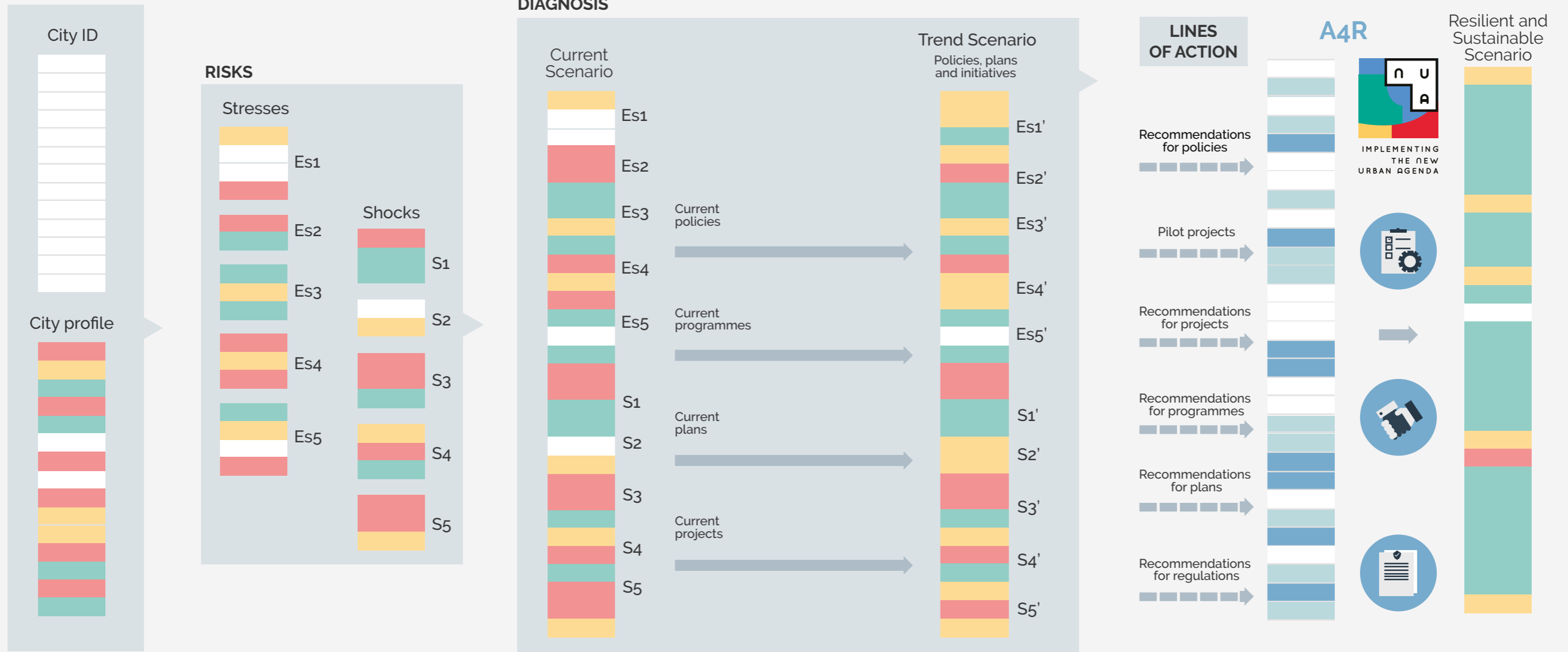
## **Building the trend scenario: Potential impact of current plans, policies and initiatives**

The trend scenario is built upon the current scenario, analysing the expected effects on the urban system of current initiatives (policies, projects, programmes and plans), whether they have been approved or not. The value of this analysis lies in its ability to propose potential corrections to certain negative trends or to include previously ignored issues into forecasting efforts. The trend scenario is the trigger for the formulation of Recommendations for Actions for Resilience. Likewise, the resilient and sustainable scenario is derived from applying the Actions for Resilience to the trend scenario and therefore presents a realistic transformation process of the urban system.

## **Building the resilient and sustainable scenario: Formulation of Actions for Resilience (A4R)**

The Actions for Resilience and Sustainability are organized according to the stress(es) they seek to address, their ability to be implemented, and the territorial scope they to which they apply. Although the first two categorisations offer a multitude of realistic actions to achieve a resilient urban system, through identifying the territorial scope, actions can provide changes to the urban system that support the incorporation of long-term sustainability in the city.

Figure: Process of building a Resilient and Sustainable Scenario. Source: CRPP (2019).



## Conceptual framework

The concept of urban resilience and sustainability is complex and multidimensional. The approach to evaluating the resilience of an urban area is informed by the systemic relationships between different urban sectors and stakeholders and the different lenses through which urban issues can be understood.

The main concepts related to the achievement of resilient and sustainable cities are: the underlying economic system, poverty, social segregation, social inequality, environmental degradation, lack of coverage and access to basic services, and urban metabolism management. At the same time, from these concepts, related stresses are derived; for example, social segregation occurs due to: the lack of social networks at both the neighborhood and urban scale, the lack of inter-institutional cooperation and between citizens and administrations, an inadequate legal or regulatory framework justice, real or perceived insecurity, the proliferation of precarious settlements, territorial imbalances, and degraded peripheries.

Stresses are also characterized through the combination of different themes, a combination that defines the particularities of a specific city. The uniqueness of each city is established through a composition of transversal or cross-sectional elements and interconnected stresses, a dynamic that should be taken into consideration when implementing different initiatives.

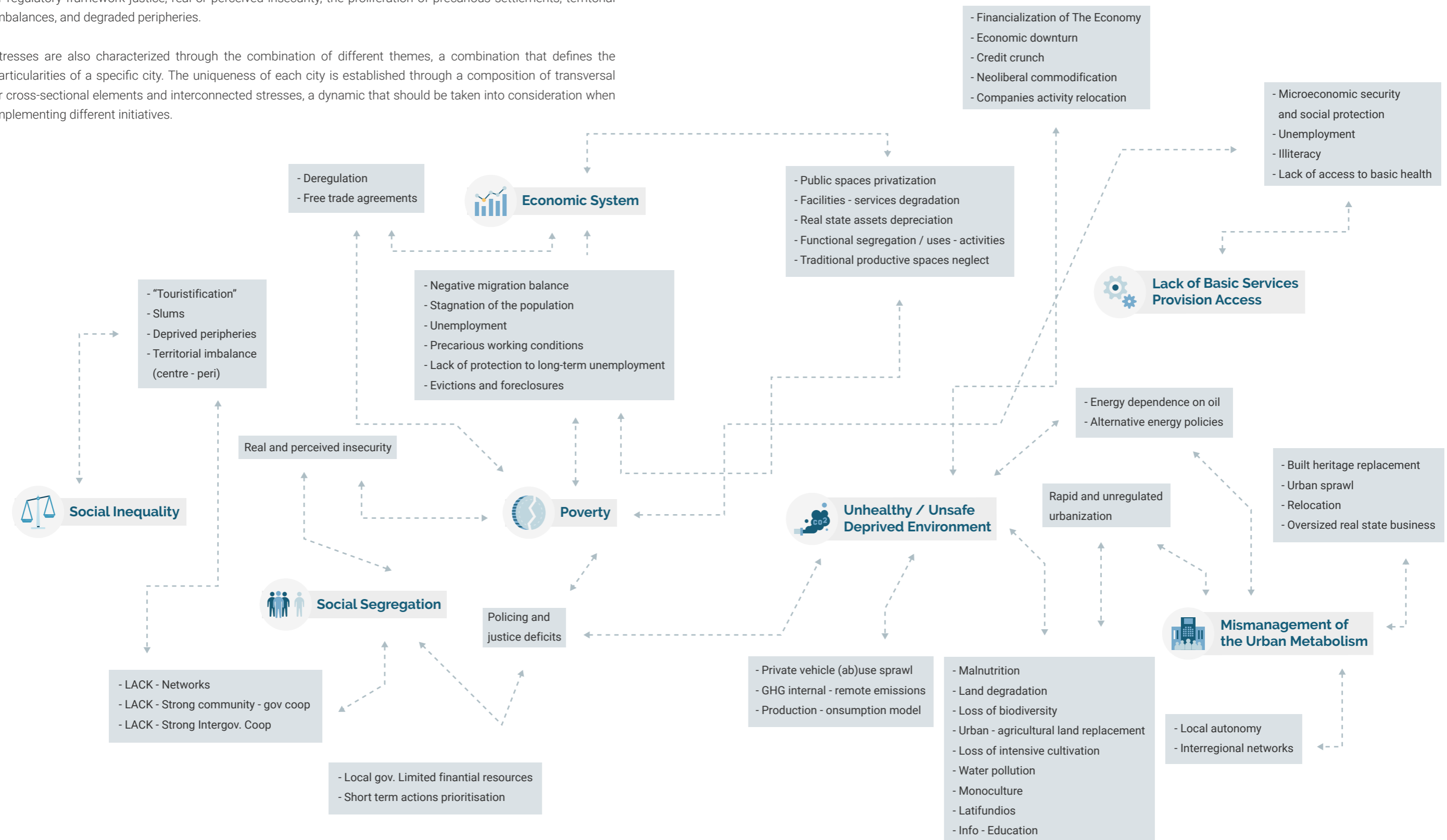


Figure: CRPP – Work process. Systemic approach.  
Source: CRPP (2019).

## CRPP: Implementation Process in Asunción

The commitment of the Municipality of Asunción to implement the CRPP methodology and thus to better understand and improve urban resilience in the city, began in the last quarter of 2016 with the presentation of the scope and methodology of the CRPP to the city authorities. The programme was formalised in 2017 through the signing of a Cooperation Agreement of the Municipal Intendancy with the CRPP Programme (April 2017) and the second, the approval by the Municipal Board of the City of Agreement by Minute JM / N ° 4.451 / 17 (October 2017).

During this period, the CRPP selected a Focal Point in the city, who attended training on the topic of urban resilience and the CRPT tool, with emphasis on gathering and analysing the data collected. In the case of Asunción, it was agreed that the data collection would be carried out by the Focal Point in direct coordination with the different departments within the Municipality. In addition, the Municipality established that the coordination would be carried out by the General Directorate of the Cabinet and the Social Area Advisory (Dirección General de Gabinete y la Asesoría del Área Social), and technical counterparts were assigned according to thematic areas. This mobility allowed for a smooth and constant coordination process and of exchange of information, as well as allowed the participation of the Focal Point in different events and activities organized by the Municipality.

Over the course of the implementation process, a report was issued together with a mid-term evaluation (May 2018), and four missions were carried out to promote and ensure the commitment of the authorities. In addition to the implementation of the training process and the promotion of participation by the entities involved, the missions were helpful for the validation of the diagnosis and results and for the creation of participatory spaces with the main actors/stakeholders.

The CRPT was implemented in Asunción following the methodology described above. One aspect to highlight is the willingness and active participation of the different departments and organisations of the Municipality through the exchange of information and technical meetings so that, jointly with the CRPP team, specific results could be obtained. In the initial stages of implementation, a contextual narrative is developed, providing a general vision of the city. Building off of this general vision, and through an evaluation of shocks, stresses, key actors and the Urban Elements, a city profile is created.

During the mission held in October 2018, validation of the pre-diagnosis and identification of the Lines of Action was carried out. After incorporating complementary information and conducting a consultation process in February 2019, the A4R Workshop was held with the participation of key municipal authorities, as well as a series of meetings that included a hearing with the Municipal Intendant and other relevant actors.

Based on the results obtained, the final version of the Recommended Action for Resilience and Sustainability (RAR-S) report was prepared, which includes a prioritisation from the territorial point of view, a classification by implementation approach, and relationship with the structuring of the New Urban Agenda. Through the Recommended Actions for Resilience and Sustainability, we understand that we have contributed to the generation of a roadmap for Asunción based on urban resilience concepts that are transversal and integral in nature and allow for sustainable development. The official launch and distribution will be held in April 2019. **(See Annex I. Implementation of the CRPP in Asunción).**



Figure: CRPP – Implementation process in Asunción. Source: CRPP (2019).

- Milestone events
- Major stages in implementation
- Other workshops / training missions
- Asunción participation in events

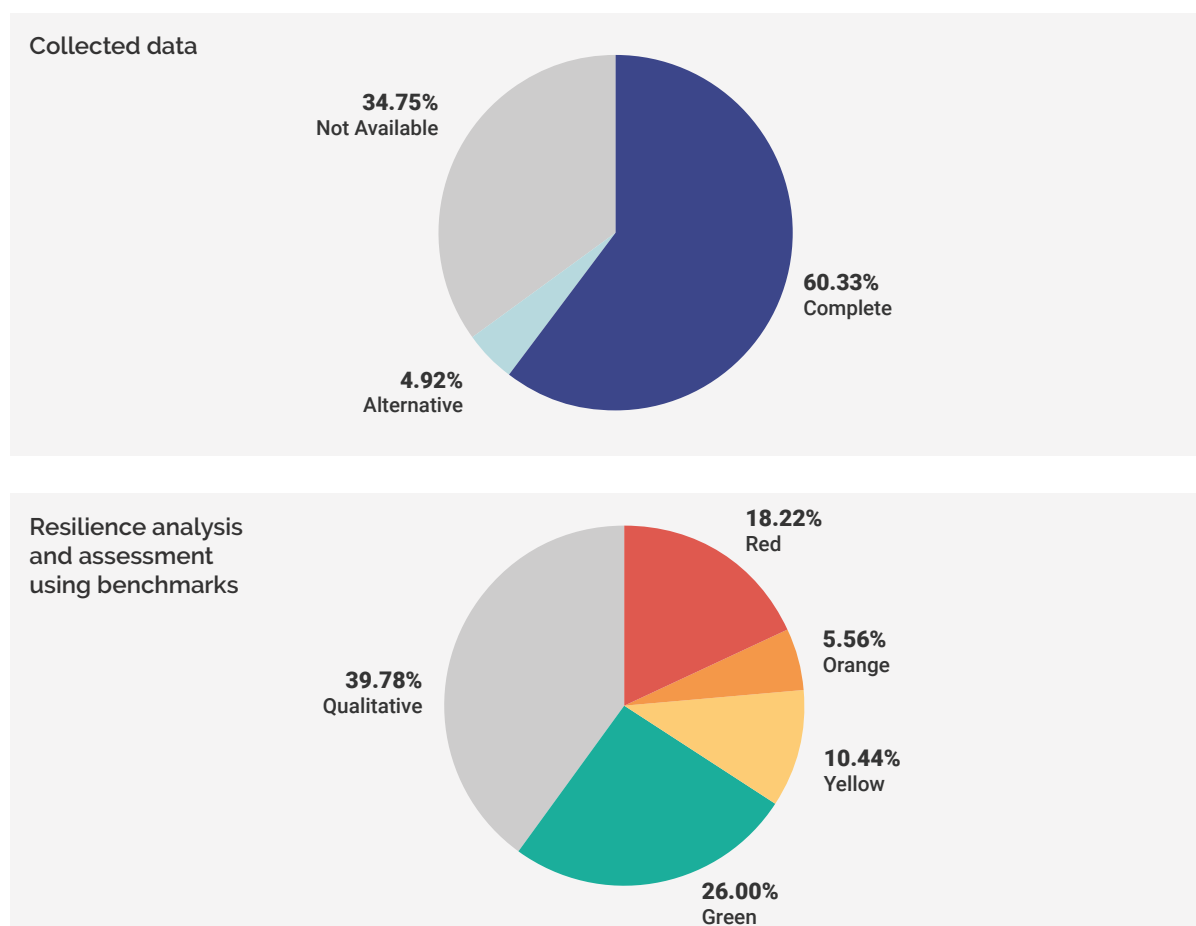
# Executive Summary



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## The logic of the Current Scenario: Collected Data and Analysis

The result of the analysis carried out in Asunción represents a snapshot, or Current Scenario, of the city's state of resilience. This snapshot is also completed with an analysis and mapping of actors and the governance framework, along with the shocks, stresses, and conditions identified as priorities in the city.



**Figure:** Visualisation of results after data collection and evaluation with respect to Resilience. Source: CRPP (2019).

In the analysis, a series of indicators are designed, analysed and classified into several thematic groups - Urban Elements - that offer sectorial urban information: Built Environment, Supply Chain and Logistics, Basic Infrastructure, Mobility, Municipal Public Services, Social Inclusion and Protection, Economy, and Ecology. Key results, or key findings, are obtained from each Urban Element:

### General issues:

- Information is obtained on some 750 indicators out of a total of 781 (with several ranges of importance), which implies a high efficiency process.
- More than 60% of the information responds precisely to the question posed, while 20% present a content that is difficult to assess.
- 35% of the information records a favourable situation in Asunción on issues related to urban resilience and sustainability.
- More than 60% of the data indicates that the resilience of some current city aspects could be improved by addressing stresses identified in the analysis process.







## Specific issues:

- Almost 20% of urban occupied land in the city is located in risk areas (sensitive to floods and with an impact on the environment). Approximately 20% of these spaces are occupied by informal settlements.
- The volume of losses in the distribution of water is high. Reports on the distribution network show the extensive existence of obsolete pipelines (around 200 km).
- 10% of the population use unsafe energy sources at home.
- There is a predominance of private motorized transport reliance to the detriment of public transport and pedestrian mobility.
- There is a high feeling of insecurity in the city. The penitentiary centres, which do not comply with international standards, have exceeded the installed capacity and there are more than 80% of detainees awaiting their sentence.
- Although Asunción could be an attractive investment destination, the analysis reveals that there is an absence of a financial model, ultimately discouraging investment in the city.
- There is a lack of effective mechanisms promoting participation due to the absence of economic support for such initiatives.
- There is not enough information regarding eco-system services or ecological footprint.



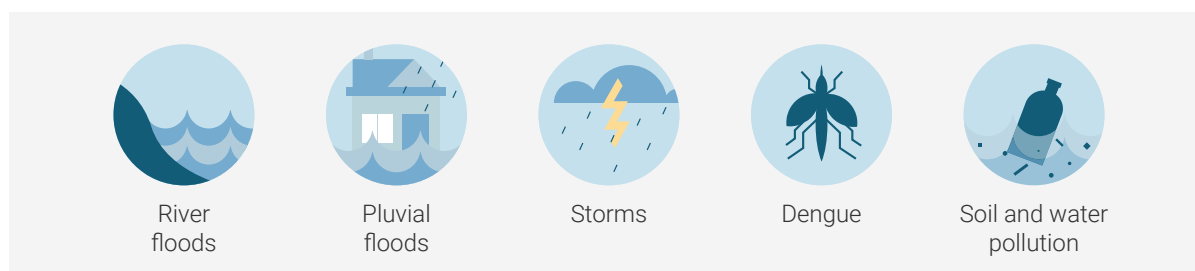
Figure: Current Scenario of Asunción. Identification of Stresses from the study of Urban elements. Source: CRPP (2019).

In parallel, additional local knowledge gathering activities – workshops, interviews with key actors, and field visits – yielded three additional stresses that impede or hinder the good development of the city. These stresses were subjected to statistical analysis to confirm if they are solid and have a scientific basis or if they simply reflect prejudices present in the local discourse. The shocks that usually threaten the city and structural conditions, along with their links and relationships, must be connected with these stresses. Modifying these dynamics would allow progress in Asunción towards a Resilient and Sustainable Scenario.

Local Knowledge	Statistical (Indicators-Based) Analysis
 <p>Water cycle disruption</p>	 <p>Dependency on unsustainable energy sources for mobility and lack of alternative energy policies</p>
 <p>Inefficiency and mismanagement of urban mobility system</p>	 <p>Poverty: Absence of mechanism of prevention and lack of citizens social protection</p>
 <p>Lack of quality urban planning regulations and mechanism of implementation</p>	 <p>Inefficient solid waste management</p>

**Figure:** Stresses derived from local knowledge, and Stresses derived from statistical analysis. Source: CRPP (2019).

Based on the Atlas de Riesgos de la República del Paraguay, developed by the National Secretariat of Emergencies (SEN), the city of Asunción is exposed to multiple Shocks. Five Shocks are prioritized, with respect to which a detailed analysis is conducted to know if the necessary Risk Reduction measures are being implemented:



**Figure:** Priority shocks in Asunción. Source: CRPP (2019).

Shocks were prioritized based on:

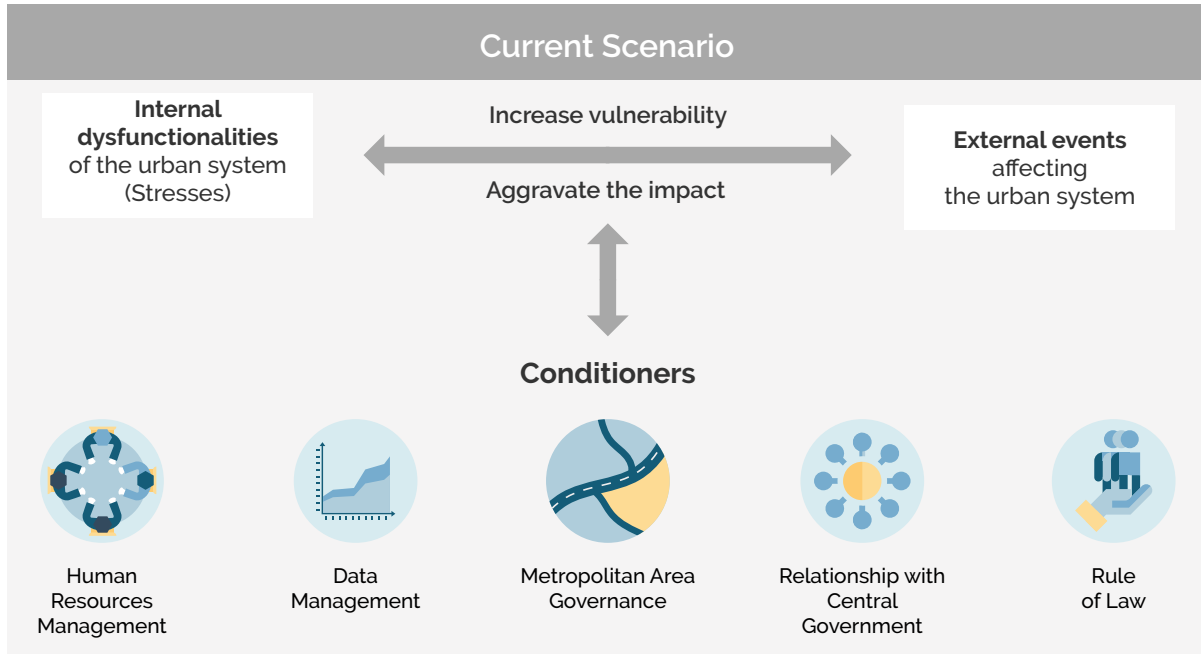
- The magnitude of the impact that each shock has on the population, assets, and processes of the city.
- The recurrence of events and their impacts in the different areas of the city.
- Analysis of how different shocks act on the diverse elements and components of the urban system.
- Projections of climate change trends in Asunción and how these trends may worsen the impacts of the identified shocks.

The city of Asunción and the development of its Resilience Profile with UN-Habitat became a case study for the project (GLORIOUS - Global users in the Copernicus climate change Service), developed by Lobelia for Isardsat, which has provided key information on climate change trends in the city derived from European satellite data and based on defined and calibrated models. Project findings suggest a high probability in the coming decades of increased temperatures and intensity of storms and floods, which may affect the incidence of Dengue fever as well as the recurrence of dry seasons. In addition, the city of Asunción is expected to be exposed to future episodes of extreme heat in all seasons, even in the cold season.

It is confirmed that there is a relationship between stresses and shocks and that this relationship is expressed as follows:

1. Stresses increase the vulnerability of the city to potential shocks.
2. Impacts of shocks are aggravated by the stresses that the city is experiencing.

In addition, the city of Asunción faces five conditions related to the capacity to implement initiatives that reduce its vulnerability.



**Figure:** Contextualisation of the Stresses in relation to the local constraints. Source: CRPP (2019).

From the analysis of Governance and actors for the implementation of initiatives, key findings include, but are not limited to:

- The Local Government has a high level of dependence on the National Government in the implementation of high impact initiatives. Current conditions and, therefore, urban resilience can only be improved through the mechanisms of vertical coordination.
- The capacity of the Municipality to mobilize resources is very low, which reinforces the dependence of the centrality of the country for integral urban solutions.
- The Local Government has the challenge of expanding and improving horizontal coordination processes (territorial organisations, municipalities of the metropolitan area, civil society, etc.) to improve urban resilience.
- There is a significant influence and participation of major cooperation institutions, such as the WB, the IDB and the CAF, and others that support through technical cooperation such as KOICA and JICA. There are also several relevant initiatives and programmes managed by UNDP with an impact on urban development.
- There are experiences such as the Inter-Institutional Roundtable for the Revitalisation of the Historic Centre of Asunción, the ASU VIVA forums or the work tables that are being generated from the Development Council of the Municipality, whose consolidation as permanent workspaces constitutes a challenge.
- There are specific coordination experiences, such as the inter-institutional roundtable for the revitalisation of the historic centre of Asunción, the ASU VIVA forums, and the working roundtables that are being organized by the Municipality's Development Council, whose consolidation as permanent work spaces constitutes a challenge.
- The Recommended Actions for Resilience (RAR) should be implemented with a shared and prioritized city agenda based on identified territories. Comprehensive interventions should be maintained over time, enabling continuity despite the temporal cycles of the local administration.
- The need for greater recognition of the importance, perspectives, and contributions of small-scale private stakeholders and civil society organisations arises. Further, it is critical that the Local Government continues interacting with vulnerable groups with a Risk Management approach.

## The logic of the Trend Scenario: legal and regulatory framework

Once the existence of inter-relationships between elements within a systemic urban logic is recognized, Actions for Resilience (A4R) are proposed. These should be aimed at correcting and reorienting public policies in all matters related to the identified stresses, potential shocks, and context determining factors. The purpose of this part of analysis – Trend Scenario – is to evaluate the extent to which the application of existing policies, programmes, initiatives and projects improve, worsen, or maintain the city's current state of resilience.

As a part of this effort, more than 80 existing documents were collected, including documentation related to sectorial development and territorial planning; at any administrative level and in any approval status.

A preliminary analysis of the documentation revealed:

- More than 75% of laws, plans, programmes, initiatives, and projects - have not been approved.
- 1 out of 4 documents is at the local scale of which more than 70% have not been approved.
- There has been an increased production of plans, projects, and studies in recent years.

Due to the multi-sectorial dimension of each of the identified stresses, the sectorial planning analysed corresponds to the areas (sectors) of the different themes that comprise them. For example in the stress Dependency on unsustainable energy sources for mobility and lack of alternative energy policies, sectorial policies that relate to the built environment, water and energy among others are analysed.

A subsequent analysis of the data reveals which issues relate to each of the stresses and which are already adequately addressed; therefore, identifying which implementation of existing planning documents would improve the performance of the city with respect to each of the six identified stresses. This subsequent analysis also shows which stresses are not currently being addressed through existing planning documentation and may require the development of new concrete initiatives to correct or eliminate identified stresses.

The amount of documentation already prepared represents an opportunity for the city of Asunción to achieve a Resilient and Sustainable Scenario; since it would allow the application of measures already contained in these initiatives in a more agile and immediate way than if they had to have been developed from the beginning.

# The logic of the Resilient and Sustainable Scenario: transversal lines of action and areas of opportunity in Actions for Resilience

Building off of the Current Scenario, the Trend Scenario can be developed, through assessing how the application of existing policies, programs, initiatives and projects would affect the resilience of the city – simply put: if it would improve, worsen or remain the same.

Therefore, the Trend Scenario emerges when applying the policies, plans and strategies prepared and / or approved to the Current Scenario, as these documents "direct" the path by which the city will be headed.

<b>Direct implementation</b>	The Municipality can carry them out directly, since they depend on their own decision making and/or competence. This type of action includes all measures proposed by the already approved at the local level.  <b>Example:</b> Plan regulador de la Municipalidad de Asunción
<b>Agreement</b>	The Municipality can pursue actions through consultation with other competent actors or agents, maintaining the ability to lead and/or exert pressure in a pro-active manner, to ensure that this measure is implemented. Agreement implementation includes measures approved at a metropolitan or national level (other administrative levels than the local one) or measures at any level, in which the weight of other actors, such as the private sector or civil society organisations is relevant. All direct implementation measures pass through an agreement stage within the Municipal Council prior to final approval.  <b>Example:</b> Plan de Revitalización del Centro, gestión de residuos
<b>Advocacy</b>	The Municipality does not currently have instruments to carry out this action, unless it advocates for or exerts pressure to implement them, since they depend on institutions of higher rank or and require legal or changes in municipal responsibilities.  <b>Example:</b> Ley de urbanismo o de ordenamiento territorial

These actions are structured according to the 5 dimensions of the New Urban Agenda (NUA): Urban planning and design, urban legislation and regulations, local economy and municipal finance, local implementation, and national urban policies.

Strategic working lines for Actions for Resilience (A4R) are established. The main intention in establishing these Lines of Action is to understand that combined stresses, shocks, and conditions are the expression from the diagnosis of what does not work in the urban system, or that is at risk of not working - . The Lines of Action themselves represent the themes that must be supported when considering actions to remedy the current and potential dysfunctions mentioned. Three Lines of Action are proposed to guide Resilience Actions: Water, Spatial urban structure and pendulum movement.<sup>2</sup>

Together with the Lines of Action, three large spatial areas of opportunity are identified, which represent type situations shared by other urban realities, such as: areas of urban regeneration or improvement, areas of revitalisation or intensification and areas of urban expansion. These three areas in Asunción are: the basins, the Coastal Strip and the Historic Centre.

<sup>2</sup> These are obligatory movements involving commuting between locations of residence and work. They are highly cyclic since they are predictable and recurring on a regular basis, most of the time a daily occurrence.

Source: Rodrigue., J.-P. (2017). The Geography of Transport Systems.

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## Water



Water constitutes a pre-existence in the city that conditions its consolidation and growth. Water is an element that constantly generates urgencies in urban management. Emergency management dominates the entire political agenda and public action of the Municipality. Overcoming this emergency condition and converting water into a structural element is the main objective when proposing it as a working Line of Action.

Currently, the city's actions regarding water are palliative actions. The objective is to propose recommendation and structural actions that definitively solve the problem and not only mitigate it. To build resilience, any initiative that is designed and implemented must integrate water into its conception.

The quantity and quality of the water resources, inherent to the existing rivers and basins in the city of Asunción provide a unique opportunity for the Municipality to modify the way in which the issue of water is worked and addressed, which allows to move from an urgent problem to a definitive and sustained solution.

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## Basins

The Basins project demands a change in the way of understanding, interpreting, and planning the city as a whole (it can even be extended to the metropolitan vision) by placing the question of water in the centre. Water remains a constant source of emergencies and concern. The articulation of all planning and programming of the city with consideration of the city's water catchment and distribution network requires a change of approach towards addressing water-derived problems.

**Action:** The revision and drafting of the new Urban Development Plan of the city of Asunción (Plan de Ordenamiento Urbano de la ciudad de Asunción), pending for decades, may serve as the definitive catalyst for reorienting the water catchment and distribution network and related infrastructure. From this exercise, all sectorial programming and planning on water catchment can be improved and aligned with national programmes.

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## Coastal Strip

The Coastal Strip project is already an Action for Resilience in itself. The project includes the building of a 64 m high protection barrier that will prevent fluvial flooding, recurrent in the North and South marshlands, and the provision of the necessary space for the resettlement of populations displaced by the protection barrier. However, the level of detail provided on the project does not allow for an evaluation of how other risks related to water are being incorporated. For example, the possibility of new flood risks coming from the interior basins raise the question, will these basins drain when they reach the low lying areas and must cross the perimeter road?

The principle of water as a backbone element should be taken into consideration in the definition of future drafts of the different sectors of the Coastal Strip.

**Action:** The planning of the Coastal Strip must be coordinated and respond to the configuration of the city basins to ensure that the distribution of the different areas - developable, urban consolidation and urban conversion, and undevelopable - are properly distributed. (The actions proposed in for water catchments are also applicable here).

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## Historic Centre

The Historic Centre project (proyecto de Centro Histórico) - possibly the least developed of the three opportunity areas - presents a great opportunity for linking the two previous areas of opportunity. If the Coastal Strip involves the expansion of the city, and the Basin restructuring is completed, the revitalisation of the Historic Centre involves a re-envisioning and enhancement of the densest area of the city.

**Action:** Ensure two issues related to water are addressed in this area of the city: on the one hand, introduce criteria in the design of public space that reduces vulnerability to torrential rains (for example, level of permeability of soils, water management (SUDS), sewage networks, etc.) and, on the other hand, ensure that the infrastructural capacity is sufficient for an increase in the population and demand throughout the entire area.

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## Spatial Urban Structure and Pendulum Movement



Spatial urban structure and pendulum movement<sup>3</sup> aims at synthesizing two interrelated dynamics in one: unbalanced spatial distribution of urban land uses and their density, particularly residential and economic activities, and the resulting urban mobility patterns. Thus, it attempts to address the stresses and pressures these dynamics pose on the resilience of the urban system as a whole.

This Line of Action involves existing urban conditions such as accessibility to the points of greatest attraction in the city as well as the mixture, compactness, and continuity of the urban fabric in contrast with the generalized approaches of municipal policies, which exclusively address mobility as an issue related to traffic and the management of modes of transport.

Spatial urban structure generates negative externalities, dysfunctions, and fiscal costs not only in the urban system of Asunción but in its bordering urban areas. In addition, it has important effects on social inequalities, the loss of competitiveness and opportunities for the city, as well as on health through pollution, among others.

Introducing the spatial urban structure Line of Action into public policies from the Municipality implies placing the focus on spatial organisation and configuration, the general urban model, the redistributive location of urban amenities, and land uses -- the intensity, and particularly the mixture of uses.

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### Basins

The restructuring and reorganisation of the city informed by water, and the basins in particular, should promote a rebalancing of the uses in the city, contributing directly to reduced forced mobility and therefore mitigating the effects generated by the spatial urban structure. The work by Basins should be oriented to promote active mobility - on foot or by bicycle - on routes of proximity, on streets that incorporate sidewalks and other necessary elements.

**Action:** Implement some of the proposals that are collected in the work – Caminemos! - carried out by Jan Gehl's office, that presents diverse solutions that can be carried out in different basins of the city through small-scale projects.

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<sup>3</sup> These are obligatory movements involving commuting between locations of residence and work. They are highly cyclic since they are predictable and recurring on a regular basis, most of the time a daily occurrence.

Source: Rodrigue., J.-P. (2017). The Geography of Transport Systems.

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## Coastal Strip

The Coastal Strip project assumes an unprecedented growth of the city's area (between 1,500 and 2,000 hectares) and will completely alter the dynamics of the city. Beyond the impacts of the road scheme of this new enclave of the city. The Coastal Strip project presents an opportunity to break the dynamic of existing pendulum movements caused by the spatial urban structure, which has a tendency to increase drastically between the urban centre of Asunción - where services and work are concentrated - and the periphery - where low-density residential areas are scattered throughout the territory. The opportunity to reorient this dynamic and reduce the negative impact it has on mobility throughout the territory will depend on the details of the project's approach.

**Action:** Ensure a level of development and grid density for the Coastal Strip that facilitates walking (there are recommendations of standards developed by both UN-Habitat<sup>4</sup> and Jan Gehl's office, which has completed studies specifically on Asunción).

**Action:** Guarantee a programme of uses in all sectors of the Coastal Strip, including different percentages of land/building uses and economic activities (e.g. allocated areas/spaces for retail, small-scale industry, offices (including public offices) and public services and amenities (assess needs related to education, health care, and other amenities related to culture and safety and locate them along the Coastal Strip).

**Action:** Review the densities of the coastal strip proposals to avoid reproducing a low density patterns in the interior of the city and socio-spatial segregation in the resulting new city (the first resettlement neighbourhood that has been built shows many shortcomings and approaches that do not work in favour of the future Resilience and sustainability of the city).

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## Historic Centre

The revitalisation of the Historic Centre of Asunción is a great opportunity to alter the existing urban structure realities in the city: a centre full of potential and currently lacking housing and urban intensity. Recovering the built heritage, intensify uses, and returning focus to public spaces will be decisive in reversing trends of population loss through metropolitan dispersion and suburbanisation models.

**Action:** Elaborating upon the Master Plan for the Revitalisation of the Historic Centre (Plan Director de Revitalización del Centro Histórico), based on the work developed by the Urban Ecosystem team, that allows the systematisation of Urban operations within its own elements: the urban proposal, the social inclusion proposal, the proposed financial model, and finally, the management and implementation scheme of the plan through the different mechanisms or defined urban features. There will be a general review of the Centre's Ordinance, which can be included in the city's Urban Development Plan, and which should be carried out without further delay.

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<sup>4</sup> UN-Habitat (2014). A New Strategy of Sustainable Neighbourhood planning: Five Principles.

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## Economy



It has been demonstrated that cities became the centres of creation and concentration of wealth and prosperity. This macro concentration hides large contradictions such as persistent inequalities in cities and the difficulty of redistributing wealth and prosperity among the entire population.

Therefore, it is crucial to include in any public policy action the economy Line of Action. From the public sphere, the local administrations in particular, can exercise and influence a redistribution that the market alone cannot not guarantee.

Introducing the economy Line of Action, due to the advantages and potential of the concentration economy, involves asking at all times how the action to be implemented helps to improve, enhance or increase the adequate livelihoods for the population from the city. An integral look in which the economy and training (education and culture) go hand in hand. The development of the city in all its dimensions has the capacity to promote livelihoods that must be adapted to the population, including vulnerable groups.

This economy Line of Action informs for what and for whom the development or action promoted in the city is oriented: what kind of economic activity will the uses that are being considering attract? Are all the work centres accessible from every corner of the city? In what way and with what reliability? On which economic sectors does the city of Asunción rely? Which sectors are promoted? In what way does the population interact to these sectors? The economy Line of Action reflects a combination of Asunción's present reality and its anticipated future.

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## Basins, Coastal Strip and Historic Centre

Asunción seems to lack a clear economic development strategy beyond reliance on its capital status, and as such, the main service centre of the country. There exist some initiatives to increase employment, through training and capacity building, but without a clear vision towards the economic development of the city. It seems that Asunción does not take advantage of the agglomeration economies typical of cities. However, intervention in these three areas of the city – Basins, the Coastal Strip and the Historic Centre - again presents an opportunity to overcome this current trend (characterized by a hands off approach) and take advantage of the economies of urbanisation envisioned as part of these projects, and embrace a medium and long-range vision.

The city attracts new population constantly. New arrivals are often unskilled workers, which expands the informal economy. Turning the development of the three areas into dynamic projects to help spur the local economy of Asunción must respond to the livelihoods of this unskilled people and also open opportunities for young people.

**Action:** Define an economic development programme for each of the areas of opportunity, in coherence with the strategy proposed by the National Development Plan of Paraguay 2030 (Plan Nacional de Desarrollo del Paraguay 2030). This programme should be oriented in two lines of work: one of development economic (in line with the three objectives of the PNDP2030: reduction of Poverty and social development, inclusive economic growth, inclusion of Paraguay (Asunción) in the world), and another of promotion of the project itself to attract private Investment initiatives.

**Action:** Analyse and take stock of the existing assets in the city based on the logic discussed for the Basins and Historic Centre. From a basins or water catchment perspective, it is possible to work with a certain degree of sectorial specialisation without losing sight of the need to include amenities, services and housing. Therefore, a basin could be focused on education (for example, if it includes a university or other important educational amenities), another focused on health, or heritage and culture, etc.

A shared and prioritized city agenda must be generated from the design and implementation of Actions for Resilience (A4R), based on identified territories; and establish the need for comprehensive interventions, sustained over time, beyond the time cycles of local administration.

It is necessary to emphasize that, together with the process of implementing Actions for Resilience, Asunción has as its greatest challenge a change of urban model, imperative to formalize the Resilient and Sustainable Scenario to which it aspires.

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Find out more about the **City Resilience Profiling Programme**  
and **UN-Habitat's partnerships** with other cities at:

**[www.unhabitat.org/urbanresilience](http://www.unhabitat.org/urbanresilience)**

[info@cityresilience.org](mailto:info@cityresilience.org)

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## Recommendations of Actions for Resilience and Sustainability

### ASUNCIÓN

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This report details the findings, analysis, diagnosis, and commitment building, as well as the Recommendations of Actions for Resilience and Sustainability for the city of **Asunción**.