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EXECUTIVE SUMMARY

Amazon Cities and Sustainable Urban Development



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The technical cooperation project “Strengthening the Amazon Cooperation Treaty Organization”, known as the Amazon Regional Program, is implemented by GIZ on behalf of the German and Dutch governments (BMZ-DGIS). The project responds to the need to strengthen the capacities of the regional organization ACTO so that the latter can deal with the demands of the Amazon countries (Brazil, Bolivia, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela) by means of regional initiatives and action for sustainable development in the Amazonia.

I. INTRODUCTION

The need to develop a study that provides a general panorama regarding the occupation and urbanization process in ACTO's eight Member States in the Amazon region was identified in early 2017 within the scope of the challenges proposed by the Strategic Amazon Cooperation Agenda (AECA) from the permanent secretariat of the Amazon Cooperation Treaty Organization (ACTO). Funded by GIZ and developed in collaboration with the UN Economic Commission for Latin America and the Caribbean (CEPAL), along with ACTO, the present study may be considered as a response to demand, and intends to establish a base line to direct and strengthen prioritization, decision making and research in the region, as well as identify the main challenges and opportunities facing amazon cities that are striving to achieve sustainable development. The study was developed within the scope of the 2030 Agenda for Sustainable Development and Sustainable Development Goals (SDGs), specifically SDG 11, the New Urban Agenda (NUA) which results from Habitat III, the third United Nations Conference on Housing and Sustainable Urban Development, and CEPAL's Regional Action Plan for the Implementation of the New Urban Agenda in Latin America and the Caribbean as well as other regional and global agendas, initiatives and agreements.

Three sub regions were defined which included the following countries:

- a) Bolivia, Colombia, Ecuador and Peru
- b) Guyana, Surinam and Venezuela
- c) Brazil

The main objective of the study was to provide the needed foundation of knowledge and research to support the elaboration of a working agenda to promote sustainable urban development in the Amazon. In October 2017 and February 2018 sub regional studies were carried out; these were proposed based on a review of existing literature and the already existent Amazon data base. This review aimed at analyzing and systematizing the main aspects of the occupation and urbanization process in the Amazon, as well as the challenges and opportunities that regional urban hubs face in order to achieve cities and human settlements that are safe, inclusive, resilient and sustainable.

This document is a summary of the main conclusions contained in the complete study, thus offering an important input to the discussion and progress of sustainable urban development in the region.

2. HISTORICAL ANALYSIS OF THE OCCUPATION AND URBANIZATION PROCESS IN THE AMAZON

Historically, the Amazon has been considered a homogenous region, rich in biodiversity, isolated, unin-

habited and void of human settlements with the exception of the indigenous villages. The truth however, is that the region has historically been occupied by a large diversity of populations coming from many different regions, and today the estimate is that the Amazon has about 40 million human inhabitants, from which about 70% reside in urban centers (UNEP and ACTO, 2009). Besides that, a large portion of the indigenous and rural population in the region is strongly linked urban centers and the urbanization process.

The historical development of the Amazon has been determined by a series of social, economic, cultural and environmental factors. It is possible to observe a transition that developed from the cultural shocks and initial configuration of the system, that along with the drop in missionary work, the region was transformed through activities related to rubber extraction, the promotion of national integration and occupation fostered by the state, as well as the emergence of illegal activities. The Amazon of the XXI century has been flooded by an accelerated urbanization process, even though it is isolated. It continues to suffer pressure from the development of mining and energetic activities, as well as from agriculture and livestock colonization of the rainforest which began in the XX century, and from the amplification of projects for road infrastructure, electric generation and interconnection networks.

The Amazon is a diverse region, full of cultural, social and biological wealth, and its development has resulted in deep changes for each of these systems. Over the last few decades, rapid change has taken place. These changes are generally associated to the expansion of roads and other infrastructure in the region, the growth of forest extraction industries, agriculture, mining, activities related to the generation of fuels, and populational migrations. The changes of land use in this area, which are fruits of the growth and expansion of economic activity, infrastructure development and the establishment of settlements, have generated an accelerated transformation of the amazon ecosystem.

Given this context it is of utmost importance to highlight the vulnerability of the Amazon region in light of the processes of global change, such as land use change and climate changes. The amazon rainforest is regarded as one of the areas that are most vulnerable to climate change in the world, and climate change is affecting the region to the point of inflection (Kriegler, Hall, Held, Dawson, & Schellnhuber, 2009; UNDP, 2016a). High levels of deforestation, loss in biodiversity, contamination of waters, deterioration of indigenous peoples, loss of indigenous culture and finally, environmental degradation in urban settlements negatively affect the ecosystem in the region, increasing the pressure on local cultures and negatively impacting the life quality of human populations in the region (UNDP, 2016a).

3. THE AMAZON AND SUSTAINABLE URBAN DEVELOPMENT

The Amazon is currently undergoing a period of intense development and urbanization, a process with important implications for sustainable development in the region. In the past, the extraction and production linked to development in the Amazon has been characterized as being broadly extensive and inefficient (UNDP, 2016a). In this context, cities play an important role in determining the processes, dynamics and impacts of development in the region and also have the potential to be the guiding force of social, economic, ethnic, environmental and territorial transformation in the region, moving towards a more sustainable model of development.

Achieving sustainable development in the Amazon requires knowledge and integration of multiple drivers, including national, international, border, regional and global pressures that determine development in the region. It also entails a massive transformation in order to identify and implement alternatives for development that fit the specific context and that are born from investment and strategic exploration, alongside the establishment of best practices for integrating and respecting the group of social, environmental and economic needs and priorities of the region.

The countries that share this rich and fragile region have employed efforts towards the conservation and sustainable development of the Amazon; despite these efforts, a United environmental vision for the Amazon has yet to be developed. (UNEP and ACTO, 2009)

4. MAIN CHALLENGES AND OPPORTUNITIES FOR THE SUSTAINABLE DEVELOPMENT OF THE URBAN AMAZON

The historical analysis of the development and urbanization; identification of challenges and opportunities; and a review of the already existing policies, programs, plans and relevant projects allows us to identify a set of priorities and key aspects that must be approached in order to progress towards the sustainable development in each country and the region as a whole.

The expansion of human settlements and urbanization in the Amazon are all part of a process that is the fruit of extraction activities, these being closely linked to environmental troubles that Amazon countries in one degree or another, all share. Deforestation, generally associated to the expansion of the agricultural and livestock frontier, results in the loss of biodiversity and other ecosystem services. Legal and illegal mining generate deep contamination of water basins and also affect general biodiversity in the Amazon. On a larger scale, hydroelectric power plants and fuel generation activities have much greater environmental impacts. The above mentioned activities usually take place in a context of conflict with indigenous and rural communities that are deeply affected by the interventions. On the other hand, the expansion of the agricultural and livestock production frontier and the activities from mining and energy demand the development of roads and infrastructure, which is the main vehicle driving the penetration of forests. In many of the Andean countries there are also territories that present violent contexts associated to the production of illegal crops.

Climate change variations have given rise to flooding and droughts of significant magnitude. The entire territory, including the urbanized areas, is highly vulnerable to climate change, and the coastal regions of countries like Guyana and Surinam are susceptible to flooding due to rising sea levels.

With the exception of a few cities (such as Manaus) that have state promoted industrial development, the main economic activity is extraction, usually with very little added value. In some regions there is net migration to the Amazon from poor rural zones, like the northeast of Brazil and rural peasant communities in the Andes highlands. In other countries, to the contrary, migration is happening in the direction of cities and even other countries, as is the case of Guyana and Surinam.

The development of urban areas has been a process marked mainly by the lack of urban planning. In most countries, the troubles afflicting urban centers are mainly deficiencies in providing treated drinking water, sanitation and waste management. This is especially more severe in small and medium sized cities. In the larger cities the problem of urban transport is common.

To differing degrees in each country, cities in the Amazon present a lack of articulation, internally, as well as with other cities in the Amazon region of their countries. Take the case of Bolivia, for example, where there is a gap between the urban development of Santa Cruz and Cochabamba and the rest of the urban Amazon system. In the Colombian, Peruvian and Equatorial Amazon there is the same lack of articulation and isolation of national urban centers. There is a process of consolidation and integration of the urban center of piedemonte, albeit with little hierarchy in the prioritization of the supply of services, weak economic structures and a lack of productive and commercial processes.

The study, more specifically, identifies a series of gaps in terms of actions, research and information available on the region, gaps that should be filled in order to achieve sustainable development in the Amazon. One of the gaps is the lack of intersectorial and international planning in the countries that were studied, in other words, clear articulation amongst players and sectors that intervene in the Amazon region is missing. This articulation is also lacking in regards to the programs that are implemented and the national urban environmental frameworks, especially with regards to territorial planning. The weak technical capacity for planning and managing development in urban centers is another obstacle for sustainable development in the region. In the legal and institutional frameworks of the Amazon there are also gaps, one of which is the lack of specific institutional strengthening programs tailored to the particular needs of the region, and a legal framework that incorporates a specific focus for the Amazon is missing, taking into consideration, for example, the traditional and communitarian land tenure.

Another gap in the lines of action is the lack of planning of internal migrations associated to the activities of mining, agriculture, logging and reforestation, in other words, activities that demand new services and equipment in the urban settlements and should be considered aspects of development and should be reflected in the local urban and environmental plans for sustainable development. Lastly, another important gap identified is the lack of information regarding the development of participatory processes that engage communities and citizen participation in planning and decision making for issues related to urban development, which plays an important role in sustainable development.

On another note, there are a series of gaps in the area of generating research and information that hinder the achievement of sustainable development, there is, for example, a lack of clear information and knowledge regarding the relations between urban systems, the processes of urbanization and sustainable use of national resources in the Amazon, which imply limitations in the sustainable planning and management of the region and its development. Alongside this, despite the Amazon being characterized by its indigenous populations, there is not enough detailed information on these communities that play such an important role in the urban centers and settlements, there is also scarce information and limited access regarding the results and progress of projects directed at these groups.

In relation to the framework for monitoring the Amazon there are gaps and limitations in research and information. For instance, there is no specific data base for the region, nor is there a differentiation of regional indicators that are important to the identified local urban context, indicators which would be necessary for understanding the unique and complex characteristics in this region and that help guide the region towards sustainable development. The obstacle of a lack of technical and professional capacity for information management in the region is directly connected to this situation. It's important to highlight that despite this, countries in this region have made important progress in forming research institutes, universities and programs directed specifically towards the Amazon, but a more solid network for research focused on the urban development and urbanization of the region has yet to be established.

5. RECOMMENDATIONS REGARDING THE INFORMATION GAPS

Sustainable development in the Amazon is marked by its scarcity and dispersed efforts. In light of this reality, a series of recommendations have been elaborated in order to overcome this challenge and the gaps regarding information and research in the Amazon region. These recommendations aim to offer subsidies to support the countries in facing the common challenges of their region, all the while taking into consideration the need to adapt or broaden each of the recommendations so that they fit the local, national and territorial contexts.

The recommendations aim at substantiating the generation of an information database based on local, national or regional information that will help decision and public policy makers, as well as support strategic

lines of action for sustainable development in the region.

Recommendations to overcome information and research gaps for sustainable urban development in the Amazon:

- Strengthen and integrate the systems for collecting and managing urban information and adapt these systems to the regional context (carried out by public and private sector authorities).
- Make the regional, sub-regional, national and subnational monitoring systems more robust in order to better guide policies, plans, programs and initiatives working towards sustainable urban development and the mitigation of and adaptation to climate change.
- Encourage international cooperation and take advantage of the existing agreements in order to simplify and strengthen the exchange of information, methodologies and capacity building.
- Improve technical and professional capacities in the Amazon at a systemic, individual and institutional level in order to strengthen and develop carbon neutral, green economy, and energy efficient strategies as well as integral management at basin level.
- Foster the knowledge and information databases on the priority issues pointed out in the present study, and other studies:
 - The correlation between the formation of settlements and the expansion of the agricultural frontier, deforestation and the effects of the urban ecological footprint on its surroundings.
 - The role of urban centers in the development of the Amazon and urban dynamics related to the processes of rural land transformation.
 - Water as a central theme for sustainable urban development.
 - Updated numbers regarding the demand for energy in the region, in order to identify the most efficient investments and those of lowest impact.
 - Production and management of waste in amazon cities.
 - Immigrational processes in the Amazon, considering aspects such as quantity, social and geographic origin, and cultural and environmental impacts of the migrations.
 - The development of public transportation the urban centers of the Amazon.
 - Urban violence and its socioeconomic, cultural and environmental causes.
 - The effects of climate change (the formation of heat islands over urban centers, the dynamics of annual floods and droughts), and its consequences on energy consumption and public health in urban amazon centers.
 - The balance of national income associated to mineral and energetic exploration, infrastructure development and the socioenvironmental cost-benefits.

6. RECOMMENDATIONS FOR THE ELABORATION OF POLICIES, AGENDAS, PROGRAMS AND PROJECTS AIMED AT SUSTAINABLE URBAN DEVELOPMENT IN THE AMAZON.

The set of recommendations summarized below aims to strengthen the elaboration of policies, projects, programs and agendas for sustainable urban development in the Amazon, which were conceived considering the challenges common to countries in the region, all the while recognizing the need to adapt an broaden

each of these to the national, regional and territorial contexts. Specifically, these recommendations seek to integrate the homogenous nature of contexts, challenges and priorities observed in the region to foster strategic planning and urban and territorial management at the regional level and progress towards sustainable urban development in the Amazon.

Recommendations of actions for sustainable urban development in the Amazon:

- Strengthen the process of strategic urban and territorial planning in the Amazon as a whole, working towards sustainable urban development.
- Improve territory based planning by identifying functional subzones for intervention in the Amazon.
- Strengthen the connectivity and interurban coordination, between cities and urban areas in the Amazon.
- Increase technical capacity of local and national governments for managing and planning sustainable urban development.
- Support and strengthen indigenous communities and the role they play in achieving sustainable urban development in the Amazon.
- Promote the production of sustainable infrastructure as well as sustainable management of natural resources and ecosystem services.
- Promote the conservation of the amazon rainforest in regards to climate change.
- Strengthen the management of waste and basic sanitation to improve the populations access and minimize the negative environmental and social impacts.

7. THE REGIONAL ACTION PLAN FOR IMPLEMENTATION OF THE NEW URBAN AGENDA IN LATIN AMERICA AND THE CARIBBEAN AND SUSTAINABLE URBAN DEVELOPMENT IN THE AMAZON.

The Regional Action Plan for the implementation of the New Urban Agenda in Latin America and the Caribbean (RAP), developed by CEPAL, the United Nations Program for Human Settlements (ONU-Habitat) and the Forum of Ministers and High Authorities of the Latin American and Caribbean Housing and Urbanism sector (MINURVI) in collaboration with experts, aims to promote the implementation of the region's NUA, besides recognizing and highlighting the connection between the NUA and the SDGs. The RAP sets a series of goals and key components for each of the six lines of action:

1. National urban policies
2. Legal urban frameworks
3. Urban and territorial planning and integrated urban design
4. Urban economy and municipal finances
5. Local implementation
6. Mechanisms for monitoring, reporting and verification¹

¹ Specific Axis for the Latin American and Caribbean Region.

The RAP identifies a connection with the SDGs and their goals with each of the objectives of each axis of action. Reviewing the RAP in the framework of the sub regional, national and subnational contexts can be useful in establishing a baseline to measure the progress towards the implementation of the NUA of each context and identify the synergies between already existing and emerging actions at each level that are in line with the goals of the NUA and SDGs. The study identifies some of the synergies that were identified amongst the recommendations proposed by the present study and the axes of action and the goals proposed by the PRA. This connection aims to guide and analysis at a national or citywide level, thus working to strengthen the strategic planning and identify synergies with emerging initiatives, the NUA and SDGs, and mobilize technical and financial assistance for the Amazon region within the framework of the international agreements and agendas.

8. CONCLUSION

The unique Amazon context has been understudied, as this study reveals. There is a general context of scarce and dispersed information in terms of the region's urban development. Specifically, there is a lack of information and knowledge on the relationships between urban and environmental systems, impacts and implications of urbanization, infrastructure projects and economic activities associated to mining, agriculture, logging and forestation, amongst others. The changes of land use in the zone attributed to these activities have generated accelerated transformation of the amazon ecosystem, where an analysis from the urban perspective is still missing. Within the scope of global agendas aiming towards sustainable development, such as the 2030 Agenda and the NUA, this study contributes to the needed understanding on patterns of development in each sub region, and identifies the gaps in terms of information and actions that will make the achievement of sustainable urban development in this area possible. On the other hand, the study attempts to provide a global vision on the urban context in the three sub regions that can be relevant and useful in decision making, strategic urban and territorial planning and the sustainable development in the eight countries included in the study. Through the recommendations that the study points out it also proposes to leverage the generation of an urban information database, an urban research agenda and the elaboration of policies, programs and projects that will be fit to steer the development and urbanization of the Amazon towards a sustainable future.

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