

Innovative Governance for Participatory Design of a Green City

Land-use Planning, Sustainable Mobility, Solid Waste Management, and Urban Biodiversity Conservation in Paraguay

PROJECT FULL NAME	COUNTRY & REGION	IMPACT AREAS	EXECUTING AGENCIES
Asuncion Green City of the Americas – Pathways to Sustainability	 Paraguay	<ul style="list-style-type: none"> Poverty Reduction Socio-economic benefits Health Education Inclusion 	Ministry of Environment and Sustainable Development (MADES)
GEF PROJECT ID: 9127	FOCAL AREAS		IMPLEMENTING AGENCY
PROJECT TYPE: FSP IAP: SUSTAINABLE CITIES	<ul style="list-style-type: none"> Biodiversity Climate Change Mitigation Chemicals and Waste, Climate Change Adaptation 		United Nations Development Programme (UNDP)
GEF PERIOD: GEF-6		GEF Project Grant \$ 7,493,120	Co-financing Total \$240,340,000

Summary

“Asuncion Green City of the Americas – Pathways to Sustainability” is one of the GEF investments aiming to support Asuncion’s ambition to become a green and sustainable city. Through an integrated approach, which seeks to advance integrated land use planning of the Metropolitan Area of Asuncion (AMA), reduce greenhouse gas (GHG) emissions from transportation and waste, reduce unintentionally produced persistent organic pollutants, and improve protected area management in the AMA. Since the AMA population has dramatically increased in the last couple of decades, unstructured growth has created a series of challenges, such as lack of adequate and integrated urban planning, sustainable transportation, solid waste management, and

management of green areas. The project has strengthened inter-governmental coordination and a roadmap of integrated sustainable and resilient urban planning. It has also adopted a people-centric approach demonstrated through a participatory design of a 600km bicycle lane network and community-led restoration of an ecological reserve in the AMA. Furthermore, it developed National Plans for the Integrated Management of Solid Waste and Hazardous Waste Management, and validated a proposed plan to recognize and consolidate a green corridor with relevant stakeholders.

This brief introduces key success factors for the project and lessons learned. Adaptive management



Cycling for climate @ MADES-UNDP-GEF - Bruno Ferreiro

was necessary to absorb changes and institutional capacity building was critical. In addition, a key to successful implementation was an innovative governance system for relevant stakeholder engagement to improve lack of coordination among different national and local government institutions. The project also promoted joint initiatives between government and the private sector to advance good practices in waste segregation and promote a circular economy together with local vulnerable communities. Development of different kind of knowledge products and training to provide technical guidance was another success factor to ensure and scale up the activities.

Results, Global Environmental Benefits and Other Benefits

The project's key results to date are the following.

- **Governance mechanism.** Inter-governmental coordination has been strengthened through the project's Working Groups on Land use planning and Municipal financing that integrated by relevant national and local government institutions, which led to the creation of an Association of Municipalities of the AMA to consolidate integrated sustainable and resilient urban planning and budget.
- **DRR Plan and Strategy.** A roadmap of integrated sustainable and resilient urban planning of the AMA for 11 cities applying the Sendai framework has been developed. The roadmap has led to comprehensive disaster risk reduction (DRR) plans and strategies in ten cities, risk scenarios in 11 AMA municipalities, and Asunción's flood response plan. Asunción is currently building their DRR.
- **Bicycle Lane Network.** Participatory design of a bicycle lane network in the AMA has been developed through a working group for sustainable transport and mobility. It includes a complete design of 600 km of connected bicycle lanes, detailed design of 61km of bicycle lanes connecting four cities and main historic attractions and green areas, and a guideline for design of bike lane in the AMA.
- **Chemicals and Waste Management System.** National Plans for the Integrated Management of Solid Waste and Hazardous Waste Management, as well as technical guidance and training for municipalities were developed by the Ministry of Environment and Sustainable Development (MADES). A waste segregation campaign with the private sector contributed to provision of safer and cleaner materials for recycling.
- **Green Corridor.** 13,000 ha of green corridor in the AMA were mapped out and the proposed green space conservation plan was validated with relevant stakeholders.

- **Restoration of Ecological Reserve.** The project restored the Banco San Miguel ecological reserve in collaboration with local communities. For example, the brigade cleaned 7.3 ha of area, removed 98,480 kg of waste from informal dumpsites. A small dam had been built to restore a shallow beach ecosystem, key for migratory birds. Around a hundred members of the local community benefited through recycling, segregating waste and composting workshops; three local schools with 200+ students benefited from workshops on recycling, health, and segregating waste; and 19 ha of exotic invasive species were removed from the ecological reserve.
- **Biodiversity Monitoring.** Biodiversity monitoring and assessment of five globally significant migratory bird species in Asuncion Bay has started in the ecological reserve in the AMA, and all species increased their numbers or achieved the mid-term target.¹

Environmental Challenge

As in many other developing countries, the urban population in Paraguay has dramatically increased. Unstructured growth has created a series of challenges, such as the need for integrated urban planning, sustainable transportation, solid waste management, and management of green areas. Although covering less than 0.2 percent of the country's surface area, the AMA generates almost 47.9 percent of Paraguay's gross national product. Thus, Asuncion and the ten municipalities of the AMA play a key role in the sustainable development of the country. It is critical to have integrated sustainable and resilient urban planning across the 11 municipalities.

The challenges in the AMA are interlinked. They originate in the little or lack of adequate and integrated urban planning to face the accelerated expansion due to weak institutional capacities, little or lack of medium- and long-term planning and of inter-institutional coordination. One of the main problems in the AMA is its urban transport network. The rapid, unplanned urban expansion in the AMA has resulted in an unsustainable transportation system that accounts for around 40 percent of total greenhouse gas emissions in the transport sector. The other issue is solid waste management. The amount of municipal solid waste produced by the AMA reaches about 1440 tons per day. However, waste collection services cover only 68 percent of the population with the rest disposed of at 20 illegal dumpsites. Management of green areas is another issue.

Asuncion has an extraordinary endowment of natural resources in part because of its location on the shores of the Paraguay River and its position at the confluence of four distinct ecoregions. However, habitat conversion and degradation are eroding the global value of this biodiversity endowment, and reducing the viability of species. This habitat conversion is largely due to expansion of services of all kind, including transport system to accommodate the daily influx of people from surrounding cities and settlements, and the increased production of solid and liquid waste.

Integrated Approach and Key Features

Innovative Governance to Facilitate Multi-stakeholder Dialogues

Little or lack of coordination among different national and local government institutions was one of the key challenges in developing integrated sustainable and resilient urban planning in the AMA. Thus, the project established innovative governance for relevant stakeholder engagement. The governance mechanism works effectively as a key decision-making body. The Project Board, for example, meets annually to approve project activities and annual budget, and review project implementation. The Board consists of representatives from all relevant government institutions namely 1) Minister of MADES, 2) Minister of Ministry of Urbanism, Housing and Habitat (MUVH), 3) Minister of Ministry of Public Works and Communications (MOPC), 4) Minister of Secretariat of Technical Planning (STP), 5) Minister of the National Emergency Secretariat (SEN), 6) Mayor of Asuncion, 7) Representative of Asuncion Municipal Development Council and Platform of AMA Municipal Development Councils, 8) Inter-American Development Bank Resident Representative, and 9) UNDP Resident Representative. The Project Board was particularly effective in prioritizing and building consensus about cross cutting urban planning among different national government institutions, 11 municipalities in the AMA and key donors of projects.

The other key governance mechanisms are a technical committee and eight thematic working groups.² These served as more practical and open dialogues and a coordination platform that aims to build trust among different stakeholders. This more frequent inter-

¹ Since the start of monitoring in 2018 until December 2020, the following bird species have been registered: Pectoral Sandpiper (*Calidris melanotos*) (3120 individuals), White-rumped Sandpiper (*Calidris fuscicollis*) (754 individuals), American Golden Plover (*Pluvialis dominica*) (309 individuals), Lesser Yellow legs (*Tringa flavipes*) (614 individuals), and Buff-breasted Sandpiper (*Calidris subruficollis*) (138 individuals).

² The eight working groups are on 1) land-use planning, 2) municipal financing, 3) institutional capacities, 4) disaster risk management, 5) platform on sustainable cities indicators, 6) sustainable transport and mobility, 7) chemical substances and solid waste management, and 8) urban green and protected areas.



Ecological reserve cleaning brigade @ MADES-UNDP-GEF - Santiago Davalos

institutional dialogue helps coordination and built trust among the working group members, leading to successful implementation of the project together with the technical committee. The committee provides technical support in four areas: land-use planning, transportation, waste management and urban green areas. The working groups consists of representatives of the partner institutions, academia, the private sector, NGOs, public institutions, and consultants, and serves as a great platform for active engagement of diverse stakeholders. Each working group consists of over 12 different institutions around 20 people per group, and meets every one to two months to discuss action plans for each topic. These working groups are particularly helpful for 11 municipalities in the AMA to exchange information, learn from each other and build consensus towards integrated urban planning.

Collaboration with the Private Sector and Local Communities

Joint initiatives between the Municipality of Asunción and MADES and private sector entities such as Coca Cola Paraguay and other local enterprises supported advancing good practices in waste segregation and

promoted a circular economy together with local vulnerable communities. The joint initiatives achieved objectives through discussion and finding the mutual interest of stakeholders in the solid waste management working group. First, the Asuncion Green City project with MADES led to develop the mapping of the urban solid waste value chain in the AMA, which provided information on recycling companies, intermediaries, public institutions, waste pickers, and their relationships. This mapping exercise led by governments identified all members of the value chain and included them in discussions about the separation pilot. In the AMA, there is no large-scale waste recycling or recovery initiatives, and only a few small and medium size enterprises exist. Therefore, the informal sector mostly makes a living from waste picking, and an estimated 3,500 people in Asuncion make a living out of waste separation. Thus, it was critical to include them in the discussion of solid waste management.

Based on the working group discussion and in a joint initiative with the private sector, a waste segregation campaign, "Asuncion Recycles," was launched. The campaign engaged 17 neighborhoods providing great awareness raising and training opportunities.

The campaign successfully recovered 37,225 kg of recyclable waste (plastics, cardboard, paper, and aluminum). It reached 2,521 residents, and trained more than 20 recyclers/waste pickers through the campaign. After that, the “My Neighborhood Without Waste”, a joint campaign between the project and Coca Cola, was launched to implement a Separation Pilot in five neighborhoods of Asunción and to connect recyclers (an Association of Waste Pickers of the San Francisco Neighborhood) with the five pilot neighborhoods. Collaborating with other circular economy projects initiated by the private sector and other stakeholders, this campaign also supported provision of safer and cleaner materials for recycling. Furthermore, to promote larger scale recycling in the AMA, the Business Plan for the Separation Pilot Plant was completed. It will segregate for recycling materials such as paper, cardboard, metals, plastics, and tetra brick.

Multiple Knowledge Products and Training for Scaling up Impact

To ensure and scale up activities beyond the 11 municipalities in the AMA to include other cities in Paraguay, the project developed different knowledge products and organized training and workshops to provide technical guidance. For example, the National Plan for the Integrated Management of Solid Waste and the National Plan for Hazardous Waste Management included guidelines for municipalities to develop their own plan to integrate solid waste management. Furthermore, the project developed technical and

operational guidance and training for solid and hazardous waste management. In addition, it carried out training sessions for solid and hazardous waste management beyond the 11 municipalities in the AMA, extending invitation for training session to 17 other municipalities.

To incorporate green infrastructure concepts into city planning and develop a proposed green corridor in the AMA, the project developed a Green Infrastructure Manual, and MUVH organized related training. The manual includes guidelines to promote urban green corridors and conserve green spaces. Through bimonthly meetings of the working group for urban green and protected areas and support from technical officers, directors of local governments reinforced commitment and follow-up actions to establish the AMA green corridor. To ensure institutional capacity, training for urban forest nurseries management was carried out; the manual for the creation and management of urban forest nurseries was provided to municipal technical officers and directors. This was because urban trees are keys to connect green areas within the AMA and to enhance biodiversity within and around the urban areas. To further promote biodiversity conservation in the AMA, native tree seeds were collected and incorporated into municipal forest nurseries as well. Furthermore, the project has developed a good practice manual to provide guidelines and criteria for the 600 km bicycle network, which is linked to the corridor in the AMA and has trained municipal officers in the use of technological tools for land-use planning and DRR management.



Capacity building - Urban forest nurseries workshop @MADES-PNUD - Irene Gautó



Recording green areas TV show - Photo credit Paraguay TV



Metropolitan land-use strategy building process - Launch event - Photo credit MADES-UNDP-GEF - Eliana Tolces

Lessons learned

Communication and Coordination for Adaptive Management

For this project, the working group was an effective platform for communication among relevant stakeholders. In addition, the Project Coordination Unit's role in coordination and facilitation of consensus building among different stakeholders was critical for flexible adaptation. Since sustainable urban planning involves many different national and local government institutions, it was indispensable to frequently share and discuss updates of project activities among all institutions involved. These frequent communications through the working groups enabled different institutions to build trust with each other, and exchange successes and challenges. At the same time, it was vital to take time in the beginning to ensure all relevant stakeholders were involved in the process, and that they felt comfortable to participate and speak up. Facilitation of discussion towards consensus building was also important among different stakeholders.

Frequent communication and coordination among key stakeholders were also critical for adaptive management. The project has faced many small and big changes almost every day and needed to adapt to all these changes (involving government, government staff, priority of action plans, NGO staff, and even government priorities (e.g. cancelation of the Metrobus Project)). The Covid 19 pandemic required changes in work schedules and implementation. These changes affected campaign activities, workshops, seminars, training, consultations (e.g. delay of activities, holding several small group meetings instead of one big meeting, and meeting online if possible) to accommodate recovery from the pandemic in the country. Frequent communication and strong coordination were vital to accommodate these changes and agree upon alternative plans of action in the working groups.

Institutional Capacity and Technical Capabilities for Sustainability

Stronger institutional and technical capacity to carry out activities and maintain initiatives are vital for appropriate implementation and sustainability. This is a fundamental requirement to develop implementing programs properly so they have a lasting impact. For this project, almost every activity includes an adequate preparation

and training for technical professionals. Apart from a training course, it produced many valuable tools for municipal governments such as the Green infrastructure Manual, Manual for Urban Nurseries, Guide to elaborate local DRR Plans, Guide for the elaboration of Local Municipal Solid Waste Management Plans – Small and Medium Cities and Large Cities, Guide for Best Practices and Best Technology available for Hazardous Waste.

The project also organized a series of capacity building and awareness raising activities for local communities. For example, the Association of Waste Pickers of the San Francisco Neighborhood took part in capacity building sessions on how to formalize the association, keep track of documents, develop internal procedures, and manage social media. These sessions helped them become more coordinated as a group. The project has also worked with leaders of community organizations to organize workshops and trainings on tire recycling, composting, and organic gardens. It also launched a photo contest for young people to identify the natural resources of their community and the problem of waste in the area. In addition, it produced awareness raising materials including i) videos on the impacts of waste on the environment, composting and the 3Rs in solid waste management and informative brochures for students; and ii) composting workshops for women who are waste pickers and leaders of their communities. As a result, the income of waste pickers increased by 48 percent as of June 2021.

References and multimedia

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Sustainable bus stops opening - Photo credit to MADES-UNDP-GEF - Eliana Tolces

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The Global Environment Facility was established on the eve of the Rio Earth Summit to tackle our planet's most pressing environmental problems. Since then, it has provided more than **\$21.7 billion** in grants and mobilized an additional **\$119 billion** in co-financing for more than **5,000 projects** and programs. The GEF is the largest multilateral trust fund focused on enabling developing countries to invest in nature, and supports the implementation of major international environmental conventions including on biodiversity, climate change, chemicals, and desertification. It brings together 184 member governments in addition to civil society, international organizations, and private sector partners. Through its Small Grants Programme, the GEF has provided support to more than 26,000 civil society and community initiatives in 135 countries